

**Evaluation of the Nutrition
Assistance Program in Puerto
Rico Volume I: Environment,
Participation, Administrative
Costs, and Program Integrity
(Formerly referred to as the
Puerto Rico Nutrition Evaluation
Interim Report)**

March 1, 1985

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Submitted by:
Mathematica Policy Research
P.O. Box 2393
Princeton, NJ 08543-2393
Telephone: (609) 799-3535
Facsimile: (609) 799-0005

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EVALUATION OF THE NUTRITION ASSISTANCE
PROGRAM IN PUERTO RICO

Volume I

Environment, Participation, Administrative Costs, and Program Integrity

EXECUTIVE SUMMARY

On July 1, 1982, the Commonwealth of Puerto Rico began operating a cash food assistance program, known as the Nutrition Assistance Program (NAP), as a replacement for the existing Food Stamp Program (FSP). The FSP had provided eligible low-income individuals and families with assistance since 1974 in the form of food coupons. This program change was implemented as a result of the mandate of the Omnibus Budget Reconciliation Act of 1981 (Public Law 97-35) that Puerto Rico's participation in the U.S. Food Stamp Program be replaced by an annual \$825-million block grant to provide food assistance for needy persons, and because Puerto Rico subsequently decided to replace food coupons with direct cash assistance.

The Nutrition Assistance Program differs from the June 1982 Puerto Rico Food Stamp Program in four important respects: the food coupons have been replaced by cash benefits; income eligibility limits and benefits have been reduced to bring program costs into line with the reduced funding level of the block grant; the block grant Program has been capped at an annual budget of \$825 million; and household eligibility verification activities have been intensified.

This is the Interim Report of the evaluation of NAP mandated by the bill extending the cash nutrition assistance program in Puerto Rico until July 31, 1985 (H.R. 4252, later passed as P.L. 98-204). Because the data on which much of this study is based (the 1984 Puerto Rico Food Consumption Survey) were not available until late January 1985, the full results of this study will not be presented to Congress until June 1985, following the completion of the analysis of the impacts of NAP on household food expenditures and the nutritional adequacy of their diets.

This Interim Report describes the setting of the switch to NAP in terms of the unique socioeconomic and demographic environment of Puerto Rico. It also reports on the effects of NAP on program benefits and participation, administrative costs, and fraud and error. The Final Report in June will provide the remaining information requested by Congress on the impact of NAP on both household food expenditures and nutrient availability.

The Puerto Rico Program Setting

The Puerto Rico program setting is markedly different from that of any of the 50 states, and generalizations from the states to Puerto Rico or vice versa may not hold. The Puerto Rico setting is characterized by:

- o A unique relationship between the Commonwealth of Puerto Rico and the federal government.

- As a Commonwealth, Puerto Rico shares a common currency and defense with the United States, shares U.S. citizenship, and has the same control over internal affairs and the same free mobility of goods, capital, and labor as a state.
- In contrast to state status, as a Commonwealth, Puerto Rico is exempt from federal income taxes, has limited participation in several major federal assistance programs, and has no voting representation in the U.S. Congress.
- Federal transfers to Puerto Rico have risen dramatically over the past 45 years despite limitations on many programs. Federal transfers constituted 22 percent of personal income in FY 1981 up from 1 percent in FY 1940 and 10 percent in FY 1974.
- While federal transfers are much higher in relation to personal income in Puerto Rico than in the 50 states, the absolute level per capita is smaller in Puerto Rico, \$847 vs. \$1,595 in 1981 (nominal dollars). The Food Stamp Program accounted for 32 percent of the \$847 per capita federal transfer.
- o While the Puerto Rico economy has been growing, unemployment remains high and per capita income is far below the U.S. level.
 - Unemployment has remained over 15 percent since 1975 and has been over 20 percent since 1982, despite a falling male labor-force participation rate.
 - Mean family income in Puerto Rico, as measured in the 1980 U.S. Census, was only slightly above the U.S. poverty-level index and was just over one-third mean family income in the United States.
 - The percent of families in Puerto Rico with incomes less than the U.S. poverty-level index in 1979 was 58 percent, compared to 10 percent for the United States.
- o Population growth rates in Puerto Rico continue to be much higher than in the United States as a whole, with the resulting pressure on unemployment rates and poverty.
 - Population growth is the result of both higher birth rates and lower death rates than in the United States as a whole.

- Out-migration to the U.S. mainland has relieved some of the pressures of population growth and the scarcity of employment.
- o The vital statistics data are indicative of an overall health status in Puerto Rico that is comparable to the United States.
 - Infant mortality rates have declined sharply from about 70 per 1000 live births in 1950 to about 19 in 1980.
 - Life expectancy at birth has increased from very low levels in the 1940s to levels comparable to the United States.
 - The low death rates in Puerto Rico represent a success story in terms of improved health conditions.
- o Household food expenditures have gradually increased over the past 35 years, but have consumed a smaller share of household budgets as personal income has risen.
 - The introduction of the FSP in 1974 resulted in a significant upward shift in food expenditures. However, after shifting to the higher level, the share of income spent on food has continued to decline.

NAP Effects on Benefits and Participation

The Nutrition Assistance Program (NAP) sharply restricted program eligibility and retargeted benefits to households with less income. The specific effects of NAP were:

- o The reduction of the gross monthly income limit from \$916 to \$667 per month, a 27 percent reduction, and other changes had a large effect on the number of participating households.
 - One year after NAP implementation there were 95,000 fewer participating households than in June 1982, an 18 percent reduction. This reduction is fully attributable to NAP since economic conditions were broadly constant.

- By June 1984 there were 109,000 fewer participating households than in June 1982. However, the additional reduction of 14,000 is likely due in part to the continuing effects of NAP and in part to the slight improvements in the economy.
- o The elimination of households above about 85 percent of the U.S. poverty index in July 1982 substantially retargeted benefits to the lowest income households.
 - The percentage of households with income above 75 percent of the poverty line fell from about 10 percent in June 1982 to about 1 percent in June 1984.
 - The number of participating households with earnings declined by 47 percent between June 1982 and June 1984.
 - The number of households with an elderly or disabled members increased by approximately 11 percent over the same period.
 - While most households remaining on the program had their actual benefits reduced somewhat under NAP, the June 1984 household monthly benefit on average increased by about \$10 because those households with higher income and the associated lower benefits, were no longer eligible. The comparable per capita increase was about \$1.

NAP Effects on Administrative Costs

The cash issuance aspect of NAP was expected to produce substantial savings in administrative costs. This analysis indicates that the overall administrative cost reduction of \$9.6 million or 18 percent (constant 1983 dollars) in the second year of NAP was the result of three factors:

- o A cost savings attributable to cash issuance of between \$5.8 and \$8.2 million per year, reductions in costs of 11 and 16 percent, respectively. The \$5.8 million is a "best-guess" estimate and \$8.2 million is the upper-bound estimate.
- o Additional savings due to the reduction in certification staff that were made possible by the large caseload reduction.
- o Offsetting cost increases because additional staff effort was devoted to ensuring that applicants eligibility and benefits were accurately determined.

NAP Effects on Fraud and Error

NAP had been expected to reduce the level of error and fraud in the administration of the food assistance program. The available data provide no solid evidence that fraud and error were reduced. Nonetheless, Puerto Rico did implement a major set of program changes while keeping rates of error, fraud, and abuse under NAP at levels quite similar to averages across states and to pre-NAP levels.

- o While the percent of cases in error because of ineligibility and overissuance has declined slightly under NAP, this appears to represent the continuation of a downward trend begun well before the implementation of NAP.
- o The percent of total payments which are erroneous over payments has remained approximately unchanged under NAP.
- o While the number of cases referred for fraud hearings has remained about the same, the proportion of fraud hearings which have lead to findings of fraud has increased-- 63 percent under NAP compared with 22 percent under the FSP.

Misuse of Food Coupons

An important question for this research was the extent to which the coupons of the FSP were exchanged for cash or used for ineligible nonfood items. This question is important because if the "cashing in" or use of coupons for ineligible items was widespread, then coupons are not conceptually different than cash and there is little basis for expecting food expenditure to drop as a result of cash issuance.

In order to probe the extent of coupon misuse, focus groups were held with former FSP recipients in four locations across the Island.

- o These discussions indicated that the use of food coupons to purchase nonfood items was common although the focus group methodology does not allow the prevalence to be quantified.
- o These discussions also indicated that the stores usually gave less than the full value when accepting coupons for ineligible items or cash.

NAP Effects on Food Expenditures and Nutrition

In order to assess whether household's food expenditures and nutrient availability were affected by cash issuance, household survey data on food expenditures and nutrient intake before and after the conversion to NAP are used. The first survey was fielded in Puerto Rico during 1977 and the second was conducted during 1984, after Puerto Rico's cash Nutrition Assistance Program (NAP) had been operating for about two years.

Tabular comparisons of the 1977 and 1984 data will provide an initial description of food expenditures, food consumption, and nutrient availability. However, comparison of food expenditures on the 1977 survey with those on the 1984 data cannot be used directly to assess the impact of cash issuance because of the other intervening changes between 1977 and 1984. The Food Stamp Program (FSP) was quite different in June 1982 prior to NAP than it was in 1977. Statistical analysis will be used to isolate the effects of the replacement of coupons with cash issuance from the effects of the other changes. Both program participation and food expenditures will be analyzed, and the resulting estimates from these statistical models will be used to make separate predictions of the effects of eliminating the purchase requirement (EPR) in 1979 (which is necessary because the 1977 household data are pre-EPR), the effects of the block grant benefit reduction, and the effects of the change from coupons to cash. The effects on the nutrient availability of diets will be estimated from statistical models of the relationship between food expenditures and nutrient availability.

The questions examined in the research on the food expenditure and nutritional impacts include the following:

- o What was the change in household food expenditures from 1977 to 1984? How much of that change was due to:
 - Cash issuance?
 - Reduced food benefits?
 - Elimination of the purchase requirement?
 - Other factors?

- o What was the change in nutrient availability from 1977 to 1984? How much of that change was due to:
 - Cash issuance?
 - Reduced food benefits?
 - Elimination of the purchase requirement?
 - Other factors?

The results of the analyses of household food expenditures and nutrition are not yet available, but will be presented in the June 1985 Final Report.

PREFACE

This report was prepared by Mathematica Policy Research under contract no. 53-3198-4-63 from the U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis and Evaluation. This is the Interim Report of our evaluation of the impacts of NAP on food expenditures and nutrient availability.

This report represents a team effort in which many individuals made key contributions in addition to the authors. We gratefully acknowledge their assistance. We would like to recognize the sustained help and encouragement of Linda Esrov, the Food and Nutrition Service Project Officer. The officials of the Puerto Rico Department of Social Services as well as other agencies were most helpful in providing data and information. The members of the project advisory panel, Stanley Johnson, Lance Taylor and David Wise, provided important comments on the analysis plans as did Mary Hama, Human Nutrition Information Service, United States Department of Agriculture, and David Smallwood, Economic Research Service, United States Department of Agriculture.

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Harold Beebout
John Burghardt
Barbara Devaney
Thomas Fraker
Alan Hershey
Sharon Long
Peter Mossel

I. OVERVIEW

A. RELATIONSHIP OF THIS REPORT TO THE JUNE 1985 REPORT

This is the one of two reports to result from the second Congressionally mandated study of the cash food assistance program in Puerto Rico, known as the Nutrition Assistance Program (NAP). The earlier study, mandated by Public Law 97-253, focused on the initial implementation of NAP and its effects on program participation and costs; a report on the results of the first study was submitted in March 1983. The primary objective of the second study, mandated by Public Law 98-204, is to analyze on the effects of NAP on food expenditures and nutritional adequacy. The secondary objective is to describe the setting of the switch to NAP in terms of the unique socioeconomic and demographic environment of Puerto Rico and to report on the effects of NAP on benefits and participation, administrative costs, and fraud and error.

Because the 1984 Puerto Rico Food Consumption Survey data (on which much of the second study is based) were not available until late January 1985, the study will not be completed until June 1985. This report provides the information requested by Congress to meet the secondary objective. The June 1985 report will provide the remaining information requested by Congress upon completion of the analysis of the impacts of NAP on household food expenditures and the nutritional adequacy of diets.

B. THE NUTRITION ASSISTANCE PROGRAM

On July 1, 1982, the Commonwealth of Puerto Rico began operating a cash food assistance program, known as the Nutrition Assistance Program, to

replace the existing Food Stamp Program (FSP) which since 1974 had provided eligible low-income individuals and families with assistance in the form of food coupons. This program change was implemented because the Omnibus Budget Reconciliation Act of 1981 (Public Law 97-35) mandated that Puerto Rico's participation in the U.S. Food Stamp Program be replaced by an annual \$825-million block grant to provide food assistance for needy persons, and because Puerto Rico subsequently decided to replace food coupons with direct cash assistance.

The Nutrition Assistance Program continued to serve the same program purpose as the Food Stamp Program: "To . . . permit low income households to obtain a more nutritious diet through normal channels of trade by increasing food purchasing power."¹ NAP also continued to use the same basic program structure and retained most of the operational features of the FSP.

NAP differs from the June 1982 Puerto Rico Food Stamp Program in four important respects: the food coupons have been replaced by cash benefits, income eligibility limits and benefits have been reduced to bring program costs into line with the reduced funding level of the block grant, the entitlement nature of the program has been eliminated by capping the block grant at \$825 million, and household eligibility verification activities have been intensified.

The most relevant NAP operational change in terms of this evaluation is the change in the form of the benefit issuance. Under the NAP, recipients receive monthly benefits in the form of a check, rather than as

¹Public Law 95-113, Food Stamp Act of 1977, Sec. 2.

coupons. Under the former Food Stamp Program, each authorized household was mailed an authorization to participate (ATP) card each month. Recipients then exchanged the ATP card for food stamps at their local Department of Social Services (DSS) office. Under NAP, checks are mailed directly to recipients from a central processing facility. Unlike food coupons, NAP checks are freely negotiable for currency. Like food coupons, the checks are intended to increase the food-purchasing power of recipients.

The switch to NAP also included reductions in eligibility limits and benefit standards in order to keep the program within the legislatively reduced budget. While the FSP is indexed for inflation, the difference between the funding for NAP and the funding which would have been received under a continued FSP increases each year. The NAP gross income limit for a household of four is \$8,000 per year, compared with the limit of \$13,260 that would have applied to the former Food Stamp Program in January 1985. Similarly, the NAP maximum benefit for the same household is \$199, compared with the estimated \$250 under the former Food Stamp Program.¹ Further, under NAP, the benefit amounts may be adjusted up or down each month by the proportion required to bring aggregate benefits into line with available funds.

Another important change was the intensified verification of household income and circumstances. For example, home visits are now conducted

¹The NAP benefit was set at \$199, which was 90 percent of the Puerto Rico FSP maximum benefit of \$221 in June 1982. From June 1982 to January 1985, the FSP maximum benefit for the continental United States has increased from \$233 to \$264 for a household of four. Applying the same percentage increase to the Puerto Rico amount of \$221 produces the estimate of \$250.

to verify information for all new applicants and for a small sample of recertifications. Such visits were not a normal practice under the FSP.

C. THE EVALUATION OF NAP

The bill which extended the cash Nutrition Assistance Program in Puerto Rico (H.R. 4252, later passed as P.L. 98-204) mandated this evaluation. The primary objective of this evaluation is to determine whether replacing food coupons with cash assistance has affected food expenditures of participating households and the nutritional adequacy of their diets. Two secondary objectives were the description of the economic and demographic context of the NAP change and the description of effects of NAP on benefits, participation, administrative costs and program integrity.

1. Effects on Food Expenditures and Nutrition

In order to assess whether food expenditures and nutrient availability were affected by cash issuance, information is needed on household food expenditures and nutrient intake before and after the conversion to NAP. Data on food expenditures and nutrient availability are available from two Puerto Rico household food consumption surveys. The first survey, fielded during 1977 when the former Food Stamp Program was in effect, was a supplement to the Nationwide Food Consumption Survey. A similar survey was conducted during 1984, after Puerto Rico's cash Nutrition Assistance Program had been operating for over two years. Because data from the 1984 survey only became available in late January 1985, results on food expenditure and nutrition impacts will not be completed until June 1985.

Tabular comparisons of the 1977 and 1984 data will provide an initial description of food expenditures and nutrient availability.

However, comparison of food expenditures on the 1977 survey with those on the 1984 data cannot be used directly to assess the impact of cash issuance because of the other intervening changes between 1977 and 1984. The food stamp program was quite different in June 1982 prior to NAP than it was in 1977. For example, the purchase requirement in the FSP was eliminated in 1979, a change that might affect food expenditures in much the same way as the change to cash issuance. Other changes that make direct comparisons of the 1977 and 1984 data not very useful include the eligibility and benefit reductions associated with the block grant and the compositional differences in the characteristics of participating households. Statistical analysis will be used to isolate the effects of the replacement of coupons with cash issuance from the effects of the other changes. Both program participation and food expenditures will be analyzed, and the resulting estimates from these statistical models will be used to make separate predictions of the effects of eliminating the purchase requirement (EPR) in 1979 (which is necessary because the 1977 household data are pre-EPR), the effects of the block grant benefit reduction, and the effects of the change from coupons to cash. The effects on the nutrient availability of diets will be estimated from statistical models of the relationship between food expenditures and nutrient availability. Together, these analyses will estimate the relative effect of cash versus coupons on household food expenditures and dietary adequacy.

The questions examined in the research on the food expenditure and nutritional impacts include the following:

- o What was the change in household food expenditures from 1977 to 1984? How much of that change was due to:

- Cash issuance?
- Reduced food benefits?
- Elimination of the purchase requirement?
- Other factors?

- o What was the change in nutrient availability from 1977 to 1984? How much of that change was due to:

- Cash issuance?
- Reduced food benefits?
- Elimination of the purchase requirement?
- Other factors?

The results of the analyses of household food expenditures and nutrition are not yet available, but will be presented in the Final Report. These specific research objectives and the methodologies being used to address them are shown in Table I.1. These are discussed in detail in Chapter IV of this Interim Report.

2. Economic and Demographic Environment

The description of the unique economic and demographic setting in Puerto Rico within which the conversion to cash assistance occurred provides the important context for this assessment of the impacts on food expenditures and nutrition. These analyses of the environment of the changes also help identify and, where possible, quantify the numerous factors other than the NAP changes which have also affected food expenditures and, hence, may confound the analysis of food expenditures and dietary adequacy.

TABLE 1.1

RESEARCH QUESTIONS, DATA SOURCES, AND METHODOLOGIES

Research Questions	Data Sources	Methodology	Report
Impact Analyses			
What was the change in household food expenditures from 1977 to 1984? How much of that change was due to: Cash issuance? Reduced food benefits? Elimination of the purchase requirement? Other factors?	Puerto Rico 1977 and 1984 household food surveys	Tabular comparisons, statistical analysis and simulation	Final Report only
What was the change in nutrient availability from 1977 to 1984? How much of that change was due to: Cash issuance? Reduced food benefits? Elimination of the purchase requirement? Other factors?	Puerto Rico 1977 and 1984 household food surveys	Tabular comparisons, statistical analysis and simulation	Final Report only
Descriptive Analyses			
How have population growth, urbanization, and changing demographic composition affected the number of families below the poverty level and, hence, the scale of the food assistance programs?	Data from the 1970 and 1980 Census	Descriptive analyses	Interim Report
How have economic growth and employment affected the number of families below the poverty level and, hence, the scale of the food assistance programs?	Data from the 1970 and 1980 Census; Puerto Rico income and product accounts; P.R. Bureau of Labor Statistics	Descriptive analyses	Interim Report

Continued--

TABLE I.1 (continued)

Research Questions	Data Sources	Methodology	Report
Do the Puerto Rico health status data indicate particular nutritional problems?	Puerto Rico vital statistics and special health survey data	Descriptive analyses	Interim Report
What has been the pattern of food consumption in Puerto Rico over time?	Time-series data from Puerto Rico Income and product accounts	Descriptive and econometric analyses	Interim Report
What have been the effects of the switch to NAP on benefits and participation? What were the earlier effects of EPR?	Administrative data from DSS and FNS/USDA	Descriptive and statistical analyses	Interim Report
How has the composition of recipient households changed as a result of NAP?	Master case record files for selected months	Descriptive analyses	Interim Report
What administrative cost savings have been generated by the switch to NAP?	Program operations data	Descriptive analyses and pre/post comparisons	Interim Report
How did the level of fraud and error change with the switch to NAP?	Quality control system data	Descriptive analyses and pre/post comparisons	Interim Report
What was the extent of trafficking in food stamps?	Focus groups of recipients	Small group discussions with former food stamp recipients	Interim Report

The results of these analyses are discussed in this Interim Report. The questions examined in the research on the economic and demographic context include the following:

- o How have population growth, urbanization, and changing demographic composition affected poverty and, hence, the scale of the food assistance program?
- o How have economic growth and employment, interacting with the demographic factors, affected poverty and, hence, the scale of the food assistance program?
- o What do vital statistics data tell us about trends in health status in Puerto Rico?
- o What has been the pattern of food consumption in Puerto Rico over time and how does it pertain to economic changes, demographic changes, and food assistance program changes?

3. Effects on Program Participation, Administrative Costs and Program Integrity

The other secondary objective is the assessment of three important program outcomes. The first component of the analyses describes how benefits and program participation changed over the 1977 to 1984 period with particular attention to the change resulting from switch to NAP. The second component of the analysis indicates the level and source of administrative cost savings generated by the change from coupons to cash. The third component of the analysis provides information on the level of fraud and error under the former FSP and under NAP. These analyses also help describe the program changes as a context for analyzing the impact of the switch to cash issuance on household food expenditures and dietary

the role of federal transfers, particularly those pertaining to food assistance.

Federal transfers to Puerto Rico have risen dramatically over the past 45 years. In FY 1940, total payments from federal sources accounted for less than one percent of personal income in Puerto Rico. By FY 1974, the year prior to FSP implementation in Puerto Rico, they had risen to 10 percent of personal income, and by FY 1981, the year prior to NAP, federal transfers constituted 22 percent of personal income. During the period from FY 1974 to FY 1981, federal transfers on the U.S. mainland accounted for between 12 and 14 percent of personal income.

The rapid increase in federal transfers in Puerto Rico reflects to some extent the scale of federal food assistance programs. In FY 1974, the commodity distribution program and the National School Lunch and School Breakfast programs (the primary food assistance programs in Puerto Rico at that time) accounted for 15 percent of all federal transfers, while in FY 1981, School Lunch programs, combined with the Food Stamp Program and WIC, accounted for about 38 percent of all federal transfers.

Although federal transfer payments in Puerto Rico constitute a high proportion of their lower levels of personal income, the absolute level of payments per capita is substantially lower than in the United States as a whole. For example, per capita benefits from federal transfers in FY 1981 were \$847 in Puerto Rico, compared with \$1,595 on the U.S. mainland (in nominal dollars).¹ This lower level of benefits is due to the fact Puerto

¹Unless otherwise noted, all dollar amounts in Section A have been adjusted for price changes and are in constant 1983 dollars. In addition, all growth rates are in real terms (i.e., adjusted for inflation).

common currency and defense with the United States, shares U.S. citizenship, and has the same free mobility of goods, capital, and labor. In addition, Puerto Rico participates in many U.S. programs, including most USDA food assistance programs (e.g., the National School Lunch and School Breakfast programs, the commodity distribution program, and the Special Supplemental Food Program for Women, Infants and Children (WIC)).

However, the Commonwealth status differs from a state status in several important respects. First, Puerto Rico has been exempt from federal personal and corporate income taxes since 1948. Second, although residents of Puerto Rico who live on the Island are U.S. citizens and are subject to the U.S. military draft, they cannot vote in federal elections and have no voting representation in the U.S. Congress. Third, and of particular pertinence to this study, Puerto Rico does not participate in several major federal assistance programs (e.g., General Revenue Sharing and Supplemental Security Income) and participates only to a limited extent in other programs (e.g., Aid to Families with Dependent Children). The replacement of the Food Stamp Program (FSP) in Puerto Rico with a block grant with reduced funding is an important example of the unique status of Puerto Rico.

Despite limitations on U.S. social programs in Puerto Rico, aid from the federal government has become an extremely important element of the economy of Puerto Rico and an important source of economic support for a large portion of the population. The federal government provides grants to the Commonwealth and municipality governments, services through federal agencies operating on the Island, and direct transfers to the residents of Puerto Rico. The discussion in the remainder of this section focuses on

starting with the Foraker Act¹ of 1900, under which the President appointed a governor, cabinet, Senate, and Supreme Court; the members of the House of Delegates were chosen by the electorate of Puerto Rico. The Jones Act of 1917² granted naturalized U.S. citizenship to all citizens of Puerto Rico and allowed the Puerto Rico population to elect the Island's House and Senate. The Elective Governor Act³ of 1947 granted the people of Puerto Rico the right to elect their own governor and enabled that governor to appoint the Cabinet and Supreme Court. Following the elections of 1948, Puerto Rico had a popularly elected government for the first time.

Although federal legislative actions from 1900 to 1950 increased the autonomy of the Island's local government, dissatisfaction with the relationship between Puerto Rico and the United States continued. In 1950, the U.S. Congress passed Public Law 600,⁴ which authorized Puerto Rico to organize a constitutional government subject to the approval of the people of Puerto Rico and the U.S. Congress. The constitution became effective on July 25, 1952, and the status of Puerto Rico changed from an unincorporated territory to an Estado Libre Asociado, or Commonwealth,⁵ with more authority to organize its own government.

As a Commonwealth, Puerto Rico is in many areas treated as a state. It has the same control over internal affairs as a state, shares a

¹Act of May 1, 1900, 31 Stat. 77-86.

²Act of March 2, 1917, 39 Stat. 951-968.

³Act of August 5, 1947, 61 Stat. 770-773.

⁴Act of July 3, 1950, 64 Stat. 319-320.

⁵The direct translation of Estado Libre Asociado is Free Associated State.

II. THE PUERTO RICO PROGRAM SETTING

A. THE SOCIOECONOMIC AND DEMOGRAPHIC ENVIRONMENT OF THE FOOD PROGRAM CHANGES

The implementation of the Nutrition Assistance Program (NAP) occurred against a backdrop of changes in the socioeconomic environment of Puerto Rico during the late 1970s and early 1980s. It is important to understand and, to the extent possible, consider these social, economic, and demographic factors in analyzing the effects of the conversion to NAP on food expenditures and nutritional adequacy. Section A.1 provides an overview of the political history of Puerto Rico, and especially of the relationship of Puerto Rico to the U.S. government. Section A.2 describes the social, demographic, and economic environment of Puerto Rico, emphasizing trends in employment, the extent of poverty, and the composition of the population in poverty. In Section A.3, available information on trends in food consumption expenditures in Puerto Rico are examined.

1. Political History: Relationship with the U.S. Government

After almost 400 years of Spanish control, Puerto Rico was ceded to the United States in the 1898 peace agreement which ended the Spanish American War.¹ Over time, Congress has gradually redefined the relationship between Puerto Rico and the United States by expanding self-rule,

¹This section is based largely on U.S. Department of Commerce, Economic Study of Puerto Rico, Washington, DC: U.S. Government Printing Office, 1979; and U.S. General Accounting Office, Puerto Rico's Political Future: A Divisive Issue with Many Dimensions, Washington, DC: U.S. Government Printing Office, 1981.

adequacy. The questions examined under this objective include the following:

- o What have been the effects of the switch to NAP on benefits and participation over the past two years? What were the earlier effects of the EPR?
- o How has the composition of participating households changed in the switch to NAP?
- o What were the administrative cost savings generated by the switch to NAP?
- o What was the level of fraud and error in the Puerto Rico FSP, and what was its change under NAP?
- o What was the extent of food stamp trafficking, and how may that affect the expected impact of cash issuance?

D. REMAINDER OF THIS REPORT

The organization of this report is as follows. Background for the evaluation of NAP is presented in Chapter II, which includes (1) a description of the socioeconomic and demographic environment of Puerto Rico both pre- and post-NAP and (2) a detailed discussion of the NAP program changes. The results to date of the Puerto Rico Nutrition Evaluation are presented in Chapter III which reports on the effects of NAP on benefits and participation, administrative costs, and fraud and error. Chapter IV discusses the planned analysis of the key question of this evaluation: What was the impact of NAP on household food expenditures and nutrient availability? The results of that analysis will be reported in the Final Report to Congress in June 1985.

Rico receives differential treatment in several important federal social welfare programs. For example, Puerto Rico is excluded from General Revenue Sharing, Supplemental Security Income (SSI), and the Prouty program (a special Social Security program). It also participates only to a limited extent in the AFDC, Social Services, Medicaid, and Educationally Deprived Children programs. The following have been major Congressional arguments against the full participation of Puerto Rico in all social-aid programs:

- o That the residents of Puerto Rico do not contribute to the Federal Treasury because Puerto Rico is exempt from the U.S. personal and corporate income tax
- o That the cost of extending equal treatment to Puerto Rico under all federal grant programs would be extremely high, and Puerto Rico would receive a disproportionately large share of the total federal funds available for poverty programs
- o That the large influx of federal funds into Puerto Rico under state-like treatment would have a disruptive impact on the economy¹

The dramatic growth of the FSP in Puerto Rico has provided one of the most vivid examples of the demands that Puerto Rico's relative poverty can place on federal assistance programs if they are extended to the Island on the same terms that apply to the states. With only a limited availability of other social programs in Puerto Rico, the extent to which the Puerto Rico population depends on food assistance has by far exceeded that found in the poorest mainland states. For instance, in FY 1974, the year prior to FSP implementation in Puerto Rico, the value of total per capita food

¹U.S. Department of Commerce, Economic Study of Puerto Rico, Vol. I, p. 175.

assistance was \$30 per year in Puerto Rico and \$34 in Mississippi (in nominal dollars), where the FSP had been in place since 1966.¹ By FY 1981, the Food Stamp Program alone in Puerto Rico cost \$879 million and provided \$271 per capita per year--about three times the \$92 per capita then going to Mississippi (in nominal dollars). In 1981, approximately 56 percent of the population of Puerto Rico (1.8 million people) were participating in the program and accounted for 8 percent of total federal FSP expenditures.

Concern about the size of the FSP in Puerto Rico led Congress to replace the program in 1981 with an annual \$825-million block grant for food assistance to the needy.² The level of funding provided to Puerto Rico through the block grant represented approximately 75 percent of the projected FY 1982 FSP expenditures in Puerto Rico, and it reduced per capita benefits from \$275 under the FSP in FY 1982 to \$239 under NAP in FY 1983 (in nominal dollars). Since the FSP eligibility standards and benefits are indexed for inflation, while funding for NAP is capped at the level established in 1981, the difference between the level of funding received by Puerto Rico under the block grant and what would have been received under a continued FSP increases each year.

¹The primary food assistance programs in Puerto Rico, other than the FSP and NAP, have been the commodity distribution program, National School Lunch and School Breakfast programs, and, more recently, WIC. Funding for these programs in Puerto Rico in FY 1982 (in nominal dollars) was as follows: commodity distribution, \$14 million; National School Lunch and School Breakfast, \$96 million; and WIC, \$19 million.

²Omnibus Reconciliation Act of 1981 (PL 97-35).

2. Socioeconomic and Demographic Trends

The rapid growth of participation in food assistance programs in Puerto Rico reflects both the limited availability of other social programs and trends in the Island's economy and its population. Despite dramatic improvements in income levels and health status since World War II, Puerto Rico remains poor in comparison with the United States, with population growth outstripping employment opportunities. This section summarizes trends in economic development and income, and presents data on the general level and composition of poverty in Puerto Rico. These economic trends indicate the likelihood that the levels of poverty and economic dependence in Puerto Rico will persist and perhaps even worsen.

Economic Development and Income. Before World War II, Puerto Rico had an agrarian economy which was dominated by the sugar industry and, to a lesser extent, by the tobacco and coffee industries. Seventy percent of the population lived in small rural communities. The unemployment rate was approximately 11 percent, and per capita disposable personal income was only \$698 per year. Average life expectancy at birth was also low--only 46 years. In this same period for the United States as a whole, per capita disposable income was \$4,053 per year, and life expectancy was 63 years.

Starting in 1948, the government of Puerto Rico undertook an aggressive industrialization program, known as Operation Bootstrap. A comprehensive set of incentives were implemented to attract external manufacturing investment, primarily from the U.S. mainland--incentives which accompanied the Congressional exemption of Puerto Rico from U.S. personal and corporate income taxes, and from U.S. minimum wage laws until 1981. Between 1948 and the early 1960s, Puerto Rico underwent a substan-

tial structural change from a primarily rural agrarian economy to an urbanized, industrial export economy. In the period from 1948 to 1965, the gross national product (GNP)¹ grew by 187 percent, with the sector of the most rapid growth, manufacturing, increasing by over 400 percent. Life expectancy at birth rose by a remarkable 24 years, and per capita disposable income, although still low compared with the U.S. mainland, increased to \$2,305 per year.

However, the rapid economic growth from 1948 to 1965 did not create enough new jobs to keep pace with population growth, at least in part because of the capital-intensive nature of development efforts. Although GNP grew by 187 percent, the number of jobs grew only by 8 percent over this period, while the population increased by approximately 21 percent, to 2,583,000, in 1965. Unemployment between 1948 and 1965 never fell below 12 percent. Unemployment worsened as economic growth slowed in the 1970s and early 1980s in the face of continuing population growth. Consequently, unemployment in Puerto Rico has remained over 15 percent since 1975 and has been over 20 percent since 1982. As shown in Figure II.1, the unemployment rate in Puerto Rico has consistently exceeded U.S. rates by wide margins, and these differences have grown since the recession that began in 1973.

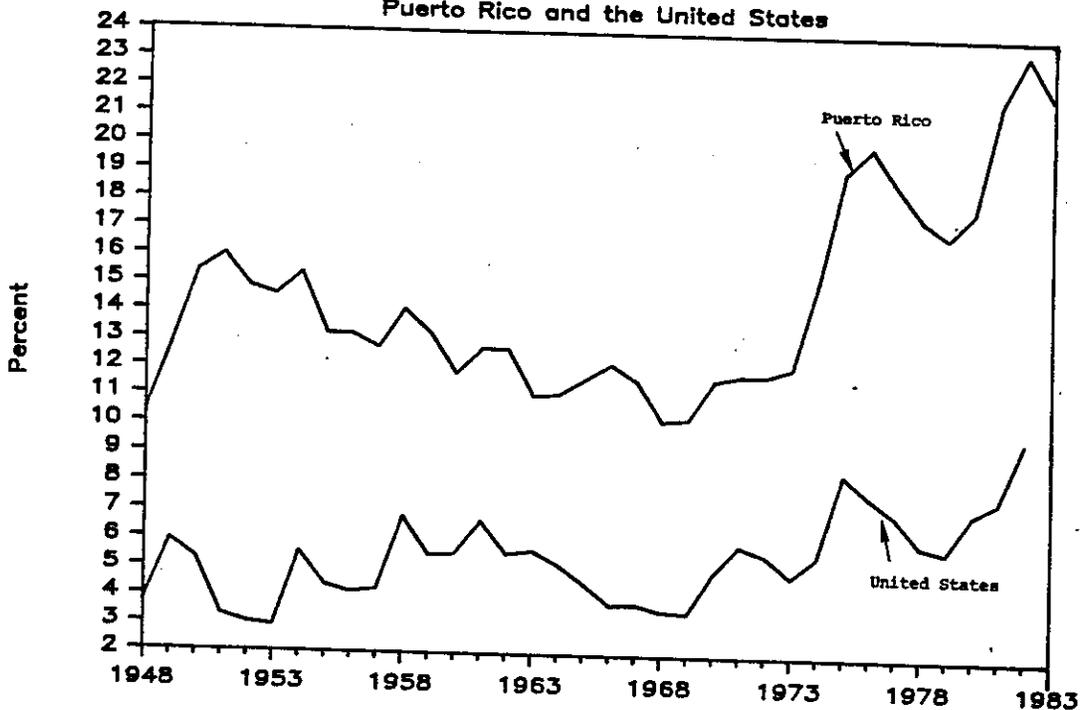
Even the high rates of reported unemployment understate the full extent of Puerto Rico's employment problem, particularly because they have been accompanied by steady declines in the labor-force participation rate of males. As shown in Figure II.2, participation rates for both males and females in Puerto Rico have historically been lower than in the United

¹We use the term gross national product to refer to the total product of the Commonwealth.

FIGURE II.1

Unemployment Rate

Puerto Rico and the United States

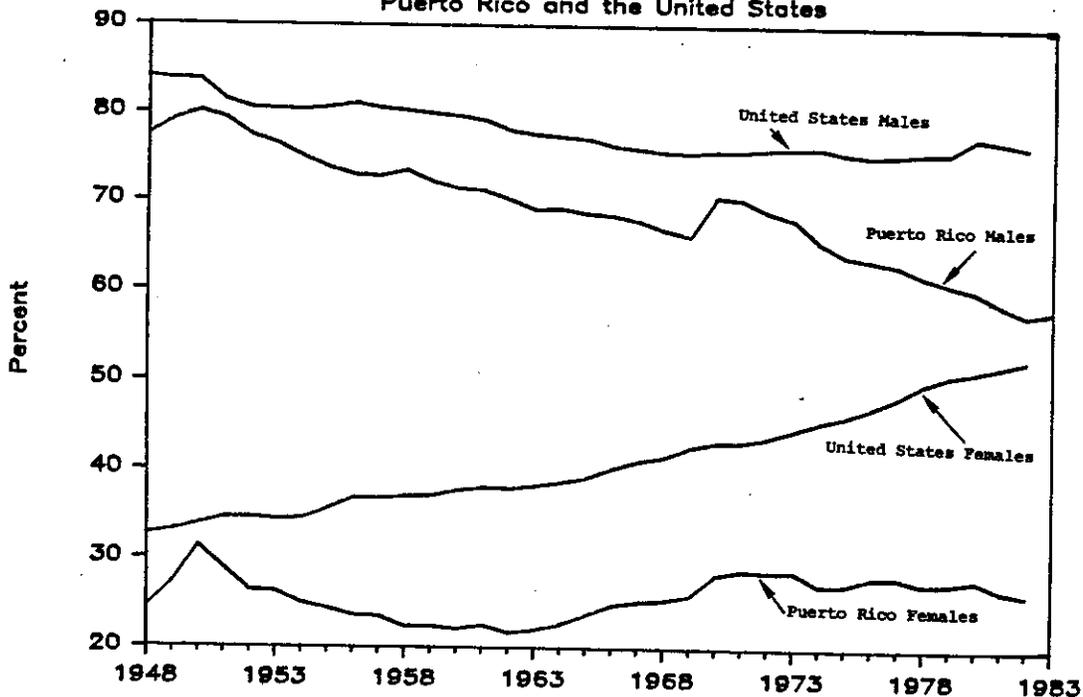


Source: Junta de Planificacion, Ingreso y Producto and U.S. Department of Commerce, Statistical Abstract of the United States.

FIGURE II.2

Labor Force Participation Rate

Puerto Rico and the United States



Source: Junta de Planificacion, Ingreso y Producto and U.S. Department of Commerce, Statistical Abstract of the United States.

States. Rates for males have steadily declined since the early 1950s, while rates for females have held roughly constant in Puerto Rico but have climbed in the United States. The declining labor-force participation rate for males in Puerto Rico appears to reflect the long-term decline of employment in traditional male occupations, such as agriculture and construction, and suggests that workers have become discouraged in the face of long-term high unemployment.

Unemployment has remained high despite a large net out-migration from Puerto Rico to the U.S. mainland. Based on estimates of net passenger movements, there was a net outflow of 182,796 people in the decade prior to 1973.¹ This net out-migration from Puerto Rico was reversed briefly from 1973 to 1977, most likely because of the worldwide recession. In 1983, the level of net out-migration was 44,433 people. If migration to the U.S. mainland were not an option, the unemployment problem in Puerto Rico might be even more severe.

Despite early successes in economic development, growth does not promise to offer a near-term solution to the unemployment and poverty problems in Puerto Rico. The industrialization of Puerto Rico, with its emphasis on capital investment in manufacturing and industry, did not create enough new jobs to offset the decline in agricultural employment and to absorb the growing labor force. Economic growth has slowed since the early 1970s and has fallen behind growth rates for the United States.

¹The net-passenger-movement data, although not necessarily representing accurate measures of net out-migration, provide a indication of the degree of population movements to the U.S. mainland. Since residents of Puerto Rico have U.S. citizenship and can therefore easily enter the U.S. mainland, it is expected that the out-migration was almost exclusively to the United States.

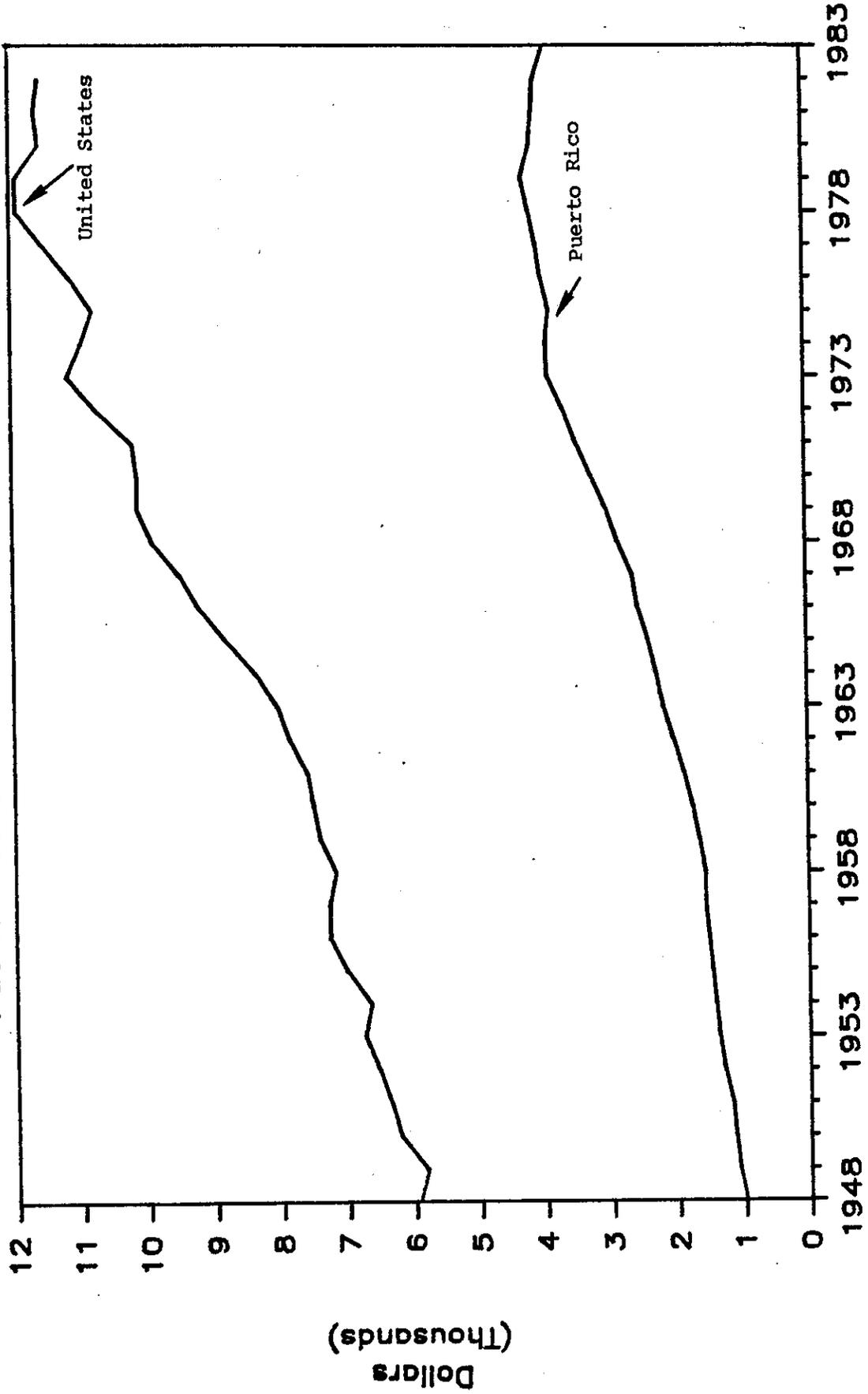
Since the recession of 1973, economic growth in Puerto Rico has failed to achieve its previous high levels and has been closely tied to economic cycles in the United States (data not shown). Given the heavy reliance of the Puerto Rico economy on external investment and external markets, the 1981 loss of the labor-cost advantages provided by exemption from U.S. minimum wage laws, and the recent foreign trade concessions granted by the United States to Puerto Rico's competitors for U.S. trade (e.g., the 1983 Caribbean Basin Initiative), Puerto Rico may find it difficult to achieve the previous high levels of economic growth in the near future.

Prevalence of Poverty. The continued imbalance between population growth and economic growth, and the resultant high levels of unemployment, are considered to be the underlying causes of poverty in Puerto Rico. By U.S. standards, incomes in Puerto Rico are low, particularly for large segments of the population. Consequently, any effort made through assistance programs to raise food expenditures and nutritional levels using the same income norms as in the United States can be expected to meet a large positive response from the population of Puerto Rico.

Income levels in Puerto Rico have always been much lower than in the United States, and, despite substantial economic development, they continue to remain far behind. The 1950 U.S. Census reported that 89 percent of the Puerto Rico population over age 14 received incomes of less than \$1,000 that year (in nominal dollars), as compared with 55 percent of the U.S. population. As shown in Figure II.3, per capita personal income was far below U.S. levels in 1948, and in 1983, although rising to over \$3,000, was only about one-third of the per capita personal income level in the United States.

FIGURE II.3

Per Capita Personal Income Puerto Rico and the United States (1983=100)



Source: Junta de Planificacion, Ingreso y Producto and U.S. Department of Commerce, Statistical Abstract of the United States.

Applying the U.S. poverty level index developed in 1961 to the U.S. and Puerto Rico populations provides similarly graphic contrasts between the two economies.¹ According to the 1980 U.S. Census, 62 percent of the Puerto Rico population had incomes below the U.S. poverty level, far more than in Mississippi (one of the poorest states) and over five times that of the United States, as shown in Figure II.4. Mean family income for all families in Puerto Rico (the smaller cross-hatching of Figure II.5) in 1979 was only slightly above the poverty level, and was a little more than one-third of mean family income in the United States as a whole. Mean family income for those families which were below the poverty level (the larger cross-hatching of Figure II.5) was also lower in Puerto Rico than in the United States. Appendix Table A.1 provides further information on the extent of poverty in Puerto Rico as measured by the U.S. Bureau of the Census, with comparison data for Mississippi and the United States.

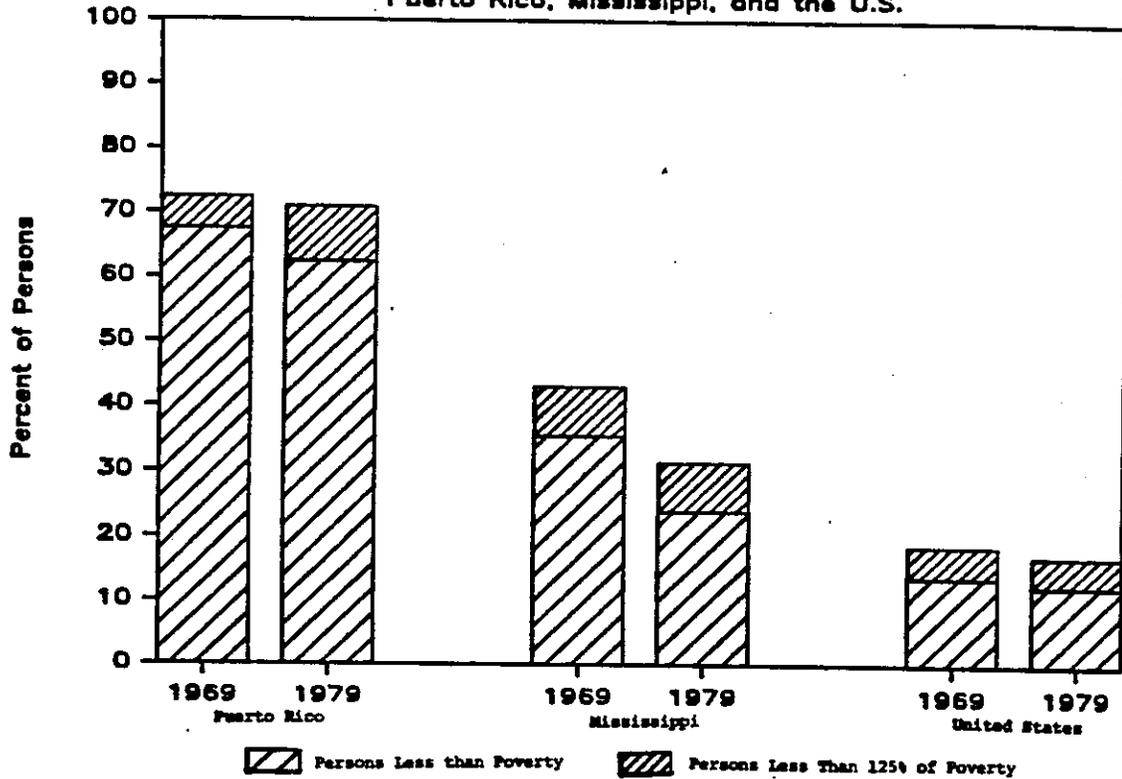
In addition to considering the extent of poverty in Puerto Rico, it is important to note the composition of the population in poverty. A comparison of the characteristics of persons and households below the U.S. poverty level with the general population of Puerto Rico (Appendix Table A.1) shows that those in poverty disproportionately comprise the elderly, children under age 18, and single-parent female-headed families.

Population Trends. Large changes in the composition of the population and family structure of Puerto Rico have occurred since the 1950s. These changes may have an important influence on future economic problems, particularly on levels of income-transfer dependence. In

¹ The poverty index was developed for the U.S. mainland. There is not a separate poverty index for Puerto Rico.

FIGURE II.4

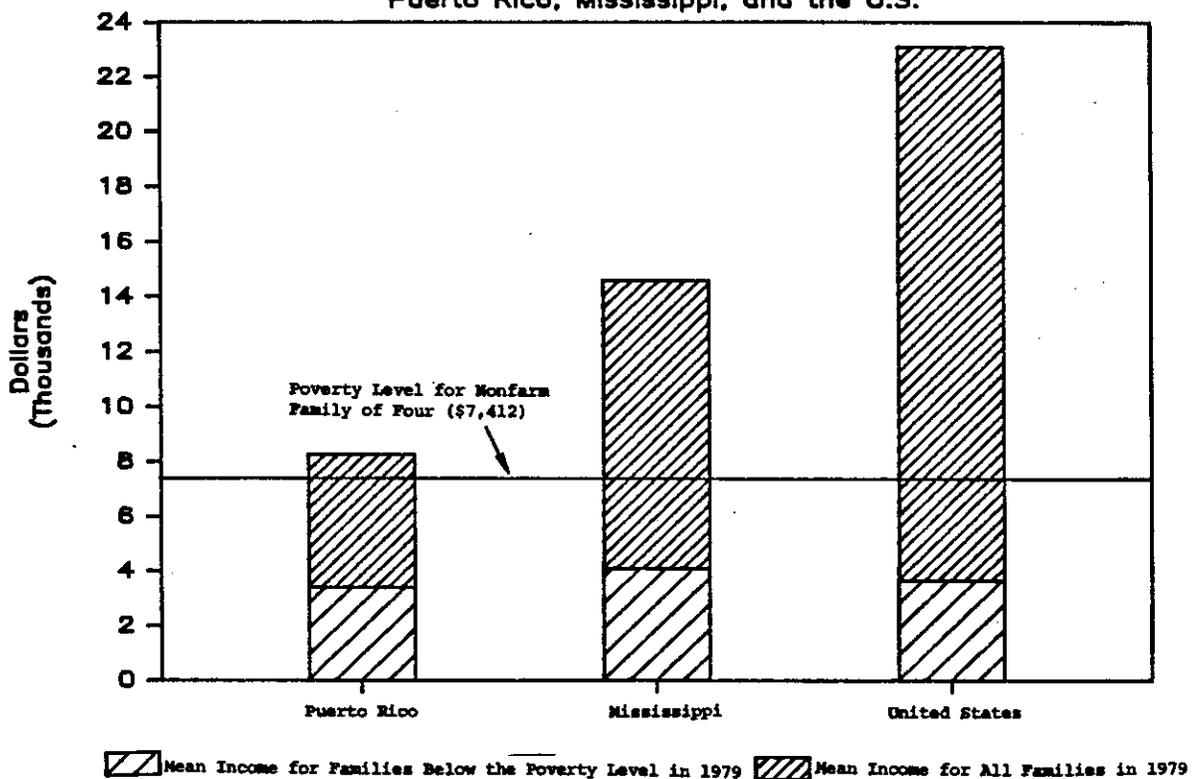
Poverty and Near Poverty Populations Puerto Rico, Mississippi, and the U.S.



Source: U. S. Department of Commerce, General Social and Economic Characteristics.

FIGURE II.5

Mean Family Income and Poverty Puerto Rico, Mississippi, and the U.S.



Source: U.S. Department of Commerce, General Social and Economic Characteristics.

general, it appears that continued population growth, combined with increases in the number of working-age adults seeking employment, the number of female-headed households, and the number of elderly, are further aggravating the prevalence of poverty in Puerto Rico.

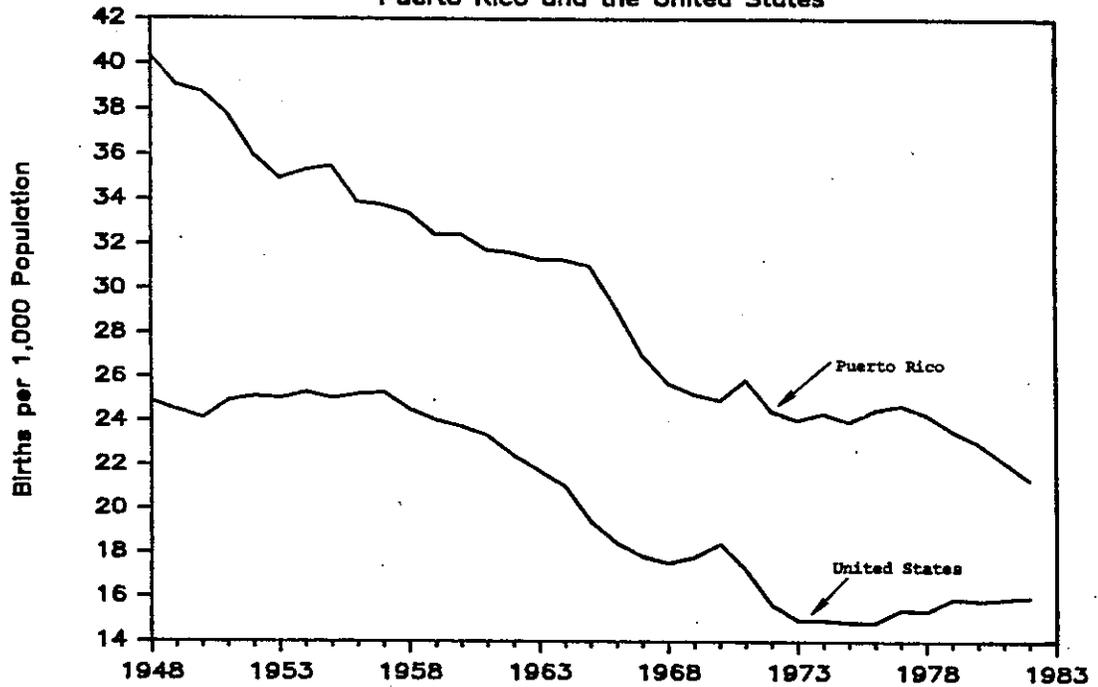
Population growth in Puerto Rico has exceeded growth rates in the United States since the late 1950s, despite the fact that the net out-migration to the United States has relieved some of the pressures of population growth and the scarcity of employment. Even allowing for the estimated 158,869 net departures from Puerto Rico over the period from 1960 to 1983, actual population growth rates have averaged 1.5 percent per year since the late 1950s. If it were not for net out-migration, population growth rates would have been even higher. The growth in population has been due to two important factors: (1) a high, although declining, birth rate, and (2) a sharp reduction in death rates, particularly infant mortality rates.

Birth rates have been consistently higher in Puerto Rico than in the United States, while death rates have been considerably lower since the late 1950s, as shown in Figures II.6 and II.7. The higher crude birth rate (Figure II.6) is due to the high fertility rate among women in Puerto Rico. Although the proportion of the female population of primary child-bearing age was approximately equal in Puerto Rico and the United States in 1980, there were 98.5 births for every 1,000 women between the ages of 15 and 44 in Puerto Rico, as compared with 67.7 births in the United States. The lower crude death rate in Puerto Rico than in the United States (Figure II.7) is primarily the result of the relatively young age structure of the population. For example, in 1980, 42 percent of the population of Puerto

FIGURE II.6

Birth Rate

Puerto Rico and the United States

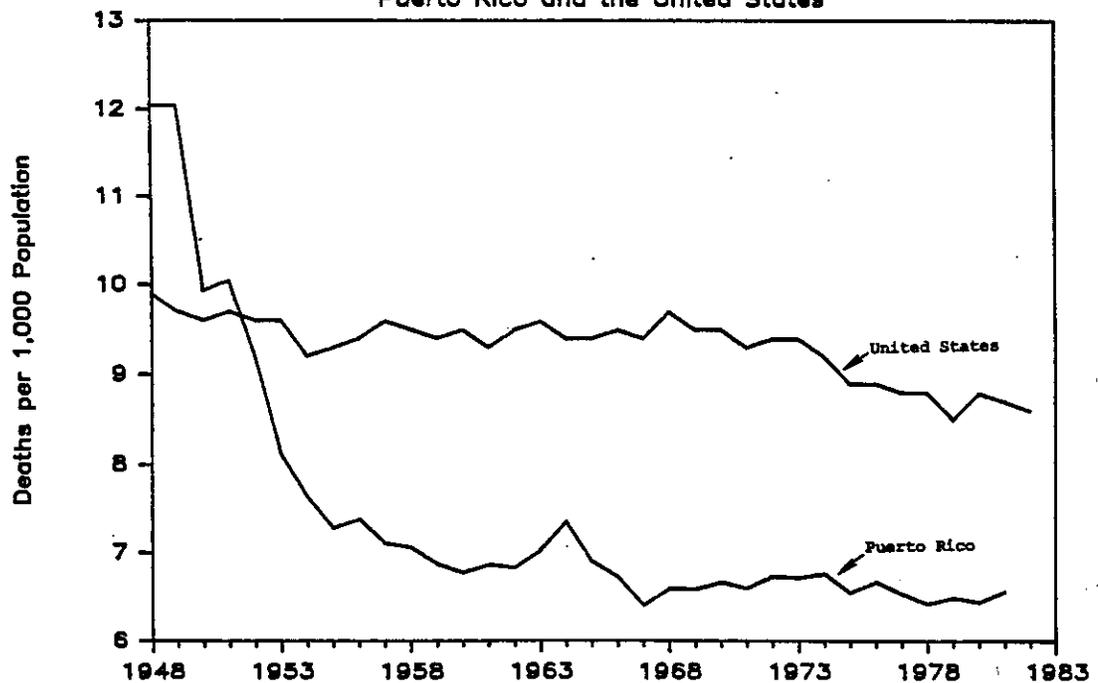


Source: Departamento de Salud, Informe Anual Estadísticas Vitales and U.S. Department of Commerce, Statistical Abstract of the United States.

FIGURE II.7

Death Rate

Puerto Rico and the United States



Source: Departamento de Salud, Informe Anual Estadísticas Vitales and U.S. Department of Commerce, Statistical Abstract of the United States.

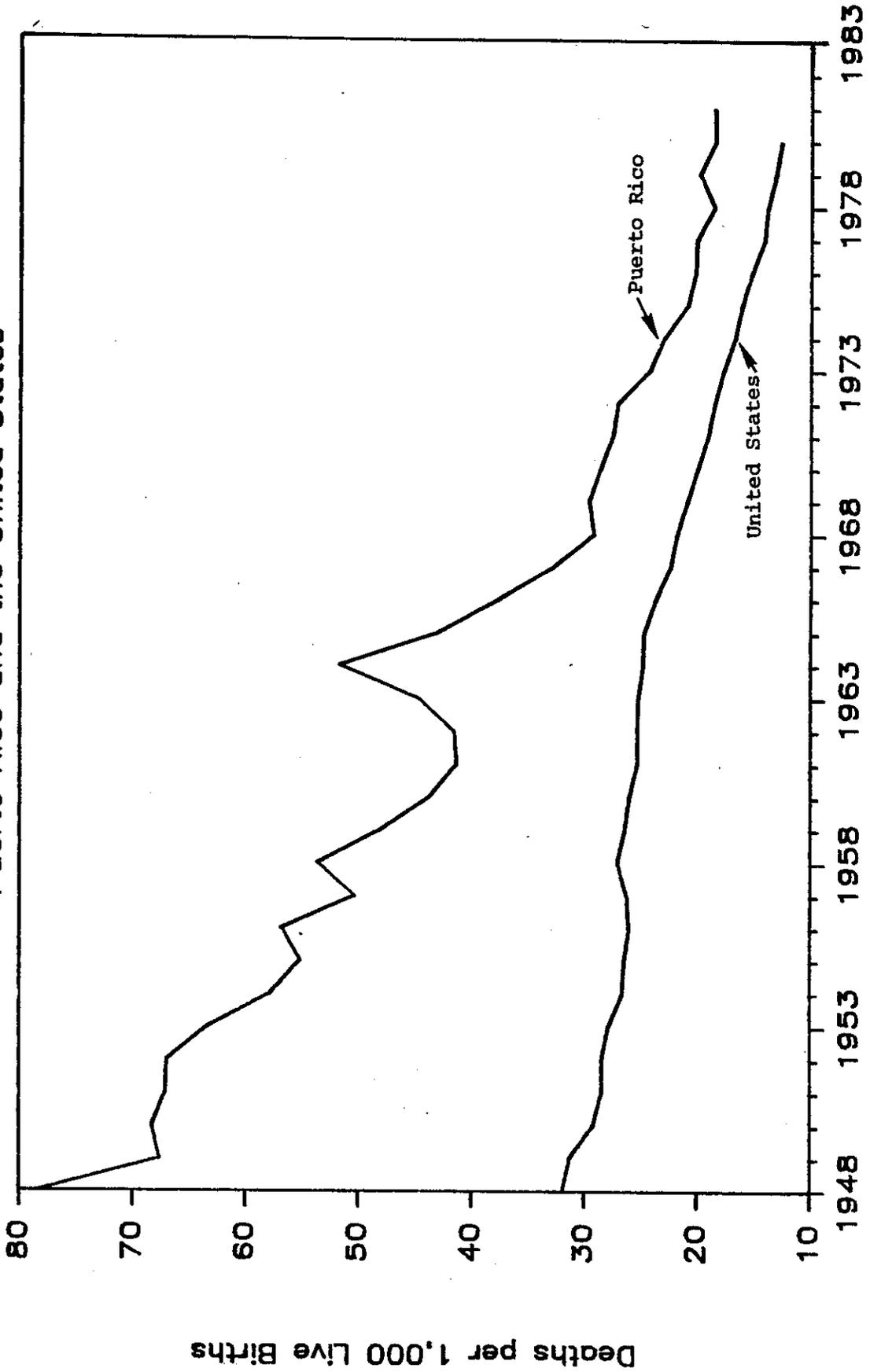
Rico was under the age of 20, compared with 32 percent of the U.S. population. Given the relatively high fertility rate of the Puerto Rico population and its relative youth, it seems unlikely that the growth of the population will slow substantially in the near future. Although out-migration may reduce the imbalance between population growth and sluggish economic growth, population growth is likely to continue.

However, one ingredient of Puerto Rico's population growth, its declining death rate, tells an important story of success. Death rates are low in Puerto Rico not only because its population is youthful, but also because of major improvements in health conditions. The implementation of an Island-wide health care system in the 1950s contributed to rapid shifts in indicators of population health status throughout the 1950s and 1960s. As shown in Figure II.8, infant mortality rates have dropped from about 70 deaths per 1,000 live births in 1950 to about 19 in 1980, which is approaching the rate for the United States as a whole. Life expectancy at birth has also increased dramatically in Puerto Rico, rising from much lower levels in the 1950s to a level comparable to that in both the United States and other developed countries: 73 years in Puerto Rico, compared with 74 in the United States in 1980. While much of the dramatic improvement in the health status of the population was achieved prior to the 1970s, the situation has continued to gradually improve over the 1970s and early 1980s.

The decline in infant mortality, improved living conditions, better health care, and longer life expectancy are reflected in a clear shift in the major causes of death in Puerto Rico. In the 1940s and 1950s, the leading causes of death were the diseases that are characteristic of less

FIGURE II.8

Infant Mortality Puerto Rico and the United States



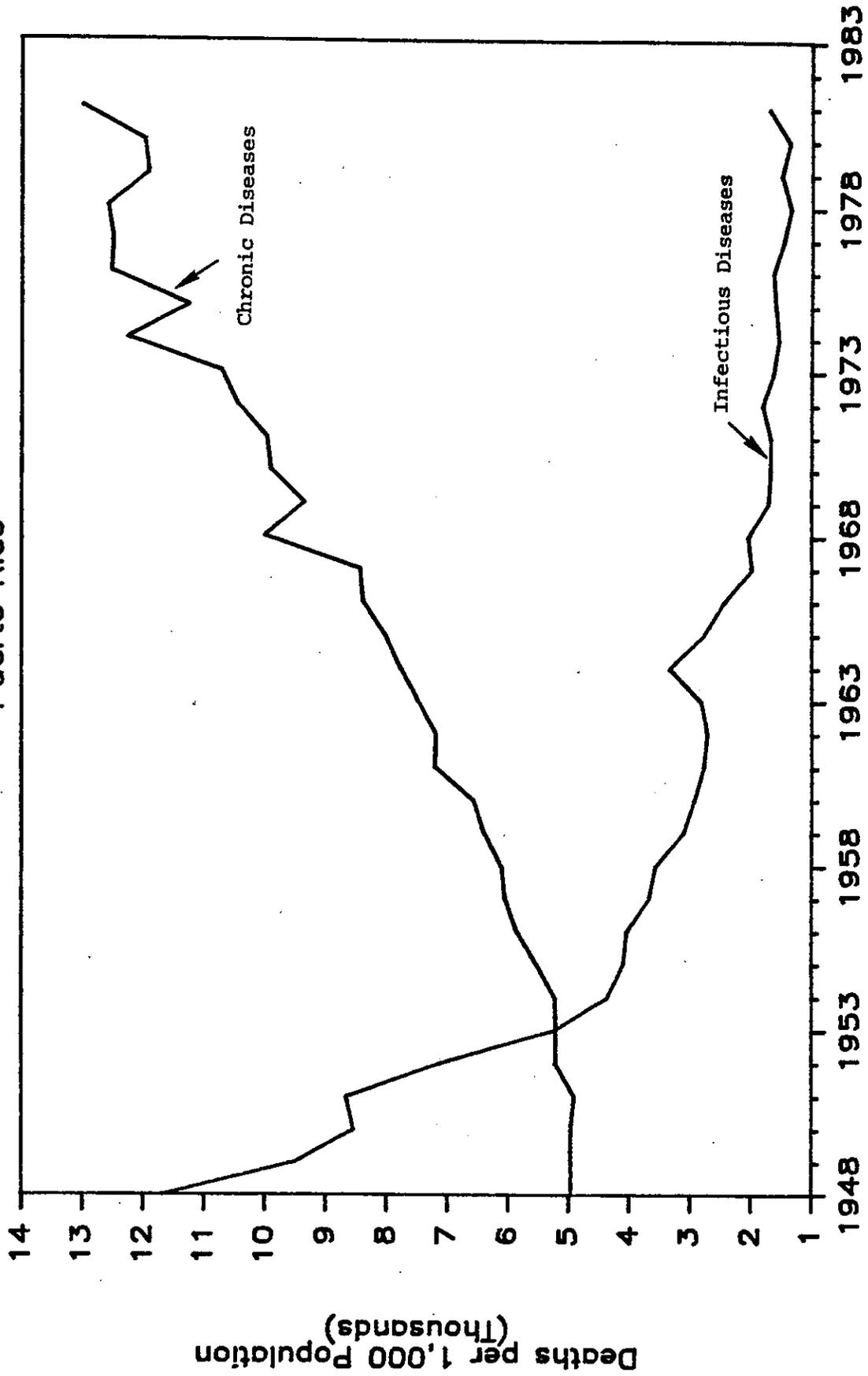
Source: Departamento de Salud, Informe Anual Estadísticas Vitales and U.S. Department of Commerce, Statistical Abstract of the United States.

developed countries--diarrhea and enteritis, tuberculosis, influenza and pneumonia, and other infectious diseases. By the later 1950s and the 1960s, the majority of deaths were due to chronic diseases, as is typical of industrialized countries--diseases of the heart, cancer, cerebrovascular diseases, arteriosclerosis, and diabetes mellitus. The increasing prevalence of chronic diseases in developed areas is due to the elimination of infectious diseases and the resultant aging of the population. Figure II.9 illustrates the declining rate of deaths due to selected infectious diseases and the rising incidence of deaths due to selected chronic diseases, after sharp declines in deaths from all causes in the late 1940s and early 1950s.¹ In 1950, the leading cause of death, diarrhea/enteritis, accounted for 14 percent of all deaths, while heart disease accounted for 11 percent. By 1981, diarrhea/enteritis accounted for less than one percent of all deaths, and heart disease, the leading cause of death in 1981, accounted for over 26 percent.

In addition to improved health conditions, declining death rates, and shifts in the causes of death, Puerto Rico shares another social phenomenon with the United States--increasing rates of divorce, births to unwed mothers, and single-parent households. The percentage of births to unwed mothers has been increasing since 1974, after 25 years of decline. In 1982, 23 percent of all births were classified as illegitimate, as

¹Deaths due to infectious diseases include tuberculosis, meningitis, nephritis, pneumonia, influenza, diarrhea, and enteritis. Deaths due to chronic diseases include cancer, diseases of the liver, cerebrovascular disease, heart disease, arteriosclerosis, and diabetes mellitus. These selected causes of death are based on available historical data on general causes of death reported by the Puerto Rico Department of Health.

FIGURE II.9
Deaths Due to Selected Causes
Puerto Rico



Note: Deaths due to infectious diseases include tuberculosis, meningitis, nephritis, pneumonia, influenza, diarrhea, and enteritis. Deaths due to chronic diseases include cancer, diseases of the liver, cerebrovascular disease, heart disease, arteriosclerosis, and diabetes mellitus. These selected causes of death are based on available historical data on general causes of death.

Source: Departamento de Salud. Informe Anual de Estadistical Vitales.

compared with 18 percent in 1974. The divorce rate is also increasing, although the rate has slowed considerably since 1972 and is now below that of the United States. Increases in the number of divorces are expected to lead to more female-headed households and, consequently, to a greater proportion of families in poverty.

Despite many positive trends in Puerto Rico, particularly in areas pertaining to life expectancy and health, the long-term imbalance between the growth of jobs and the growth of the population is likely to continue in the near future. In fact, the positive changes in public health areas (e.g., lower death rates and longer life expectancy) will contribute to the unemployment problem in the near-term by acting to maintain a high level of population growth. The severe unemployment in Puerto Rico and the resulting low levels of income relative to the United States are expected to remain an area of concern for the foreseeable future.

3. Trends in Food Consumption

Although Puerto Rico remains poor by U.S. standards, economic development, increases in income levels, and the expansion of food assistance and other assistance programs have had important effects on patterns of consumption expenditures, particularly food expenditures. Per capita personal consumption expenditures in Puerto Rico have increased rapidly since 1948, with food expenditures increasing more slowly than expenditures on nonfood products. The finding that food expenditures increase more slowly as income rises and thus that a smaller share of income is spent on food is consistent with virtually all economic analyses of food expenditures and income. Figure II.10 shows per capita consumption expenditures on food and nonfood products as proportions of per capita

disposable personal income. The steady decline in food expenditures as a share of disposable income and the increase in the share of income spent on nonfood products is shown clearly in this figure.¹

The impact of the introduction of the FSP on food consumption can also be seen clearly in Figure II.10. Following the introduction of the FSP in FY 1975, a strong upward shift occurred in the share of income allocated to food expenditures (the dollar amount of income allocated to food expenditures shifted upward as well). Although after the FSP was introduced the share of income spent on food continued to decline as income increased from FY 1975 to FY 1978, the FSP had shifted the trend to a higher level. In FY 1979, per capita personal income began to decline in real terms (see Figure II.3) and, as a result, expenditures on food and nonfood products declined both in dollar amounts and, as shown in Figure II.10, as proportions of per capita disposable income.²

The figure presented above illustrates the changes in food consumption expenditures which have occurred over time, but provides only limited insight into the causes of those changes. In order to examine more completely the impact of the introduction of the FSP, the elimination of the purchase requirement (EPR), and economic and social conditions on food consumption expenditures, a multivariate time-series analysis is in the

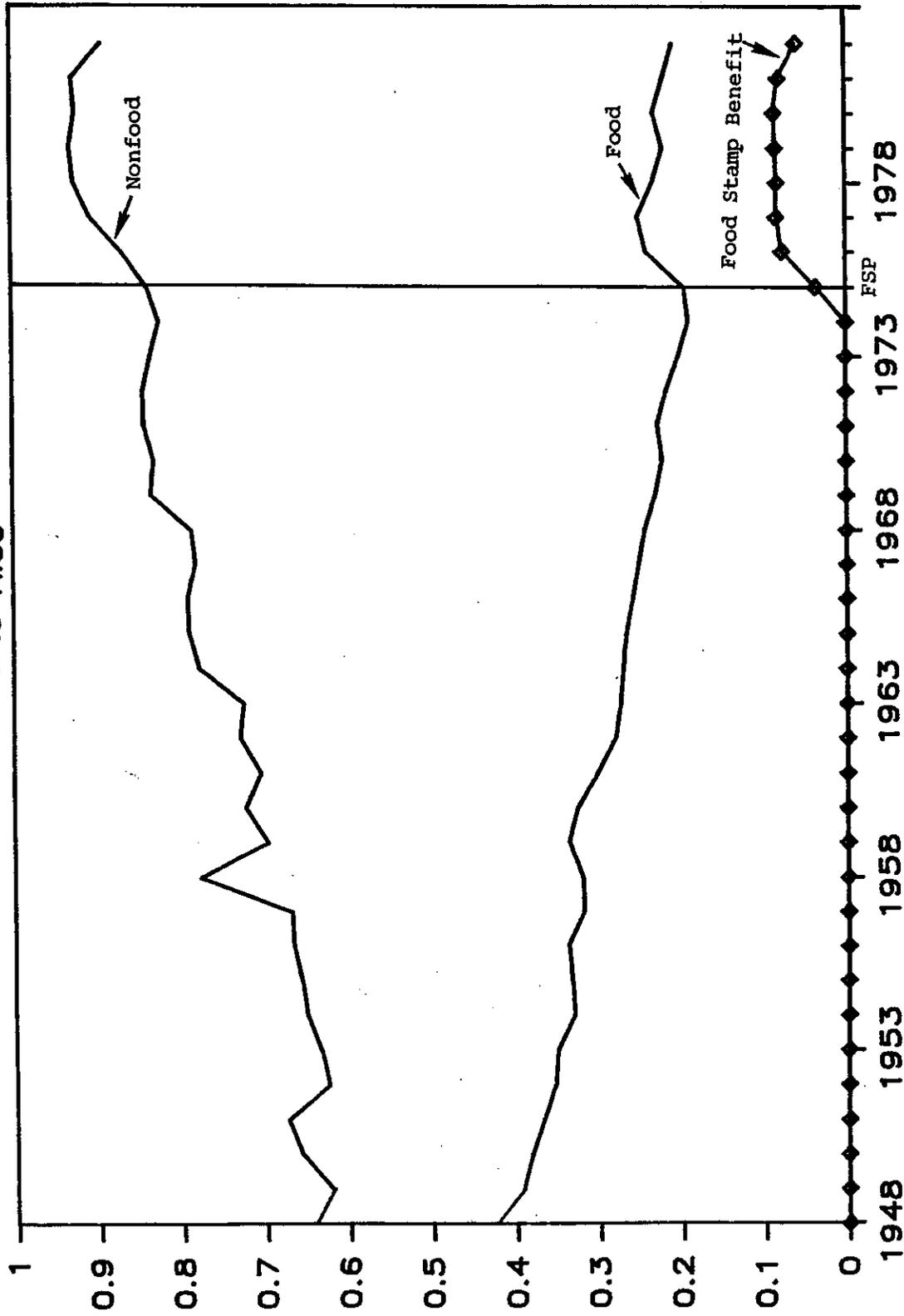
¹The proportions of per capita disposable personal income spent on food and nonfood products is greater than one for much of the period 1948-1982 because of a long-term dissavings by the population of Puerto Rico.

²The proportion of income allocated to both food and nonfood products declined since the level of dissavings was falling over this period.

FIGURE II.10

Per Capita Personal Consumption Expenditure on Food and Nonfood Products and Per Capita Food Stamp Benefits as Proportions of Per Capita Disposable Personal Income

Puerto Rico



Source: Junta de Planificacion, Ingreso y Producto.

process of being conducted. The results of this analysis will be presented in the Final Report.

B. NAP PROGRAM CHANGES

The creation of the Puerto Rico Nutrition Assistance Program in 1982 changed three important aspects of existing Food Stamp Program standards and operations: (1) rules concerning financial eligibility standards and benefit calculation, (2) procedures for determining eligibility, and (3) procedures for issuing benefits. The impact of these changes on food expenditures, nutrient availability, program participation, program administrative costs, and program operations errors form the focus of this evaluation. This section of Chapter II presents details on these program changes. The expected impacts, analytical methods, and empirical results of the NAP changes described above are discussed in Chapters III and IV.

1. Financial Eligibility Standards and Benefit Calculation Methods

Many of the specific changes made to the Food Stamp Program in the conversion to NAP reflect the necessity of reducing the size of the program and of keeping total expenditures within the \$825 million provided annually in the 1981 block grant. This goal clearly motivated the changes made in financial eligibility standards and the methods for calculating program benefits. Two types of changes were made. First, a number of changes in the eligibility standards that deal with income and assets limits and income deductions were made, most of which made the standards more restrictive. Second, standard tables and methods for calculating the amount of benefits based on countable income were revised to limit total benefit expenditures.

Financial Eligibility Standards. NAP changed seven rules concerning financial eligibility and income deductions:

1. Assets limits for nonelderly households were reduced from \$1,500 to \$1,000 (but remained at \$3,000 for elderly households).
2. Under NAP, households are allowed to exclude one vehicle from consideration as an asset, regardless of its use, plus one additional vehicle, if used to produce income. Under the FSP, any number of vehicles could be excluded if used for employment or to transport a disabled person, and, regardless of use, other vehicles were counted as assets only to the extent that their individual values exceeded \$4,500.
3. The limit on gross income for all household types was reduced from \$916 to \$667 per month for a household of four (and proportionally for other size households).
4. The limit on net income after allowable deductions for households with an elderly or a disabled member was reduced from \$705 to \$513 per month for a household size of four (and proportionally for other size households).
5. The standard deduction from income allowed for each household was reduced from \$50 to \$40.
6. The earnings deduction allowed for each employed household member was increased from the 18 percent under the Food Stamp Program to 20 percent.
7. Medical deductions for elderly and disabled member households, which were previously allowed to the full extent of expenses beyond \$35 per month per household, are allowed under NAP with no required initial out-of-pocket payment by the household, but only up to a newly imposed maximum of \$100 per month.

Methods for Calculating Benefits. The shift from the FSP to NAP also included five modifications to the methods used to determine benefit amounts:

1. The standard Puerto Rico tables of maximum benefits for households of various sizes with no income, in effect in June 1982, were revised downward by approximately 10 percent, subject, however, to the pro rata adjustment allowed in the following provision.¹
2. Individual household benefits as computed under the revised tables are adjusted up or down each month based on the extent to which certified aggregate Island-wide benefits as computed exceed or fall short of aggregate funds budgeted for benefits. The ratio of budgeted funds to aggregate benefits is multiplied by each household's computed benefit to arrive at the final benefit amount to be disbursed.
3. All individuals residing together are considered to be a single household under NAP, whereas the FSP allowed the designation of separate units in the same household if they purchased, prepared, or consumed food separately. This change reduces benefits to such groups by applying the economies of scale that are assumed in benefit tables based on household size.
4. Initial benefits to newly certified households are payable under NAP for the first month following the date of application, whereas they had been payable on a prorated basis beginning with the date of application under the FSP.
5. No benefits of less than \$10 per month are paid under NAP; if a benefit of less than \$10 is computed, no benefit is issued. Under the FSP, the minimum benefit for one- and two-person households was \$10.

2. Procedures for Certifying Eligibility

The definition of the Nutrition Assistance Program includes five significant departures from the procedures that were formerly used in the

¹Since Thrifty Food Plans under the Food Stamp Program are adjusted for increases in food prices, and since no such adjustment is required in NAP, actual differences between NAP maximum benefits and the maximum benefits that would have been provided under the FSP now exceed 10 percent.

eligibility certification process under the Food Stamp Program. These changes have affected the following: home visits to verify information provided by households, procedures for acquiring authorization to obtain third-party verification, the consequences of households' failing to cooperate fully with the certification process, emergency service requirements, work registration requirements, and the range of items subject to verification.

Home Visits. Home visits, which under the FSP had not been instituted as part of the certification or recertification process, were introduced with NAP. Initially, the goal of NAP was to conduct a home visit for each new application, except in regions where a high caseload volume required limiting visits to households with specified characteristics. In May 1983, a uniform Island-wide procedure was adopted whereby home visits were required for all new applications, a 3 percent sample of recertifications, and several types of special situations deemed to warrant home visits. Clients were told at the time of their application that a home visit would be made, but were not notified in advance of the exact time of the visit.

Blanket Verification Release. Within ten days after applying for assistance, applicants for NAP are required to sign an authorization form which grants the Puerto Rico Department of Social Services permission to contact any potential source of information for collateral verification of information provided in the application. This authorization allows the NAP program much broader latitude in using collateral information than was allowed under the FSP.

Denial for Unsatisfactory Cooperation. NAP places a more rigorous burden on applicants for cooperating with certification procedures. Applicants who miss a single appointment for an interview are denied application and must initiate a new one. The FSP regulations required evidence of active refusal to cooperate with the certification process before benefits were denied.

Emergency Service. NAP replaced the expedited service rules established by the Food Stamp Program with "emergency service" procedures designed to limit abuse and to restrict the amount of benefits issued under special circumstances. Under these new rules, applicants may receive special processing attention if they can demonstrate that they have no income in the month of application or are victims of a disaster; however, they must still provide, before approval, the same verifications required under regular NAP application procedures. Under the expedited service rules of the FSP, approval of initial benefits had been allowed with postponement of verification of all items except identity. Moreover, NAP allows 30 days for approval in emergency situations and 60 days for approval under normal circumstances, as compared with 3 working days for expedited service and 30 days for normal applications under the former FSP. In addition, benefits under the NAP emergency service are for one-half of a full month's benefits.

Work Registration Requirements. The FSP requirement that nonexempt household members register for work with the employment service was dropped under NAP. However, nonexempt individuals are to be referred to local job banks operated jointly by the Puerto Rico Department of Social Services (DSS) and Department of Labor.

Verification Procedures. Several procedures were adopted in NAP that modified the previously existing approaches for obtaining and recording verification information. Under NAP, all individuals in a household must provide Social Security numbers, whereas the FSP had required that only adults and children under the age of 18 with countable income provide numbers.¹ This provision was designed to enhance the process of detecting individuals who are included in more than one household. NAP also requires that eligibility workers record in the case file the type and identity of the document used to verify an individual's name and residence. The FSP required that these items be verified but did not require that their documentation be identified. Moreover, alien status must now be verified before an individual is certified as eligible, whereas, previously under the FSP, an initial two months of benefits could be issued pending documentation of legal alien status.²

3. Benefit Issuance Procedures

The most dramatic administrative change in the switch from the FSP to NAP was the procedural shift from issuing Food Stamp benefits in the form of coupons to issuing NAP benefits in the form of checks whose use is not restricted to food items. Under the FSP, the Puerto Rico Department of Social Services mailed out authorizations to participate cards (ATPs) to eligible households, who exchanged them for coupons in local issuance

¹FSP regulations which became final in November 1982 also require Social Security numbers for all household members.

²FSP rules were changed in April 1982 to withhold benefits from aliens until their legal status had been verified. It appears that DSS incorporated this change into NAP.

offices. Under NAP issuance procedures, the benefit amount due to each household is mailed out as a check. This change was designed to reduce the costs of handling ATPs and coupons, and to reduce illegal trafficking in coupons.

III. THE IMPACT OF NAP ON PROGRAM PARTICIPATION, ADMINISTRATIVE COSTS, AND PROGRAM INTEGRITY

The central concern of this study is the effect of the Nutrition Assistance Program (NAP) cash issuance on food expenditures and the availability of nutrients. However, other non-cash-issuance changes introduced by the program are also important, as evidenced by the discussion in the earlier Congressional debate over NAP.¹ These changes include more restrictive eligibility standards, tightened certification procedures, and adjustments in the calculation of benefits, all of which were adopted to bring program costs into line with the \$825-million block grant.² When combined with concurrent economic changes in Puerto Rico, they have had a significant impact on the types of households which are eligible for assistance under NAP, the decisions of households to apply for assistance and actually to participate in the program, and the amount of household benefits. Taken together, all these changes (the conversion to cash issuance, the adjustments in program rules and processes, and the economic trends in Puerto Rico) have had an impact on the size and composition of the "target" population for food assistance, the costs of administering NAP, and fraud and error in eligibility and benefit determination. Thus, this chapter examines the overall effects of these changes on these three

¹See, for example, the House debate on H.R. 4252 contained in the Congressional Record, 98th Congress, 1st Session, Vol. 129, pages 9893 through 9898.

²This discussion also includes several minor changes that were made in order to maintain NAP program rules and structure similar to the current Food Stamp Program (FSP) rules. Thus, they represent changes relative to the FSP rules in force prior to NAP, but they parallel concurrent changes in the FSP.

program areas, not only to describe their importance in their own right, but also to provide information for the analysis of food expenditures and nutrient availability.

This chapter examines available administrative data on Puerto Rico's food assistance program before and after the introduction of NAP. Section A summarizes hypotheses about the effects of program changes on various measures of program efficiency. These hypotheses are examined in detail in succeeding sections of the chapter. Section B presents data on shifts in the number and characteristics of participating households and the benefits they receive. Section C summarizes available data on recent trends in administrative costs, and estimates the effects of cash issuance, caseload reduction, and the introduction of home visits on those costs. Section D reports available data on measures of fraud and error in the eligibility and benefit determination that have corresponded to the shift from the Food Stamp Program (FSP) to NAP, and Section E presents information drawn from focus group discussions in Puerto Rico about unauthorized coupon use under the FSP and recipients' perceptions of the switch to check issuance.

With the exception of Section E, the effects of the key program changes that are discussed in this chapter are analyzed on the basis of program data--aggregate benefits disbursed, caseload volumes and summary statistics, administrative costs, and administrative errors. In contrast, the analysis of food expenditures and nutrient availability (discussed in Chapter IV) will rely on household survey data.

A. OVERVIEW OF HYPOTHESES

As described in Chapter II, the switch to NAP involved numerous changes in eligibility and benefit provisions, the certification process and, obviously, the form of benefit issuance. All NAP changes and their expected effects are listed in the first column of Table III.1. Changes that were expected to have a significant effect are indicated with an asterisk. The second column indicates the expected effects of the program changes on benefits and participation, while the third and fourth columns indicate the expected effects on administrative costs, and fraud and error in eligibility and benefit determination, respectively. Because of data limitations this study will focus on the major changes highlighted in the table and will interpret trends over time in terms of these major changes. It is important to emphasize throughout this chapter that the analysis is based on a comparison between NAP and the Food Stamp Program as it existed in Puerto Rico prior to June 1982.¹

B. EFFECTS ON BENEFITS AND PARTICIPATION

As was discussed in the previous chapter, the food assistance programs have played a major role in the Puerto Rico economy, in terms of both the size of the federal transfers relative to total personal income and the proportion of the population which participates. In this section, trends in program participation prior to and following the introduction of NAP are described and the reasons for caseload changes under NAP are analyzed. In

¹ Because FSP rules have undergone some changes, the FSP in Puerto Rico would be somewhat different today, had the block grant not been implemented, than it was in June 1982. However, it is not possible using administrative data to make a comparison of NAP to the FSP which would have existed in Puerto Rico after 1982.

TABLE III.1

POTENTIAL IMPACTS OF NAP

NAP Provisions/Features	Benefits and Participation ^a	Administrative Cost ^a	Fraud and Error ^a
1. <u>Financial Eligibility/Benefit Calculation</u>			
o Asset limit for nonelderly reduced from \$1,500 to \$1,000*	-		
o Gross income limit for non-elderly/disabled reduced* by 27%	-		
o Net income limit for elderly/disabled reduced by 27%*	-		
o Standard deduction reduced from \$50 to \$40*	-		
o Earnings deduction increased from 18% to 20%	+		
o Medical expenses for elderly/disabled capped at \$100 with no out-of-pocket payment	-(?)	-	-
o Maximum benefits reduced by 10%, with pro rata adjustment of computed benefits based on availability of funds*	-		
o Initial partial benefits for month of application eliminated	-	-	-
o Benefits of less than \$10 eliminated	-	-	
o Income of members under 18 counted	-	+	+
o Scholarships, educational loans/grants excluded from countable income	+	-	-
2. <u>Eligibility Certification Procedures</u>			
o Home visits*	-	+	-
o Blanket verification release	-		
o Denial for unsatisfactory cooperation	-	-	
o Elimination of work registration requirement	+(?)	-	-
o Replacement of expedited service with "emergency service"	-	-	-(?)
o Requirement of SSNs for all household members	-	+	-
o Verification of legal alien status prior to approval	-		-
o Required recording of identity/residence documentation			-
3. <u>Benefit Issuance Procedures</u>			
o Replacement of ATPs and coupons with benefits in check form*	+	-	

^aThe expected effects are indicated by a plus sign for an increase and a minus sign for a decrease.

addition, changes in the targeting of the program, as reflected in the characteristics of participating households and in the distribution of benefits, are considered.

1. Trends in Program Participation

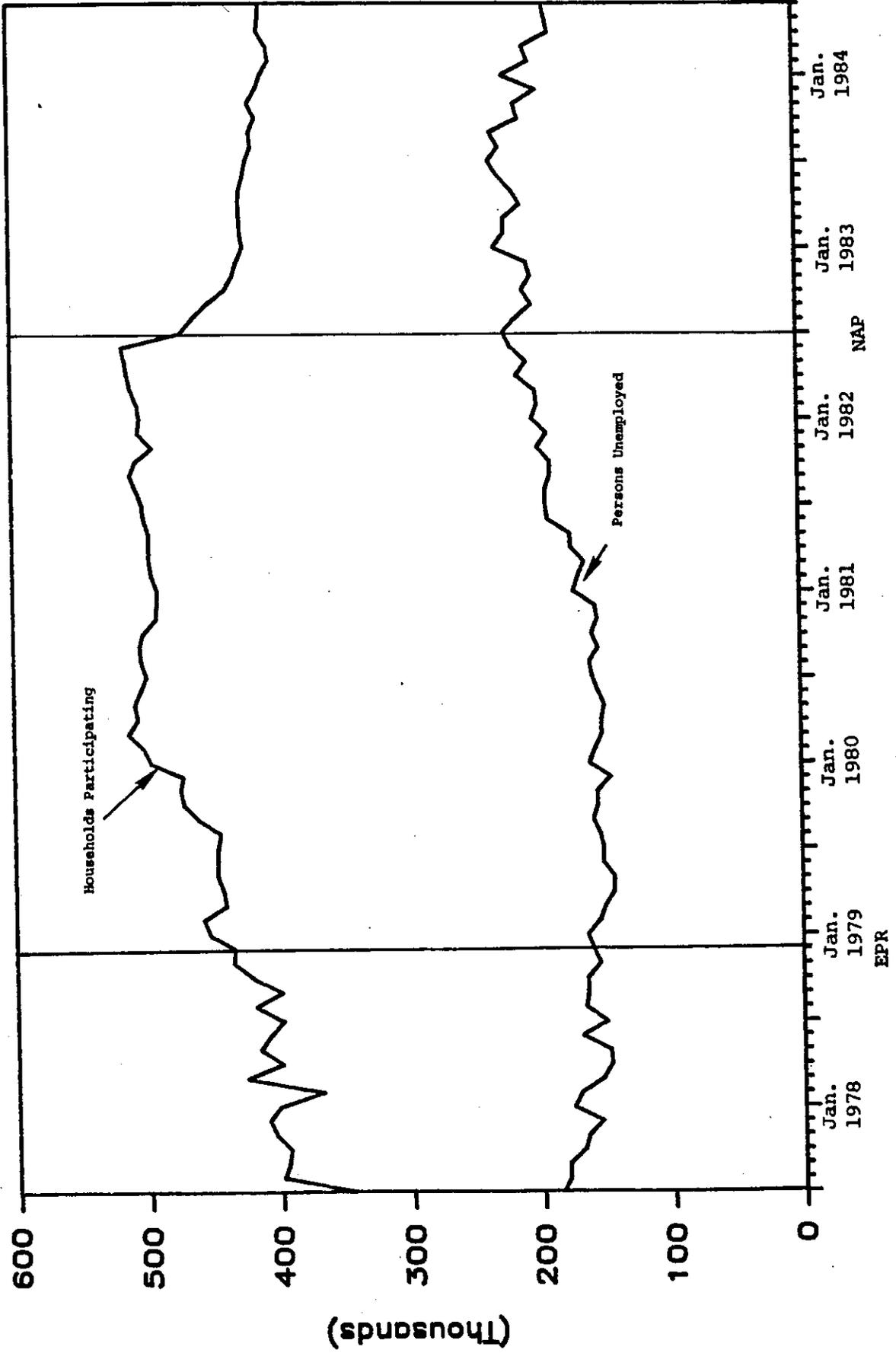
Participation in the FSP in Puerto Rico increased rapidly following its implementation in July 1974. By the end of the first full year of program operations, 1.5 million people, or 50 percent of the population of Puerto Rico, were program participants. Prior to the elimination of the purchase requirement (EPR) in December 1978, program participation had been increasing fairly steadily.¹ Following the EPR, program participation initially increased very rapidly (by 9 percent in the first four months) but then leveled off as the tightened eligibility requirements of the Food Stamp Act of 1977 were implemented in the first half of 1979 (see Figure III.1). Although some growth occurred in late 1979 and early 1980, program participation remained fairly stable at approximately 500,000 households for the two years prior to NAP. During the first six months after NAP was implemented in July 1982, the caseload declined by 90,000 households or 17 percent; thereafter, the caseload continued its decline more slowly.² By September 1984, the number of participating households had dropped to 405,000, almost 22 percent below the pre-NAP level of June 1982.

¹The elimination of the purchase requirement (EPR) occurred in December 1978 in Puerto Rico and some states. All states had implemented the EPR by January 1979.

²Part of the decline in caseload shown here is due to the change in the definition of a household under the NAP. Average household size increased from 3.57 persons in June 1982 to 3.60 in July 1982 and 3.71 in December of 1982.

FIGURE III.1

Program Participation and Unemployment Puerto Rico



Source: Puerto Rico Department of Social Services and Junta de Planificacion, Ingreso y Producto.

As shown in Figure III.1, NAP was implemented during a period of generally high unemployment. Thus, it appears that the caseload decline of 95,000 or 18 percent in the first year of NAP can confidently be attributed to the program changes. However, the moderate decline in the caseload from mid-1983 through mid-1984 occurred as unemployment was declining. Since the program introduced some changes (e.g. home visits and stricter verification) which could have affected caseload size even after the initial implementation, it is not possible to distinguish the separate effects of NAP and the economy on program participation with any confidence during this later period.

2. New Households and Discontinuances

The decline in the food assistance program caseload following the implementation of NAP can be disaggregated into changes in the movement of participants into the program (approved applications) and in the movement out of the program (discontinuances). Both movements can be affected by several factors working simultaneously: the propensity of households to seek assistance or to continue to participate, the eligibility standards for new applicants and households which are seeking recertification, and the effectiveness and accuracy with which the standards are applied. The propensity of low-income households to seek assistance may be affected by a variety of NAP features--eligibility standards, certification procedures, and the form of benefit issuance--as well as by factors outside the program, such as the availability of employment. The introduction of NAP affected movements into and out of the program directly by changing the eligibility standards and the manner in which they are enforced, and indirectly by changing households' decisions to seek assistance.

During the first six months of NAP, the entry of new households into the food assistance program dropped from 97,350 to 70,312, a decline of 28 percent (see Table III.2). This sharp decline was associated with a reduction in applications of approximately 20 percent and almost a twofold increase in the rate at which applications were denied.

The introduction of NAP precipitated a considerable increase in the number of households leaving the program. The discontinuance of active cases occurred through two processes: immediate redetermination of eligibility following the introduction of NAP, and ongoing reviews of eligibility. Immediately following the implementation of NAP, a computerized redetermination of eligibility was undertaken based upon the new gross and net income limits, the elimination of benefits under \$10, and other less significant program changes. While precise data on the volume of these computerized terminations are not readily available, the computer-initiated discontinuances are estimated to be between 29,900 and 38,900 households. The upper limit of the range is based on a finding in the 1983 evaluation of NAP (USDA, FNS, 1983) that 85 percent of the June to July 1982 caseload decline was due to the computerized conversion. The lower limit of the range is based on the proportion of the FSP households in June 1982 with gross incomes greater than 86 percent of the poverty line, which is the level at which the new gross income limit of NAP was set. These are the households that would have been discontinued based on the gross income test; additional discontinuances occurred as a result of other program changes.

Discontinuances initiated by eligibility staff also caused households to leave the program. Worker-initiated discontinuances are

TABLE III.2

COMPONENTS OF DECLINE IN THE
CASELOAD UNDER THE NAP

Time Period	Applications			Percent of Applications Accepted	Total Worker-Initiated		Discout Innuances Due to Computerized Redeterminat ion of Eligibility
	Average Monthly Caseload	Total Number	Total Number of Applications Accepted		Total Number	Discout Innuances	
						Percent of Caseload	
January-June 1982	509,058	108,771	97,350	89.5	40,380	1.3 ^a	-----
July-December 1982	445,269	87,182	70,312	80.7	61,962	2.3	29,900 - 38,900
January-June 1983	422,921	75,758	57,089	77.7	37,206	1.5	0
July-December 1983	414,349	74,006	56,459	76.3	38,472	1.6	0
January-June 1984	405,076	65,964	50,726	77.7	37,980	1.6	0

SOURCE: Puerto Rico Department of Social Services.

^a This figure is based on data for March 1982.

based on reviews of case circumstances during recertification or following reports of changes by the households. These reviews are part of an ongoing process and would have led to discontinuances due to all the eligibility standards of NAP. During the first six months of NAP, worker-initiated actions occurred at a rate of approximately 2.3 households per 100 cases per month, as compared with a rate of 1.3 prior to NAP.¹ Consequently, approximately 26,500 more households were discontinued under NAP in those first six months than would have been at the discontinuance rate in effect under the former FSP.

During the next 18 months of NAP, the caseload declined at a much less dramatic pace. The number of households moving onto the caseload remained below that of the former FSP, due to fewer applications and a continued high application denial rate. The continued decline in applications was probably due in part to the improving economic conditions in Puerto Rico in 1983 and 1984. The flow of households out of the program slowed considerably during this period, probably because households which did not meet the lower eligibility standards had already left the caseload. However, worker-initiated discontinuances, although lower than in the first six months after NAP, remained slightly above the March 1982 level of the former FSP.

¹The discontinuance rate of 1.3 prior to NAP is based on data for March 1982. No information is available for the full six months prior to NAP or earlier periods of the FSP. While there is some risk that a single month's rate may be atypical, the discontinuance rate under NAP for the twelve months January to December 1983 was fairly stable, ranging from 1.4 to 1.7, with a mean of 1.5.

3. Caseload Composition Effects

The changes in eligibility rules under NAP led to changes in the composition, or average characteristics, of the caseload, as well as in its size. These changes and the composition of the caseload are important since household characteristics are likely to affect the household's food expenditures and nutrient availability. In order to provide guidance for the analysis of Chapter IV, this section describes the caseload composition changes which occurred following the implementation of NAP.

The most obvious conclusion from a comparison of participating households for the month prior to the implementation of NAP and for the months corresponding to the end of the first and second years after its implementation, is that NAP has served a group with lower income on average than did the FSP (Table III.3). Under the FSP in June 1982, 9.7 percent of the participating households had gross incomes above 75 percent of the poverty level; as a result of the reduced income standards of NAP, only 1.1 percent of the participating households fell into that category two years later. At the low end of the income scale, 46 percent of the FSP households in June 1982 had gross incomes below 25 percent of the poverty level; this share increased to 54 percent over the next two years. The slight decline in the proportion of households with zero income is most likely due to increased verification requirements and the introduction of home visits.

The shift in the income levels of participating households was caused primarily by the sharp reduction in the number of households with earnings which remained eligible under the income standards instituted by NAP. As shown in Table III.4, the number of participating households with earnings declined by 47 percent in the first year of the program. This

TABLE 111.3

DISTRIBUTION OF PARTICIPATING HOUSEHOLDS BY POVERTY STATUS
FSP AND NAP

Gross Income as a Percentage of Poverty Level	FSP			NAP			NAP		
	June 1982			June 1983			June 1984		
	Number (Thousands)	Percent	Average Monthly Benefit	Number (Thousands)	Percent	Average Monthly Benefit	Number (Thousands)	Percent	Average Monthly Benefit
Zero Income	86.6	16.8	\$171.36	59.7	14.2	\$180.53	61.0	15.0	\$187.91
1 - 2%	151.5	29.4	\$196.09	157.6	37.5	\$195.03	159.8	39.3	\$200.65
26 - 50%	141.2	27.4	\$132.41	128.2	30.5	\$124.62	115.9	28.5	\$128.18
51 - 75%	85.6	16.6	\$101.45	68.5	16.3	\$91.05	65.9	16.2	\$89.59
76 - 100%	42.8	8.3	\$63.53	6.7	1.6	\$59.56	4.5	1.1	\$55.54
101 - 125%	7.2	1.4	\$28.69	0.0	0.0	\$0.00	0.0 ^a	0.0	\$20.00
Over 125%	0.0	0.0	\$0.00	0.0	0.0	\$0.00	0.0	0.0	\$0.00
All Households	515.4	100.0	\$146.69	420.2	100.0	\$153.16	406.6	100.0	\$157.02
All Individuals	1,841.2	100.0	\$41.06	1,569.4	100.0	\$41.01	1,511.3	100.0	\$42.24

SOURCE: Counts and average monthly benefits for "All Households" and "All Individuals" are based on information pertaining to all cases, which was furnished by the Puerto Rico Department of Social Services. The percentage distribution of households by poverty level and the average monthly benefits per household by poverty level were estimated using random samples of 10,000 cases from the Puerto Rico Department of Social Services case master file at each time period; numbers in each poverty level were estimated by multiplying these percentages by the total number of cases. Columns may not add to totals because of rounding.

^aThere were 40 people with gross income between 101 and 125 percent of the poverty level.

TABLE III.4
COMPARISON OF HOUSEHOLD CHARACTERISTICS
FSP AND NAP

Subgroup	FSP		NAP		NAP	
	June 1982		June 1983		June 1984	
	Number (Thousands)	Percent	Number (Thousands)	Percent	Number (Thousands)	Percent
Earners	184.4	35.9	105.1	25.0	97.1	23.9
Social Security Recipients	134.1	26.6	104.2	24.8	104.0	25.6
Households with Disabled Members	26.2	5.6	32.4	7.7	36.2	8.9
Single-Person Households	83.5	16.5	59.2	14.1	57.7	14.4
Households with Member Over Age 60	100.8	19.6	103.4	24.6	102.4	25.2
One- and Two-Person Households with Member Over Age 60	62.8	12.2	60.5	14.4	58.1	14.3
Sex of Household Head						
Male	151.2	29.4	119.8	28.5	113.4	27.9
Female	268.5	52.2	228.2	54.3	226.9	55.8
Sex missing	93.6	18.2	71.0	16.9	65.9	16.2
All Households	514.4	100.0	420.2	100.0	406.6	100.0

SOURCE: Puerto Rico Department of Social Services.

NOTE: Categories are not mutually exclusive. Distributions were estimated using random samples of approximately 10,000 cases. Numbers of cases in each category were estimated by multiplying these percentages by total cases.

reduction accounted for 84 percent of the total reduction in the caseload achieved in that year. In contrast, the tightened net income standard for households with an elderly or disabled member does not appear to have curtailed participation by such households; their numbers increased by 9 percent under NAP. The other group that was affected significantly by NAP consisted of households which receive Social Security benefits, whose numbers declined from 134,000 to 104,000 (Table III.4).

With the exclusion of households with relatively high incomes from the program, it is not surprising that the remaining caseload receives higher average benefits under NAP than were received under the FSP (Table III.3). Average monthly benefits have risen from \$147 in June 1982 to \$153 in June 1983 to \$157 in June 1984.¹ However, for many households which have remained in the program, benefits have been reduced. NAP has reduced average monthly benefits for all income groups whose gross income exceeds 25 percent of the poverty level. This corresponds to 46 percent of the households participating in NAP in June 1984.

It should be noted that the comparison of average monthly benefits between June 1982 and June 1984 ignores the inflation which occurred during that two-year period, as well as any increases in benefits that would have been received under the FSP with its regularly indexed maximum benefits. A comparison of NAP benefits of recipients in 1984 with benefits this group would have received had the FSP remained in Puerto Rico, would show larger benefit reductions under NAP.

¹ Similarly, average monthly benefits per person have risen under NAP from \$41.06 in June 1982 to \$42.24 in June 1984 (Table III.3).

This analysis of the change in caseload composition shows that NAP has been targeted toward a lower income population than the former FSP. Because NAP beneficiaries have lower incomes, they are less likely to have earnings or to receive Social Security benefits than the households under the former FSP.

C. EFFECTS OF NAP ON ADMINISTRATIVE COSTS

An important issue in assessing the Nutrition Assistance Program is the effects of key program changes on administrative costs. In particular, the switch to a cash issuance system was motivated in part by the expectation that substantial administrative cost savings could be achieved. This section examines changes in administrative costs under NAP and attempts to isolate the effects of cash issuance.

NAP introduced several simultaneous changes, in addition to cash issuance, that were expected to have major impacts on administrative costs. Specifically, in the absence of any other changes, the large decline in caseloads during the first six months of NAP would have led to a reduction in administrative costs. On the other hand, the changes in certification procedures, especially the home visit requirement, would have increased the staff time and, hence, the administrative costs of certifying cases for eligibility. Thus, considerable care should be exercised in interpreting the observed changes in administrative costs following the implementation of NAP.

The section begins with an overview of trends in administrative costs and caseloads, and then presents detailed cost information that provides a basis for isolating the cost changes attributable to cash

issuance. The section concludes with a discussion of the cost impacts of the caseload decline and the increase in certification activities.

1. Recent Trends in Administrative Costs

Administrative data on costs and caseloads for the four years immediately preceding NAP and for the first two years of NAP operations show that both costs and caseloads rose until 1980 when annual costs reached \$56.8 million, as shown in Table III.5. The first column of Table III.5 shows costs in nominal dollars; the second column shows costs in constant 1983 dollars. During the year immediately preceding NAP, administrative costs declined to \$53.2 million, while caseloads continued to increase. With the implementation of NAP in July 1982, a sharp decline occurred in both aggregate costs and caseloads. During the first year of NAP operations, total annual administrative costs and average monthly caseloads declined by about 15 percent to \$45.8 million and 434,000, respectively. During the second year of NAP, total administrative costs remained approximately the same, while average monthly caseloads declined by an additional 5 percent, to about 413,000. While some of the decline in administrative costs under NAP is attributable to the caseload reduction, a large portion of the savings is attributable to cash issuance. Part of the potential reduction in administrative cost was offset by the allocation of additional staff to certification.

2. Estimated Savings Due to the Change to Cash Issuance

The estimate of the savings from the change to cash issuance is based on separate estimates of personnel and nonpersonnel costs. For the most part, savings are estimated relative to the costs under the former

TABLE III.5

RECENT TRENDS IN ADMINISTRATIVE COSTS
AND CASELOADS IN THE PUERTO RICO
FOOD ASSISTANCE PROGRAMS

Time Period	Annual Administrative Costs		Average Monthly Caseload (Thousands)
	(Millions of Nominal Dollars)	(Millions of Constant 1983 Dollars) ^a	
Food Stamp Program			
July 1978 - June 1979	51.4	57.6	439
July 1979 - June 1980	52.0	55.6	492
July 1980 - June 1981	56.8	58.1	493
July 1981 - June 1982	53.2	54.5	508
Nutrition Assistance Program			
July 1982 - June 1983	45.8	45.8	434
July 1983 - June 1984	45.3	44.9	413

SOURCE: Information from quarterly FNS-269 reports furnished by the Puerto Rico Department of Social Services.

^aEstimates in constant 1983 dollars were obtained by inflating the figures in the early years by the change in the GNP deflator for government consumption expenditures. The series is available only through 1983. The July 1983 - June 1984 estimate was obtained by assuming a 1 percent increase in the index relative to the July 1982 - June 1983 period. This is the actual increase in the index between July 1981 - June 1982 and July 1982 - June 1983.

FSP. The second full year of NAP operation is the reference point for measuring costs under NAP, since some important aspects of the new administrative system are likely to have required more than a year to implement fully.

Table III.6 presents data on all cost items for the last year of the FSP and the second year of NAP. Personnel costs account for approximately 70 percent of total administrative costs. These costs declined by \$3.7 million from their level under the FSP. All other direct costs, representing about 22 percent of pre-NAP costs, declined by \$5.0 million. The decrease in these two areas was offset in part by an increase in indirect costs of \$1.9 million.¹

Estimates of the cost reductions due only to cash issuance are developed on the basis of applicable elements of the "change" column in Table III.6. It should be noted that these estimates include only costs that were incurred directly by the Commonwealth of Puerto Rico. Savings to the federal government have been estimated to constitute an additional \$3-million per year. These savings to the federal government are generated by the elimination of coupon production and shipping (\$2 million) and by the elimination of the retail authorization and compliance monitoring function (\$1 million).²

¹Indirect costs are computed as a fixed percentage of total direct costs. They reflect costs incurred by the Commonwealth government to support the Puerto Rico Department of Social Services (DSS) which cannot be allocated directly to specific DSS functions. The indirect cost rate is set by agreement with the federal government. The fixed rate rose from 12 percent to over 17 percent between 1982 and 1984, for reasons apparently unrelated to NAP.

²See USDA, FNS, Evaluation of the Puerto Rico Nutrition Assistance Program, March 9, 1983, Table III.14.

TABLE III.6

CHANGES IN PUERTO RICO FOOD ASSISTANCE PROGRAMS ADMINISTRATIVE COST COMPONENTS
(Dollars)

	Final Year of Food Stamp		Second Year of Nutrition		Percent Change
	Program Operation		Assistance Program Operations		
	July 1981 to June 1982		July 1983 to June 1984		
	Expenditures		Expenditures		Change
Salaries and Benefits	37,248,518		33,527,067		-3,721,451
Consultant and Contract	790,015		531,512		-258,503
Transportation	371,701		50,241		321,460
Travel expenses	253,378		322,410		-69,032
Keypunch	162,936		158,861		4,075
Space Costs	4,724,685		3,115,458		-1,609,227
Bank space	303,551		0		303,551
Office space	4,419,134		3,115,458		-1,303,676
Program Documents^a	1,045,925		416,636		-629,289
Materials	190,518		8,986		181,532
Printing	855,407		407,650		447,757
Lease Purchase	981,616		409,651		-571,965
Data processing	923,734		380,384		543,350
Photocopy	35,188		19,218		15,970
Equipment	22,694		10,050		12,644
Other Costs	4,249,375		2,308,272		-1,941,103
Water	45,735		21,444		24,291
Postage	957,963		955,019		2,944
Light	677,466		273,224		404,242
Telephone	319,473		320,184		-711
Guard services	59,963		35,093		24,870
Repair of equipment	137,009		139,093		-2,084
Other equipment rental	4,803		1,096		3,707
Repair and maintenance vehicle	14,118		16,443		-2,325
Auto equip rent	117,857		2,823		115,034
Insurance	949,925		23,285		926,640
Puerto Rico police	801,161		32,450		768,711
Transport office	7,021		0		7,021
Car insurance	0		160,808		-160,808
Consultant	156,146		327,310		-171,164
Other expenses					
Indirect Costs	5,051,986		6,951,159		-1,899,173
Total	54,092,120^b		47,259,755^b		-6,832,365

SOURCE: Backup documentation to quarterly FNS-269 reports, furnished by the Puerto Rico Department of Social Services.

^a Annual average for the last two years of the FSP is used because of a large negative adjustment in the quarter from July - September 1981.^b Figure differs from the corresponding figures in Table III.5 because the figure in Table III.5 incorporates several adjustments to the totals. However, the adjustments were not reflected in individual line items.

Estimates of personnel cost savings are developed on the basis of data on issuance staff costs for the period prior to NAP, as well as information on the size of the issuance staff in 1981 and on the number of issuance staff members who were retained for the check issuance function under NAP. Total issuance staff costs in the year prior to NAP were \$.66 per issuance. Of the 501 staff members in 1981, 189 (37 percent) were retained under NAP to perform check issuance and reconciliation. Thus, staff costs were reduced by approximately 63 percent, for a savings of approximately \$.42 per issuance. For the caseload in the second year of NAP, this figure generates an estimated savings for issuance of \$2,080,000 in personnel costs.² However, this figure is based on salaries as of June 1982. Based on information provided by the the Puerto Rico Department of Social Services (DSS), average salaries during the period from July 1983 to June 1984 were approximately 6 percent higher than in June 1982. Therefore, the personnel cost savings have been inflated by 6 percent, to \$2,204,800.

The nonpersonnel items in Table III.7 and the basis for the reported cost estimates are explained below. The "upper-bound" estimates assume that the entire observed cost change in a given category from Table III.6 is due to the switch to cash issuance. The more conservative "best guess" estimates adjust these figures where appropriate, based on the judgment that certain cost changes are at least partially due to caseload reduction.

- o Transportation and Bulk Storage of Coupons. This service, previously performed for the DSS by Wells

²413,000 cases per month * 12 months * \$.42 per issuance = \$2,081,520. This figure was rounded to \$2,080,000.

June 1984 were approximately 6 percent higher than in June 1982. Therefore, the personnel cost savings have been inflated by 6 percent, to \$2,204,800.

The nonpersonnel items in Table III.7 and the basis for the reported cost estimates are explained below. The "upper-bound" estimates assume that the entire observed cost change in a given category from Table III.6 is due to the switch to cash issuance. The more conservative "best guess" estimates adjust these figures where appropriate, based on the judgment that certain cost changes are at least partially due to caseload reduction.

- o Transportation and Bulk Storage of Coupons. This service, previously performed for the DSS by Wells Fargo, has been eliminated under NAP. The entire observed reduction of \$321,000 is treated as a savings in both the upper-bound and more conservative estimates, since it is assumed that the 18 percent caseload reduction would not have had a significant effect on contractual costs for this service.
- o Bank Space for Local Coupon Storage. Because DSS was able to eliminate these costs entirely, the entire cost reduction of \$306,000 is treated as savings due to cash issuance. It is assumed that caseload reductions would not have reduced these costs.
- o Materials and Printing. These costs appear to have been incurred primarily for procuring printed ATP forms under FSP, and for procuring check forms under NAP. The raw observed reduction in costs is \$629,000, or a 60 percent reduction. Such a reduction does not appear to be realistic, since checks must still be printed. An examination of data for other years (not shown) indicated that printing and materials costs are erratic in both the two years prior to and the two years following the start-up of NAP. Thus, the conservative estimate incorporates two adjustments to the observed cost reduction. First, the difference between the two-year annual cost averages before and after NAP were computed. The annual averages are \$878,000 and \$613,000, implying a reduction of 30 percent. Second, the percentage reduction in the use of forms was assumed

TABLE III.7

ESTIMATED ANNUAL SAVINGS TO PUERTO RICO FROM
THE CHANGE TO CASH ISSUANCE
(Thousands of Dollars)

	Upper-Bound Estimate of Savings	"Best-Guess" Estimate of Savings
Personnel Costs		
Issuance-staff salaries and benefits	2,205	2,205
Nonpersonnel Costs		
Contractor transportation and bulk storage of coupons	321	321
Bank space (vaults for local coupon storage)	306	306
Printing and materials	629	107
Data processing	543	40
Office space	1,304	509
Insurance	927	927
Police security	769	769
Indirect costs	1,191	622
Total	8,195	5,806

NOTE: In general, savings estimates are based on a comparison between the last full year of FSP operations and the second full year of NAP operations for the corresponding line items in Table III.6. Adjustments to the observed changes are explained in the text.

to equal the 18 percent caseload reduction. The remaining 12 percent of the pre-NAP costs is reported as the \$107,000 savings due to cash issuance.

- o Data Processing. The observed decline of \$543,000 annually in data processing costs from a pre-NAP level of \$924,000 seems far greater than can be attributed to the change to cash issuance. Most computerized functions under the coupon system (e.g., determining allotments, generating ATPs, printing listings, performing reconciliations of ATPs and coupons, and performing reconciliations of authorized ATPs and actual ATPs) had counterparts under the cash issuance system of NAP. A few exceptions have been identified. First, fewer listings are produced. Second, one step in the reconciliation process is eliminated. The best-guess estimate of the savings in data processing due to cash issuance was obtained by assuming that those relatively small changes in data processing under NAP would have saved \$40,000.
- o Office Space. Requirements for office space under NAP have been lower than under the FSP, probably for two reasons. Caseload decline has probably contributed to a reduction in office space by reducing eligibility staff and issuance staff requirements. However, the switch to cash issuance has completely eliminated the necessity of housing an issuance process in the local offices. The conservative estimate assumes a reduction of 18 percent in office space costs corresponding to the caseload reduction from the last FSP year to the second NAP year. This decline accounts for \$795,000 of the total reduction in costs. The remaining \$509,000 savings is attributed to the change to cash issuance.
- o Insurance. Under the FSP, insurance coverage was necessary for coupon inventories in DSS control, and for staff who handled coupons in local offices. With the elimination of coupon issuance, insurance costs have been reduced almost to zero. The entire savings of \$927,000 between the last FSP year and the second NAP year is attributed to the change to cash issuance.
- o Police Security. With the elimination of the coupon issuance process and the associated security problems for local offices and their clients, special expenses for security have been

eliminated. Because this cost is probably relatively insensitive to caseload volumes, the entire \$769,000 in savings is included in both estimates.

- o Indirect costs. Indirect costs cover general support functions (such as personnel, payroll, etc.) provided by DSS which are not allocable directly to specific programmatic functions performed by the Department. The conservative estimate of \$622,000 was obtained by applying the indirect-cost-recovery rate which was in effect at the time the FSP ended (12 percent) to the estimated savings for personnel and nonpersonnel costs. The upper-bound estimate of 17 percent is based on the same procedure, but uses the higher (17 percent) indirect cost-recovery rate in effect during June 1984.

These estimates provide an upper bound on estimated administrative cost savings due to cash issuance of \$8.2 million per year, and a "best-guess" estimate of \$5.8 million per year.¹ The conservative "best-guess" estimate indicates a savings of nearly 11 percent relative to what would have been spent from July 1983 to June 1984 had the FSP coupon issuance system been retained. The upper-bound estimate is nearly 16 percent of total administrative costs. Thus, both estimates indicate that substantial cost savings have been realized from cash issuance.

3. Effects of the Reduction in the Caseload and Increased Certification Efforts

The "best-guess" estimates of administrative cost savings presented in the preceding section apply only to the change to cash issuance. That is, they are net of the effects of caseload decline and the increase in certification effort. Indeed, the estimated savings attributable to cash

¹Unlike the personnel costs which were adjusted for salary increases, no inflation adjustments were made for the nonpersonnel items because appropriate price indices were not available.

issuance account for a large portion, but less than the observed decline in total administrative costs. Unfortunately, the available data cannot support the disaggregation of the unexplained cost changes into amounts attributable to caseload decline and to increases in certification effort. Nevertheless, information on changes in the level of key staff-eligibility workers and their supervisors permits the development of some very approximate estimates that suggest the order of magnitude of the administrative cost changes attributable to these two factors.

The next subsection provides rough estimates of the administrative staff reductions that could have been achieved from the caseload reduction under NAP if the certification effort had remained at the same level as implied by the authorized staff level--291 cases per worker. The subsequent subsection shows that, in reality, the certification effort increased under NAP, preventing the full realization of the potential savings from the caseload reduction.

Staff Reductions Attributable to the Caseload Reduction. The limited data available on the staffing of certification activities require that strong assumptions be made in attempting to distinguish the effects of changes in certification procedures from those of the caseload decline. Table III.8 presents data on actual and authorized certification staffing levels in October 1982 and March 1984, and the active caseload volume for both those two months and for June 1982, the month prior to the implementation of NAP. No data are available on certification staffing levels in June 1982. However, actual staffing levels in June 1982 are assumed to be approximately the same as in October 1982--that is, it is assumed that, although caseload volume declined sharply between June and

TABLE III.8
 CHANGES IN ELIGIBILITY STAFF LEVELS
 IN LOCAL OFFICES OF THE PUERTO RICO FOOD ASSISTANCE PROGRAMS

	Food Stamp Program		Nutrition Assistance Program	
	June 1982	October 1982	October 1982	March 1984
Actual Number of Eligibility Staff and Supervisors	1,606 ^a (assumed)	1,606	1,606	1,507
Authorized Number of Eligibility Staff and Supervisors	NA	1,492	1,492	1,537
Active Cases per Actual Staff Member	320 (assumed)	270	270	272
Active Cases per Authorized Staff Member	NA	291	291	267
Number of Active Households	514,000	434,000	434,000	410,000

SOURCE: Puerto Rico Department of Social Services.

^aWe assume that actual levels of certification staff did not change between June 1982 and October 1982. This assumption is supported by the recollection of DSS staff. Furthermore, the assumed high caseloads per worker are consistent with the decline in total administrative costs and the increase in the average number of cases shown in Table III.5 for the year immediately preceding NAP.

NA = data are not available.

October, neither purposeful staff cuts nor significant attrition occurred during that period.¹ Thus, Table III.8 is interpreted as follows:

- o The ratio of 291 cases per authorized worker in October 1982 reflects the intent of DSS to provide more ample staff time for eligibility certification functions as defined prior to NAP, and possibly to allow the planned home visits to be implemented.
- o Actual caseload burdens per worker fell to 270 in October 1982. Furthermore, the expectation of the DSS that caseloads of 291 per worker could be handled did not prove to be true. Caseload burdens remained around 270, and planning targets, in the form of authorized positions, were revised by March 1984 to a level which allowed caseloads of 267 per worker.

If the DSS had been able to achieve and maintain the targeted caseload per worker of 291 households, the reduction in caseload volume for the period from June 1982 to March 1984 would have led to a reduction in staff from the assumed level of 1,606 in June 1982 to 1,409 positions (410,244 households divided by 291) in March 1984, a decline of 12.3 percent.

Staff Increases Attributable to Increased Certification Efforts.

The estimated reduction in staff that would have been generated had targeted caseloads per worker remained close to the former FSP level did not in fact occur. Rather than a reduction from 1,606 positions to 1,409, the actual number of staff dropped only from 1,606 to 1,507. Offsetting the effects of reduced caseload, it appears, was the demand placed on the DSS by the renewed and eventually successful efforts to institute a

¹This assumption is supported by the recollections of DSS staff. Furthermore, high caseloads per worker are consistent with the decline in administrative costs and increases in caseload shown in Table III.5 for the year immediately prior to NAP.

certification procedure which included systematic home visits for all applications, for 3 percent of recertifications, and for other special circumstances. The actual staff reduction of 99 fell short by 98 positions of what could have been anticipated based on the caseload reduction. Thus, it is estimated that an additional 100 positions were required to handle the home visits, which represents an increase of about 7 percent over what would have been required had home visits not been implemented.

In summary, the potential savings in certification staff costs from the caseload decline of about 12 percent were offset by an increase in staff costs of about 7 percent due to the initiation of home visits.

4. Summary of Administrative Cost Effects

The overall observed administrative cost reduction of about 15 percent was the result of three factors: caseload reduction, check issuance, and increased certification activities. Substantial savings amounting to about 11 percent of June 1982 administrative costs were attributed to cash issuance under the more conservative "best-guess" set of assumptions. It is not possible to estimate confidently the cost savings due to caseload reductions and increased costs due to greater certification effort. However, the caseload reduction was estimated to reduce the number of eligibility workers by roughly 12 percent. The increased certification effort counteracted some of the staff savings from the caseload reduction by increasing the number of eligibility workers by about 7 percent over what would have been required under the FSP practices.

D. PROGRAM INTEGRITY: ERRORS, CLAIMS, AND FRAUD

An important concern of the Puerto Rico Department of Social Services as it defined the Nutrition Assistance Program was to reduce the

levels of errors and fraud in administering the food assistance program. The specific program changes that were expected to reduce errors and fraud were described earlier. They included the introduction of home visits, expanded requirements for Social Security numbers, a new requirement that gives DSS prompt blanket permission for obtaining third-party verification information, the elimination of multiple assistance households under the same roof, and the elimination of benefit coupons and thus the opportunities they offered for coupon trafficking and coupon theft. Opportunities for fraud or error were also expected to be reduced by the elimination of the FSP expedited service rules. This section of the report examines available data to determine whether the changes introduced with NAP were associated with any observable effects on measures of program integrity. Four such measures have been examined: (1) quality control data on case errors, payment errors, and certification variances, (2) claims initiated against households for benefit overissuances, (3) the frequency of fraud hearings, and (4) information on FSP coupon reconciliation and NAP check issuance.

Overall, the data indicate that Puerto Rico was successful in keeping rates of error, fraud, and abuse at rates comparable to the U.S. average, despite the major administrative changes required in the conversion to NAP. Case error rates had been declining under the FSP and continued to decline under NAP in a pattern similar to that under the U.S. FSP. At the same time, the data provide no solid evidence that the stricter verification procedures and additional staff resources devoted to certification processing reduced the incidence of fraud and error under NAP.

1. Quality Control Data

The Puerto Rico Department of Social Services continues to perform a quality control (QC) function comparable to that performed under the Food Stamp Program, although the DSS is no longer required by federal law to do so and there is no federal review process. Under the NAP QC process, first conducted for the period from October 1982 to March 1983, probability samples of active cases and denied or terminated cases are selected and reviewed. The review includes an examination of certification documents, an interview with the client, and interviews with third parties. Although minor changes in the definitions of errors have been made to reflect NAP changes in eligibility rules, the basic federal QC classification of errors has been retained under NAP.

Two types of data are reported from the QC process: error data and variance data. Errors are recorded when an incorrect finding of eligibility or ineligibility is made, or when the amount of the benefit for an eligible household differs by more than \$5 from the "correct" benefit, as determined in the QC review. Aggregate error rates are reported as "case error rates" (the percentage of cases found to involve an erroneous payment) and "payment error rates" (the ratio of the total dollar value of benefit errors, whether positive or negative, to the total value of benefits issued). Variance information provides a more detailed picture about which eligibility elements are subject to error. All deficiencies found in the QC review are noted as variances, whether or not they cause a benefit discrepancy of more than \$5, and whether or not the variance contributed to a problem that qualifies as a QC error.

Figures III.2 and III.3 show trends in case error rates and payment error rates for Puerto Rico's Food Stamp Program and NAP, and for the U.S.

**Quality Control Case Errors: Ineligible and Overissuance
Puerto Rico and U.S. Food Assistance Programs
Six-Month Review Periods: 1977-1984**

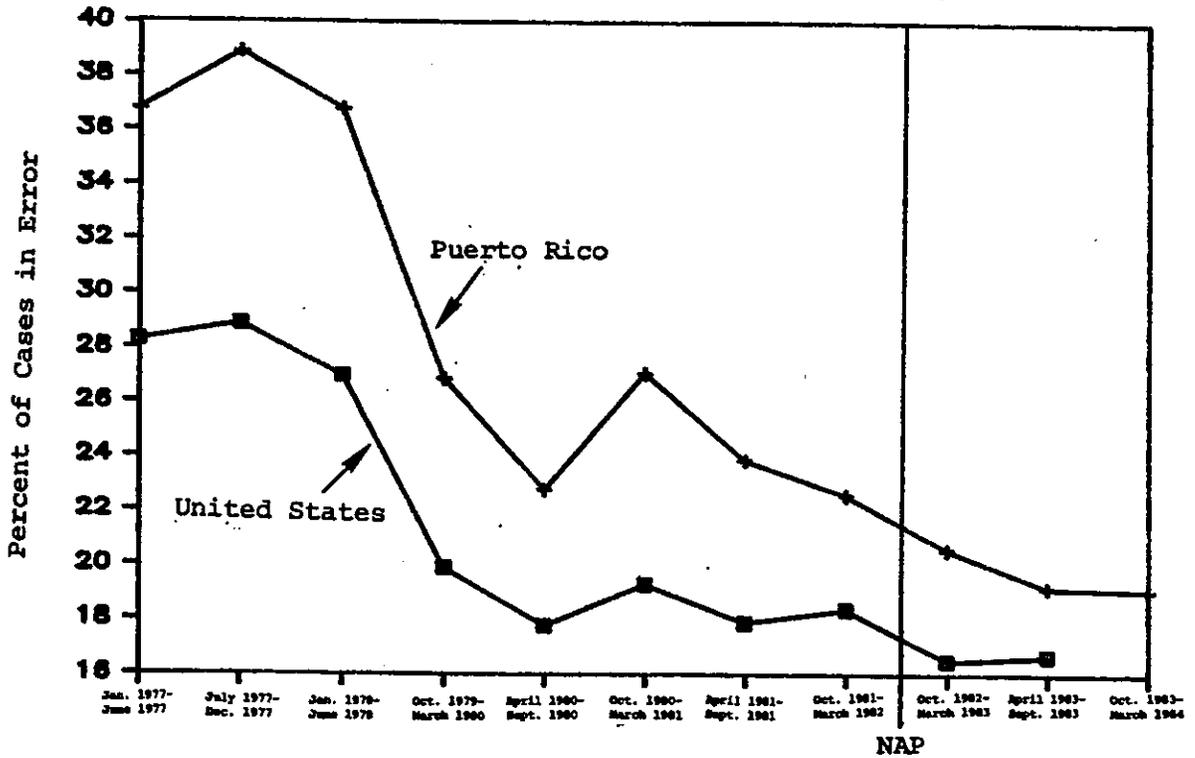
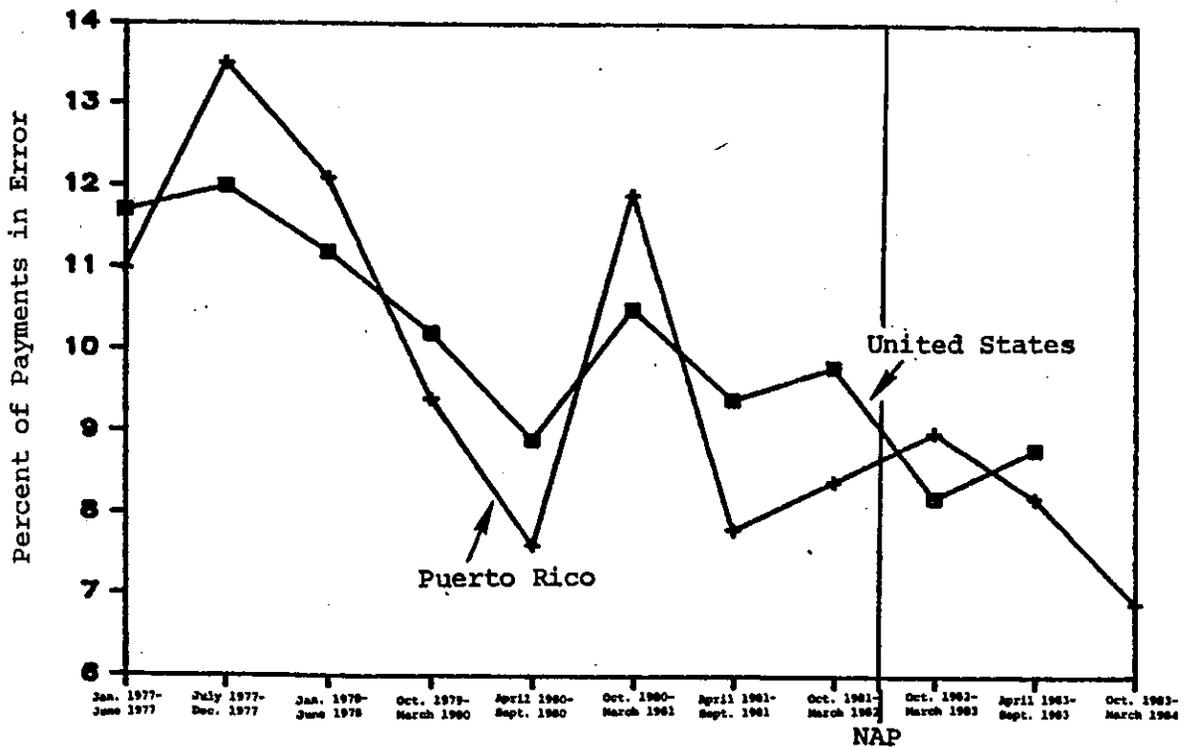


FIGURE III.3

**Quality Control Payment Errors: Ineligible and Overissuance
Puerto Rico and U.S. Food Assistance Programs
Six-Month Review Periods: 1977-1984**



Source: The data sources for both figures are the Puerto Rico Department of Social Services and the USDA, Semiannual Summary Report of Food Stamp Quality Control Reviews.

FSP as a whole, for the period from 1977 to 1984. Error rates presented in these figures are the combined rates for incorrect findings of eligibility and incorrect benefits overissuances.¹ Case error rates in the United States and Puerto Rico have followed quite similar trends, declining from 1977 (because of the incentives and penalties implemented to encourage error reductions), rising a bit in late 1980, and then falling gradually over the next two to three years. While case error rates have fallen since the conversion to NAP, this reduction seems to have begun before NAP was implemented, and seems to parallel a similar decline in the U.S. Food Stamp Program. Thus, no clear evidence exists that NAP has significantly affected the level or trend of case errors.

The Puerto Rico payment error rate has hovered around the U.S. Food Stamp Program level both prior to and following NAP. The relative stability of the percentage of payments in error following NAP would appear to indicate that payment errors, like case errors, have been unaffected by the conversion to NAP. While the drop in the payment error rate during the most recent period suggests a systematic decline, the payment error rate has fluctuated historically.

The frequency and types of variances detected during QC reviews, as presented in Table III.9, show some change under NAP. The rate at which income-related variances are discovered has fallen from an average of 40 per 1,000 QC cases in the five review periods prior to NAP to an average of 30 in the three periods after the implementation of NAP. This decline may reflect some tightening of eligibility certification procedures, but surely

¹ Appendix Table B.1 presents the data on which these figures are based.

TABLE III.9

INCIDENCE OF VARIANCES BY ELIGIBILITY AREA
 PUERTO RICO FOOD ASSISTANCE PROGRAMS
 1979 - 1984
 (Number per 1,000 QC Cases)

Time Period ^a	Total QC Sample	Total Variances	Income ^b	Resources ^c	Eligibility Standards ^d	Nonfinancial Eligibility Standards ^d	Deductions ^e	Computations ^f
Oct. 1979 - March 1980	1,243	621	37.6	2.8	6.8	6.8	2.2	0.6
April 1980 - Sept. 1980	1,301	687	35.3	2.6	6.8	6.8	7.3	0.8
Oct. 1980 - March 1981	1,279	1,104	46.1	21.4	9.4	9.4	8.6	0.8
April 1981 - Sept. 1981	1,166	912	41.4	19.0	8.4	8.4	9.0	0.4
Oct. 1981 - March 1982	1,183	969	39.9	19.5	9.5	9.5	12.1	0.9
Oct. 1982 - March 1983	1,209	942	34.5	12.1	18.1	18.1	11.7	1.6
April 1983 - Sept. 1983	1,176	738	27.5	11.9	14.4	14.4	8.1	0.9
Oct. 1983 - March 1984	1,169	796	28.1	11.1	18.8	18.8	9.3	0.7

SOURCE: Puerto Rico Department of Social Services.

^a Puerto Rico did not conduct quality control during the periods from July to December 1978 and from April to September 1982. In the latter period, the Nutrition Assistance Program was in the process of implementing new regulations.

^b Income variances include variances detected in either earned income (wage and salaries, self-employment, and other earned income) or unearned income (OASDI benefits, veterans' benefits, unemployment compensation, workers' compensation, PA or GA benefits, educational scholarship/grants, and other unearned income).

^c The financial resources category includes variances detected in either liquid or nonliquid resources, where liquid resources include cash on hand, checking or savings accounts, savings certificates, stocks and bonds, nonrecurring lump-sum payments, and other liquid resources; nonliquid resources include non-income-producing properties, vacation homes, vehicles, and other nonliquid resources.

^d The variances in nonfinancial eligibility standards include variances detected in one or more of the following: household size and composition, tax dependency (under FSP), work registration (under FSP), citizenship, residency, or Social Security number (under NAP).

^e The deductions category includes variances detected in one or more of the following: standard deduction, income deduction, dependent-care deduction, shelter deduction, or medical deduction.

^f The computation area includes variances caused by arithmetic mistakes, transcription errors, etc., and are always attributed to the state agency.

also reflects the large reduction in the share of active households which have earnings. Variances pertaining to nonfinancial eligibility standards have increased under NAP. This increase may reflect the expanded requirements for Social Security numbers, new rules governing household composition, and tighter requirements for the verification of citizenship status and identity--changes which might not have been fully conveyed to certification staff and acted upon consistently. However, the overall rate at which variances are found in the QC sample has declined somewhat from the rates observed in the last three reviews prior to the implementation of NAP. This decline may be due largely to the elimination of households with the type of circumstances that are often subject to error--income and resources.

2. Claims Data

Under NAP, the Puerto Rico Department of Social Services has adopted a more aggressive set of procedures for establishing and pursuing claims against households when a benefit overissuance is discovered. Claims can be established whenever one of the following circumstances causes an overissuance:

- o The household fails to provide correct or complete information.
- o The household fails to report changes within ten days.
- o The household alters its check or cashes two checks for the same period.
- o The local office fails to take prompt action on changes or makes an error in computing household benefits.

Other changes to the claims procedures were also introduced:

- o Claims may be established for overissuances to households pending the outcome of a fraud hearing.
- o Collection of claims can be pursued for ten years rather than the three years allowed under the FSP, and plans for repayment can be set up for five years rather than for three.
- o Claims can be established for the collection of any amount, whereas no overissuance of less than \$35 would be pursued under the FSP.

The more aggressive claims procedures introduced with NAP might have had a number of effects. More active pursuit of overissuances and a broader definition of the overissuance situations that would be pursued might be expected to lead to an increase in the number of claims referred. On the other hand, a more active claims process, combined with intensified verification and home visit procedures in eligibility certification, may have discouraged client errors and misrepresentation, and reduced the types of agency errors that would cause overissuance. These changes might have reduced the incidence of claims actions required. Because of these several changes, claims data must be interpreted cautiously.

The frequency of claims referrals as a percent of the program caseload (Figure III.4) declined precipitously in June and July 1982, as NAP was implemented. Since the early months of NAP, claims referrals have tended to increase, and by early 1984 they were nearly back to pre-NAP rates, 0.59 percent of the caseload in the most recent six months of NAP for which data are available (December 1983 to May 1984) compared to 0.60

FIGURE III.4
 Claims Against Households as a Percent of Caseload
 Puerto Rico Food Assistance Programs
 January 1982 - May 1984

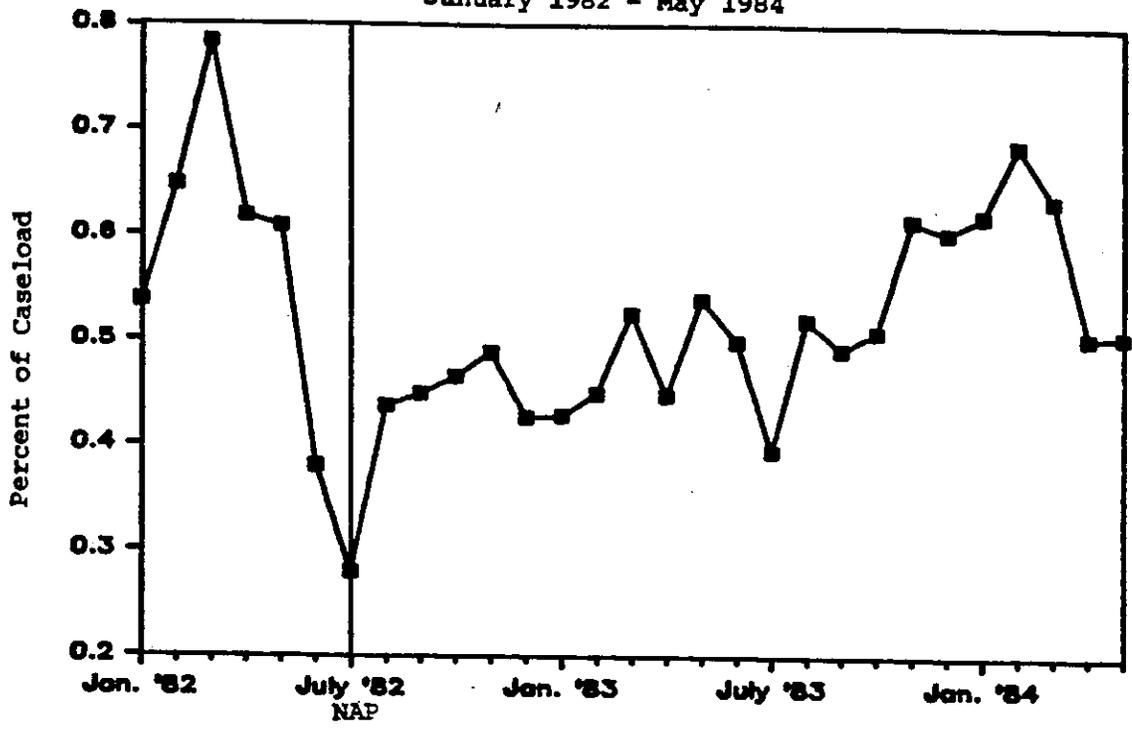
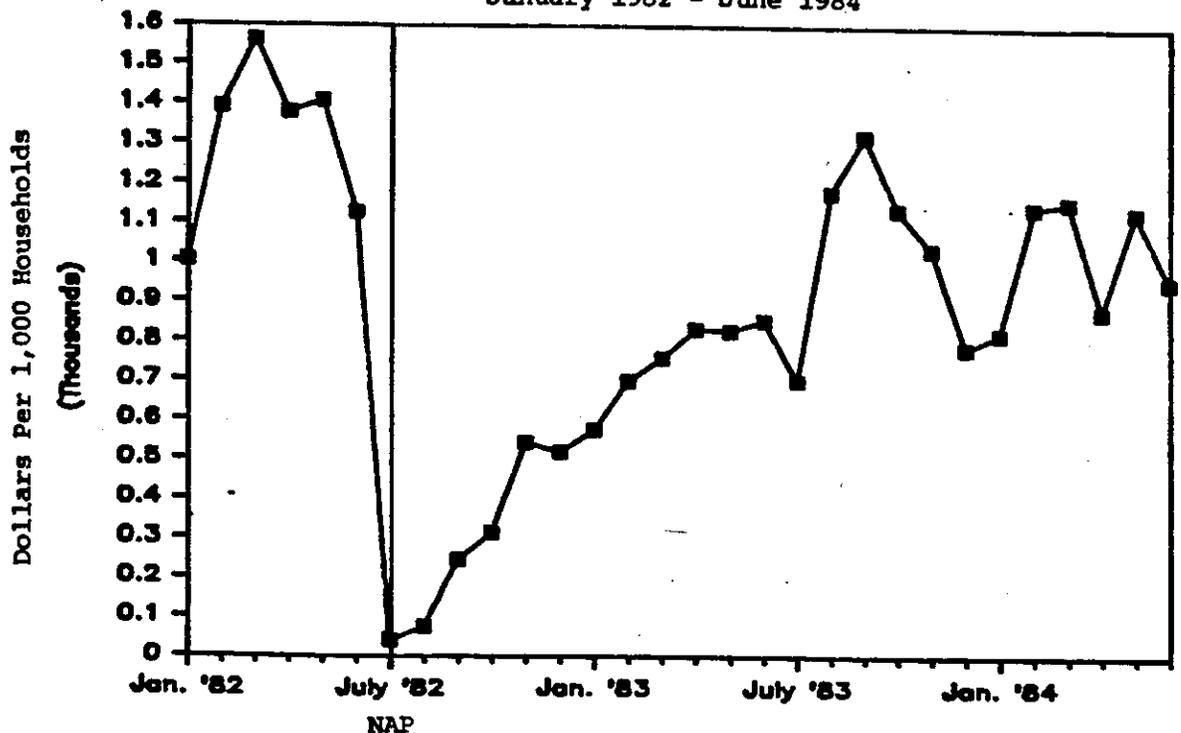


FIGURE III.5
 Dollar Amount of Claims Established Against Households
 Puerto Rico Food Assistance Programs
 January 1982 - June 1984



Source: The data source for both figures is Puerto Rico Department of Social Services.

Note: Claims for the period July 1982 - December 1982 include claims resulting from overissuance under FSP prior to July and from issuances under NAP.

percent in the last six months of the FSP.¹ It is also worth noting that this figure includes the sum of referrals made on the FSP and NAP actions for the months from July to December 1982.² At any given time, some referrals are likely to arise from "old" actions; thus, failing to include referral claims based on FSP actions in that period would give the false impression of a dramatic dip in claims referral activity in the early months of NAP, followed by an increase to levels more closely approaching activity prior to NAP implementation.

Of all the referrals made for possible claim actions, only some lead to the establishment of a claim against a household. Figure III.5 presents the total value of new claim actions per 1,000 cases that were established each month against the FSP and NAP households for the period from January 1982 to June 1984. The dollar value of claims established in the last six months of the FSP averaged \$1,311 per 1,000 households. After dropping to a low of \$291 per 1,000 households in the first six months of NAP, the value of established claims has risen to \$1,013 for the NAP period December 1983 to May 1984.

The pattern in both claims referrals and claims actions suggests that the claims referral system has been re-established under the new food assistance program. Following the initial reduction in claims referrals, both the number of referrals and the value of established claims are approaching the levels of the former FSP, when the reduction in the case-

¹ If the last month of the FSP (June 1982) is ignored the claims referrals as a percent of the caseload was 0.64 under the FSP. Appendix Table B.2 presents the data on which the claims figures are based.

² Claim referrals against households on FSP actions were discontinued after December 1982.

load is taken into account. It is impossible to determine from the available data the extent to which more vigorous claims pursuit or a change in overissuances is responsible for these trends. When considered jointly, the QC data and the claims referral data provide little support for concluding that the stricter verification procedures under NAP had a significant impact on fraud and error.

3. Fraud Hearings

The Administrative Fraud Hearing procedures under NAP are similar to those used under the FSP. Hearings are initiated by NAP regional offices when documented evidence of fraud is presented. Hearings are held after households have been notified. Since the conversion to NAP, the outcomes of the fraud hearing process have shown some change, as illustrated by Table III.10, although it is difficult to interpret the changes. After a transition period of low activity, the number of cases referred for fraud hearings have resumed levels comparable to those under the FSP, when adjusted for the decline in the active caseload. However, a much higher percentage of hearings have led to a finding of fraud--63 percent under NAP since January 1983, compared with 22 percent under the last six months of the FSP. This increase appears to reflect the increase in the percentage of cases in which decisions are reached. As shown in Table III.10, over the last nine months of the FSP, a large proportion of the fraud hearings (41 percent) ended without a final decision being reached. Less than 3 percent of the NAP fraud hearings in 1983 concluded with no final decision.

While it is not possible to determine the precise cause of this change, it may reflect the increased emphasis reportedly placed under NAP on verification and documentation procedures, which may provide support to

TABLE III.10

CASES REFERRED TO THE ADMINISTRATIVE FRAUD HEARINGS BOARD
UNDER THE FSP AND NAP
January 1982 - May 1984

Year	Month	Referrals Received in Month	Hearings Conducted			Total
			Fraud	Non Fraud	No Final Decision	
FOOD STAMP PROGRAM						
1982	January	451	129	178	148	455
	February	580	196	235	225	656
	March	792	296	298	205	799
	April	543	251	286	194	731
	May	721	174	268	527	969
	June	518	139	107	399	645
	July	218	94	71	165	330
	August	199	44	35	72	151
	September	18	18	18	30	66
NUTRITION ASSISTANCE PROGRAM						
1982	July	1	0	0	0	0
	August	15	0	0	0	0
	September	38	0	0	2	2
	October	144	17	11	5	33
	November	120	43	25	18	86
	December	189	74	40	5	119
1983	January	185	110	71	1	181
	February	300	90	45	2	137
	March	333	201	96	0	297
	April	244	150	86	25	260
	May	360	186	89	14	289
	June	427	211	91	19	321
	July	239	194	99	8	303
	August	372	227	107	2	336
	September	379	215	122	0	337
	October	390	209	112	17	338
	November	397	233	119	10	363
	December	296	217	124	0	341
1984	January	318	213	131	0	362
	February	354	185	84	9	278
	March	420	224	103	14	341
	April*	389	175	125	52	352
	May*	368	216	121	39	376

SOURCE: FNS, Evaluation of the Puerto Rico Nutrition Assistance Program and FNS/MARO/CAO, Monitoring Review of the Nutrition Assistance Program.

* Preliminary figures

allow more conclusive judgments to be made in hearings. However, it is also possible that the procedural rules that were set forth by federal regulations for the Food Stamp Program restricted the latitude with which hearing officers were able to reach conclusions more than is true under current hearing procedures.

4. Issuance Discrepancies

Both the Food Stamp coupon issuance system and the NAP check issuance system are vulnerable to certain types of abuse. In the Food Stamp Program, ATPs may be stolen from authorized households and exchanged illegally for coupons. Eligible households may report a theft of their ATP, obtain a replacement, and then exchange both for coupons. Coupons may also be stolen from their storage places or from local offices. Under NAP, these opportunities for abuse are eliminated, but opportunities for theft and fraudulent check cashing still exist, since households may claim to have had their checks lost or stolen, obtain a replacement, and cash both. In both systems, of course, procedures have been implemented to limit opportunities for the occurrence of these abuses.

Since the available data are limited, this portion of the analysis can address only one area of potential abuse. The data do not indicate that abuses of the system have changed substantially under NAP. The Food Coupon Accountability Report (FNS-250), which is used under the FSP to report differences between coupon inventory changes and the value of coupons distributed, showed relatively small total discrepancies. For the period from October 1981 to March 1982, Puerto Rico had a total FSP coupon overissuance of \$21,394, less than .01 percent of total benefits issued during that period. Thus, the theft of coupons from DSS and errors made by

cashiers do not appear to have been major problems under the FSP.¹ Similarly, under NAP, issuance discrepancies have remained small. For instance, available data on the replacement and cancellation of checks provides some indication of the maximum level of at least one type of abuse--fraudulently reporting check theft and receiving unwarranted replacements. The total number of replacement checks issued in 1983 was .006 percent; if all replacement checks had been obtained fraudulently, it is clear that this abuse would still have constituted only a very small percentage of total benefits.

E. FOCUS GROUP DISCUSSIONS WITH PROGRAM PARTICIPANTS

An important component of the information gathered for this evaluation consisted of a series of focus groups--moderated group discussions which were conducted with individuals from households participating in the Nutrition Assistance Program. These discussions provide valuable insights into the ways in which the change to NAP, and particularly the change to cash issuance, have affected participants' use of benefits, and perceptions of the value of program benefits. In particular, the premise that food expenditures might decrease under cash issuance is based on food coupons being restricted to food purchases. Household food expenditures might not be expected to change much as a result of the switch to cash issuance under NAP if the practice of "cashing in" a portion of their coupons for cash or non-food purchases was widespread in Puerto Rico under the former FSP. The

¹The FNS-250 covers discrepancies occurring within the Puerto Rico program's control. Thefts which occur at other points in coupon handling, which can be significant (e.g., thefts at the Government Bank), will not be reflected in the coupon accountability reports.

focus group discussions provide information on this issue and a context for interpreting the forthcoming empirical results on food expenditures and nutrient availability.

1. Focus Group Methodology

Focus groups are used widely to obtain information on the perceptions of individuals regarding sensitive or complex issues. One reason for using focus groups in this study was the capability of this methodology to elicit information on the extent of the "grey market" activity in food coupons. The rapport established by the moderator in the focus group setting, and the knowledge that the anonymity of the individual comments will be preserved, encourage the group participants to speak freely. The trained moderator ensures that each relevant issue is discussed and that all of the different views are brought forth.

The methodology, while very useful, does have distinct limitations. Focus groups are not appropriate for estimating the frequency or magnitude of phenomena. The focus group participants were recruited in a manner intended to ensure that diverse types of food assistance recipients would be represented. However, the sample is quite small. Furthermore, the group nature of the discussion raises the possibility that the views of some participants may be influenced by other group members. Both the small number of participants and the potential for group suasion preclude obtaining statistically valid estimates of the views of NAP recipients through a focus group methodology.

The focus group information consists of participant observations from four group discussions. While the discussions reported below are

clearly anecdotal, the experiences and views expressed were remarkably similar across groups held in different parts of the Island.

Potential participants were drawn at random from the master case record file of participating NAP households and selected such that the demographic composition of the groups approximately matched that of all NAP participants. Stanford Klapper Associates, Inc. of San Juan recruited the members for focus groups held in Central City San Juan, suburban San Juan, a small interior city, and a rural area, all of whom had received benefits under the FSP. Both males and females were recruited, but they were assigned to separate groups because of the possibility that mixed groups might feel constrained from expressing their views openly. Four sessions, each with 10 to 12 participants, were held as follows:

<u>Place</u>	<u>Participants</u>	<u>Date</u>
Central City San Juan	Male	12/13/84
Suburban San Juan (Vega Baja)	Female	12/18/84
Interior Small City (Aibonito)	Male	12/17/84
Rural Place (Barrio in Humacao)	Female	12/16/84

Focus group sessions were led by experienced moderators in Spanish and were tape-recorded for further analysis.

2. Perceptions Toward Program Operations

Two important topics on participants' views toward NAP were discussed: the relative convenience of obtaining benefits once the household is found eligible, and the process of establishing eligibility.

Focus group members consistently stated that NAP provides a more convenient way to obtain benefits once their eligibility has been established. In particular, they cited the inconvenience involved in

exchanging ATPs for coupons under the FSP. Some told of lines forming at coupon issuance locations early in the morning, sometimes as early as 4:00 A.M., and of people waiting five or six hours to obtain their food stamps. According to one participant, "You couldn't leave your place in line to get something to drink or eat; they wouldn't let you back in line." Mothers who found it necessary to bring their infants or small children to the Food Stamp office had to endure these lines with them, and participants who were employed had to use vacation days just to wait in line for coupons. The participants clearly preferred check issuance because they considered it to be a safer and more convenient process: checks arrive at the house directly, and they no longer need to wait in lines each month to receive their benefits. These observations are consistent with the findings of the survey of recipients conducted for DSS shortly after NAP was implemented. In that survey, 88 percent of respondents reported that under the FSP they had had to spend too much time in line waiting to get food coupons on at least one occasion.¹

Focus group members appeared to take the certification and eligibility verification process for granted, reporting matter-of-factly that they are required to bring electric, water, and rent receipts with them to the local office, and that certification staff sometimes come to visit them at home.

¹ See USDA, FNS, Evaluation of the Puerto Rico Nutrition Assistance Program, March 9, 1983, Table IV-4.

3. Misuse of Benefits

An important purpose of the focus group sessions was to gather impressions about the extent to which coupons under the FSP were exchanged for cash or used for ineligible nonfood items, and how the change to cash issuance affected these practices. Group members talked openly about this subject, and generally reported that "cashing in" coupons and using the coupons themselves or their cash exchange for ineligible items was a common practice under the FSP.

According to these individuals, Food Stamp coupons could most readily be exchanged for cash or ineligible items in the "colmados," the small "mom and pop" groceries, rather than in major supermarkets. Some participants expressed resentment about the form of Food Stamp benefits and their perceived exploitation by grocery store owners. Some individuals in the focus groups resented being told that their coupons could be used only to purchase certain items, and some found it necessary at times to exchange them for cash or ineligible items. Respondents felt that colmado owners profited from Food Stamp households' having to use coupons in illegitimate ways. Group members reported that the colmados usually gave them less than the full value of the coupons when accepting them for ineligible items or for cash. Some reported receiving 100 percent of coupon value; others reported receiving between 67 and 80 percent of coupon value.

Many participants reported that, even under the FSP, they could and did use their available benefits for nonfood items. Those who ventured estimates thought that they had spent from about 70 to 80 percent of their available FSP benefits on eligible merchandise, and had spent the remainder on other items, either by obtaining cash or by using coupons directly.

Several participants estimated that about the same percentages of their cash benefits are spent for food under NAP. As one group member said, "We all have to eat. Food is always the number one priority." One participant acknowledged, however, that "if the electric company is going to cut off the lights, then I pay that bill and worry about the food later." Besides food, participants claimed that under both programs they have spent the money on necessities such as electricity and water, but they acknowledged that "other people" sometimes used the money for more frivolous items.

4. Implications of the Focus Group Discussions

The check issuance under NAP has clearly benefited participants by eliminating the need to travel to issuance locations and wait in line to exchange ATPs for coupons. Participant comments in this regard are consistent with findings from the survey of food assistance recipients that was conducted shortly after NAP was implemented. The indication from the focus groups that a portion of food coupons were routinely exchanged for nonfood items is directly relevant to the research on household food expenditure and to the interpretation of the empirical results as discussed in the next chapter. Focus group members indicated that they did not necessarily spend all of their food program benefit on food under either the FSP or NAP. They reported using some of their food benefits for other necessities.

It is critical to reiterate that the focus groups, by themselves, should not be regarded as providing direct evidence on the impact of cash issuance on food expenditures. The inherent methodological limitations noted above rule this out. The apparent prevalence of the trafficking does cast additional doubt on the applicability of U.S. based estimates of the

potential cash issuance impact on food expenditures. Impacts on food expenditures and nutrient availability can be addressed with confidence only by examining changes in actual food expenditure using data collected from statistically valid samples of the Puerto Rico population. This ongoing work is described in the next chapter. However, the focus groups underscore the need to await the results of that analysis before forming judgments about the effects of cash issuance on food expenditures and nutrient availability.

IV. PLANNED RESEARCH ON THE IMPACT OF NAP ON FOOD EXPENDITURES AND NUTRIENT AVAILABILITY

A. OVERVIEW

The primary objective of the Puerto Rico Nutrition Evaluation is to determine the relative effect of cash versus coupons on the food expenditures and diet quality of recipient households. To address this objective, the evaluation will compare Puerto Rico households which receive cash food assistance benefits under the Nutrition Assistance Program (NAP) with Puerto Rico households which received coupons under the former Food Stamp Program (FSP). Because the data on households receiving cash food assistance benefits under NAP were not available until late January 1985, the results of the analysis of household data are not available for this Interim Report. The findings of the full analysis of the effects of NAP on food expenditures and nutrient availability will be the focus of the Final Evaluation Report which will be completed in June 1985.

This chapter describes the planned approach to the analysis of the effects of NAP on food expenditures and nutrient availability. Section B discusses the previous research on the effects of food assistance benefits on food expenditures and nutrient availability and why the findings from these studies are not applicable to the current evaluation of NAP. The Puerto Rico household survey data collected in 1977 (when the FSP was in effect) and in 1984 (after NAP had been in effect for two years) are discussed in Section C. Finally, the planned analysis of the household data is described in Section D.

B. PREVIOUS RESEARCH AND ITS APPLICABILITY TO THE CURRENT STUDY

The relative effects of coupons versus cash on food expenditures and nutrient availability are important, and currently unresolved, empirical questions which will be addressed in the analysis of the 1977 and 1984 Puerto Rico survey data. This section discusses the previous research on the effects of food assistance benefits on food expenditures and nutrient availability. Although the studies summarized provide only limited information on the effects of cash food assistance, it is useful to review their findings as a guide for the analysis of the 1977 and 1984 Puerto Rico household data.

1. Food Expenditures

Studies on the determinants of household food expenditures have a very long history, dating to the time of Ernst Engel (1857). Engel is famous in economics for having first compared food expenditures with income by using several different 19th-century data sets, and for having formulated "Engel's Law": the proportion of income spent on food falls as income rises. This law has been confirmed in study after study for the past 120 years, and it forms the basis for virtually all research on food expenditures.

Recently, economists have directed their efforts toward estimating the effects of both income and food stamp benefits on food expenditures. One of their objectives has been to determine whether food stamps have a larger impact on food expenditures than does money income. Most of the food expenditure studies that have been conducted during the past decade have been based upon four data sets:

1. The University of Michigan's Panel Study of Income Dynamics (PSID) is a nationally representative, annual survey of the same sample of more than 5,000 households. Since 1968, these households have provided interviewers with information on income, food stamp benefits, and expenditures on food consumed at home.
2. The diary component of the Bureau of Labor Statistics' 1972-73 Consumer Expenditure Survey (CES) provides information on household purchases of individual food items during two-week periods between July 1972 and June 1974. Approximately 22,000 households were interviewed during each of the two years of the survey. Information on money income was obtained during both years of the survey, but information on food stamp benefits was obtained only during the second year.
3. The Nationwide Food Consumption Survey (NFCS) provides information on the use of individual food items by households, as well as information on money income and food stamp benefits. A number of supplements of the NFCS have occurred, including a 1977-78 survey of low-income households (NFCS-LI) and a 1977 survey of Puerto Rico households.
4. The Survey of Food Consumption in Low Income Households 1979-80 (SFC-LI) provides information similar to that provided by the NFCS-LI. However, the data were gathered during a more recent period. The sample consists of approximately 3,000 households eligible for food stamps in the contiguous United States.

Three features of these data sets limit the applicability of research findings based upon them to the Puerto Rico Nutrition Evaluation. First, with the exception of a 1977 supplement to the NFCS, the surveys provide no data on Puerto Rico households, whose expenditure patterns may differ from those of mainland households. Second, these data sets provide no information on the relationship between cash food assistance and food expenditures. Third, with the exception of the SFC-LI, the surveys were conducted prior to the elimination of the purchase

requirement (EPR) in 1979.¹ Subsequent to the EPR, food stamp recipients have not been constrained by program rules to allocate some of their money income to the purchase of food. The effect of food stamps on food expenditures since 1979 (and in Puerto Rico immediately prior to the implementation of NAP in 1982) is likely to be weaker than is indicated by estimates based on pre-EPR data.

The deficiencies of existing data sets will be addressed in two ways by the Puerto Rico Nutrition Evaluation. A special 1984 survey of food usage and the receipt of NAP benefits by Puerto Rico households will remedy the first and second data-related problems. Advanced statistical techniques will be used to address the third data-related problem. As discussed in Section IV.D, estimates generated by the statistical analysis will be used to predict food expenditures under the post-EPR Food Stamp Program for households in the 1984 data file. Estimates of the effects of NAP will then be obtained by comparing behavior under NAP with predicted behavior under the post-EPR FSP.

Despite their data-related limitations, existing estimates of the food-expenditure effects of money income and food stamps provide useful information for several reasons. First, these estimates represent the current stock of knowledge on the effects of cash and coupons on food expenditures. In the absence of more appropriate estimates (the Puerto Rico Nutrition Evaluation will produce such estimates; see Section IV.D.2), it would be necessary to use the existing estimates to predict the effects

¹As a continuing longitudinal survey, the PSID provides post-EPR data on food stamps, money income, and food expenditures for mainland households. However, no studies of food expenditures that are based on the recent PSID data appear to exist.

of NAP. Second, when new estimates of the effects of money income, coupons, and cash food assistance on the food expenditures of Puerto Rico households are obtained, they will inevitably be compared to the existing estimates. Finally, it is important to examine existing estimates and the research methodologies that produced them in order to determine what statistical procedures should be used in the Puerto Rico Nutrition Evaluation.

Results from eight existing studies of the food-expenditure effects of money income and food stamps are examined in this section.¹ In each of these studies, statistical techniques were used to estimate the effects of changes in money income and food stamp benefits on household expenditures allocated to food consumed at home.

These estimates are usually presented in terms of the impact of a dollar change in money income or food stamp benefits on food expenditures, which is referred to as the "marginal propensity to consume food" (MPC_f) out of money income or food stamps. The total effect of changes in money income and food stamp benefits is determined by multiplying the changes in these amounts by estimates of their respective MPC_f .

A hypothetical example will illustrate how estimates of the MPC_f can be used to predict the effects of changes in the food stamp benefits and money income on food expenditures. If the MPC_f out of food stamps were

¹Only studies of food expenditures conducted during the past decade were considered. The eight selected studies constitute a substantial portion of that literature. The omitted studies are generally those that were based upon data sets that are not broadly representative of the low-income population (e.g., West and Price, 1976; Neenan and Davis, 1977), do not provide separate estimates of the effects of income and food stamps on food expenditures (e.g., Basiotis, et al., 1983), or were conducted by the same authors or institutions that were responsible for one or more of the selected studies (e.g., Basiotis, 1983).

.30, then a \$1 increase in a household's food stamp allotment would induce a \$.30 increase in its food expenditures. If the MPC_f out of money income were .07, then a \$1 increase in income would induce \$.07 in additional food expenditures. Continuing with this example, a \$50 increase in food stamp benefits would induce a \$15 increase in food expenditures, while a \$50 increase in money income would induce a \$3.50 increase in food expenditures.

As shown in Table IV.1, most existing estimates of the MPC_f out of money income (including transfer money income) are between .05 and .10, while most estimates of the MPC_f out of food stamps are between .20 and .45. Thus, the consensus finding is that pre-EPR food stamps had an impact on the food-at-home expenditures of low-income households that was approximately four times the impact of money income. However, this finding provides little useful information about the impact of the cash issuance of benefits in Puerto Rico.

The large variation in these estimates reduces their usefulness to policymakers concerned about the likely effects of program changes such as cash issuance. Three factors account for much of the variation:

1. The data sets differ, especially in terms of the survey methodologies that were used to obtain information on food expenditures.
2. Important differences occur in the definitions of variables that were used in the statistical analyses. For example, some researchers included the value of home-produced food and food gifts in their measures of food use; others included only purchased food.
3. Neither the specification of the statistical models that produced the Table IV.1 estimates nor the assumptions upon which the models are based are uniform.

TABLE IV.1

COMPARISON OF SELECTED EXISTING ESTIMATES OF THE MARGINAL PROPENSITY TO CONSUME FOOD AT HOME OUT OF VARIOUS INCOME SOURCES

Researcher(s)	Data Used	Sample Sizes	Estimated Marginal Propensities to Consume Food				Comment
			Food Stamps	Money Income	Transfer Money Income	Nontransfer Money Income	
Hymans and Shapiro (1976)	1968-1972 Michigan PSID Data	1st half sample n = 1659	.35/.54 ^a	--	.18	.14	model estimated on five-year averages of continuous variables
		2nd half sample n = 1659	.64/.77 ^b	--	.22	.17	
Benus, Kmenta, Shapiro (1976)	1968-1972 Michigan PSID Data	n not stated by authors	.86	--	.08	.05	model estimated on pooled data for 5 years
West (1979)	1972-73 BLS Consumer Expenditure Survey (CES) Diary Data	FSP participants n = 587	.20 ^b	.09 ^c	--	--	models contain income and benefit interaction terms
		FSP eligible n = 2460	.44 ^d	.07 ^d	--	--	
		FSP eligible nonparticipants n = 1873	--	.07	--	--	
Salathe (1980)	1972-73 BLS Consumer Expenditure Survey (CES) Diary Data	FSP participants n = 557	.36 ^e	.06 ^e	--	--	
		FSP eligible nonparticipants n = 1697	--	.06	--	--	
Brown, Johnson, Rizek (1982)	1977-78 LI Supplement to the Nationwide Food Consumption Survey	FSP full participants n = 911	.45 ^f	.05 ^{f,g}	--	--	
		FSP partial participants n = 53	.10 ^h	.08 ^g	--	--	
		FSP eligible nonparticipants n = 2041	--	.14 ^{f,g}	--	--	
Smallwood and Blaylock (1985)	1977-78 LI Supplement to the Nationwide Food Consumption Survey	FSP eligibles n = 3852	.23	.10	--	--	

TABLE IV.1 (cont. inued)

Researcher(s)	Data Used	Sample Sizes	Estimated Marginal Propensities to Consume Food				Comment
			Food Stamps	Money Income	Transfer Money Income	Nontransfer Money Income	
Chen (1983)	1977-78 LI Supplement to the Nationwide Food Consumption Survey	FSP participants n = 1809	.20 ^j	.09 ^j	--	--	
		FSP eligible nonparticipants n = 2507	--	.05 ^k	--	--	
Blancifort (1983)	1979-80 Survey of Food Consumption in Low Income Households	FSP participants n = 1630	.23 ^j	.11 ^j	--	--	
		FSP eligible nonparticipants n = 1281	--	.06 ^k	--	--	
Blancifort (1983)	1977 Puerto Rico Supplement to the Nationwide Food Consumption Survey	FSP participants n = 708	.42	.03	--	--	
		FSP eligible nonparticipants n = 682	--	.10	--	--	

^aFirst estimate applies to urban target households; second estimate applies to rural target households (where target households are those in the lowest quintile of the per capita income distribution).

^bComputed at sample means in a model with benefit interaction terms, from Table 20.

^cignores income interaction with food stamp benefit, from Table 19.

^dignores income interaction with food stamp benefit, from Table 18.

^eComputed by comparing actual food-at-home expenditures with expenditures predicted on the basis of coefficients that were estimated on a sample of eligible nonparticipants.

^fBased on "unrestricted model" reported in Table 4.

^gThe measure of income includes in-kind income in the form of food gifts or payments and home produced food.

^hComputed by Brown et al., based on their estimated coefficient on the effective price of food for partial participants in the FSP. See page 14 and Table 15.

ⁱFrom Table 2.

^jSource is Table 6.1. MPC out of money income is computed on the basis of the sample mean income reported in Table 3.2.

^kBased on coefficient estimate in Table 6.2 and sample mean income in Table 3.2.

Two possibly inappropriate assumptions were used in most of the statistical models and may account for some of the large variation in the MPC_f estimates that are shown in Table IV.1. The first assumption is that there exist no unobserved differences between food stamp participants and eligible nonparticipants that would cause their food expenditures to differ even in the absence of the Food Stamp Program. However, theoretical considerations and some empirical evidence suggest that even if FSP participants received no food stamps, they would spend more on food than nonparticipants with similar observed characteristics.¹ If such unobserved differences do exist between food stamp participants and eligible nonparticipants, and if appropriate statistical procedures are not used to account for them, then the estimate of the marginal propensity to consume food out of food stamps is likely to be higher than the actual value. This may explain some of the high estimates of the MPC_f out of food stamps that are reported in Table IV.1, because only one study (Chen's) incorporated the effects of unobserved differences between participants and eligible nonparticipants.

The second assumption is that no important systematic differences exist among groups of food stamp participants in the responsiveness of

¹One explanation of why some eligible households participate in the FSP while others do not is that the participants may have a greater need or desire to consume food. If this theoretical explanation is valid, then participants and eligible nonparticipants would be expected to have different food expenditures even in the absence of the FSP. Chen (1983) used a statistical procedure that was first proposed by Heckman (1979) to investigate empirically whether such unobserved differences exist between participants and eligible nonparticipants. He found statistically significant evidence of the existence of such differences.

their food expenditures to food stamps. However, such differences may exist among the following groups:

- o Partial participants in the Food Stamp Program--that is, households which purchased less than 100 percent of their coupon allotment (pre-EPR only)
- o Full participants who spend all of their coupons on food but make no supplemental food purchases with cash
- o Full participants whose food expenditures exceed the face value of their food stamps and, hence, who make supplemental food purchases with cash

These differences are explained in more detail in Section IV.D. All of the results reported in Table IV.1, except those of Brown, Johnson, and Rizek,¹ are based on the assumption that these groups are homogeneous in their responses to food stamps. Therefore, a single value of the MPC_f out of food stamps is assumed to characterize the behavior of food stamp participants in all three groups. This assumption may lead to misleading or incorrect estimates of the food-expenditure effects of food stamps.

The food-expenditure effects of NAP can be predicted on the basis of estimated values of the MPC_f . However, reliable predictions can be obtained only if accurate estimates of the MPC_f are available for Puerto Rico. Accordingly, this review of food expenditure research concludes with three final cautions about using the estimates in Table IV.1 to predict the effects of NAP.

First, all of these estimates of the MPC_f out of food stamps, except Chen's SFC-LI estimate, were obtained on the basis of pre-EPR

¹Brown, Johnson, and Rizek distinguished between partial participants and full participants, but not between full participants who made supplemental food purchases with cash and those who did not.

data. Thus, they may overstate the food-expenditure effects of post-EPR food stamp benefits.¹ Because the purchase requirement had been eliminated in Puerto Rico more than three years before the introduction of NAP, caution must be exercised in using pre-EPR estimates of the MPC_f out of food stamps to evaluate the impact of replacing stamps with cash benefits.

Second, no existing study has estimated the effect of cash food assistance benefits on food expenditures. In the absence of such estimates, existing estimates of the MPC_f out of money income could be used to predict the effect of cash food assistance benefits. However, given the underlying purpose of NAP benefits, some households may target these funds to the purchase of food. The impact of NAP benefits on food expenditures may therefore be greater than that of other money income. If so, existing estimates of the MPC_f out of income would be likely to understate the true effect of NAP benefits. The Puerto Rico Nutrition Evaluation will produce the first estimate of this effect, based on data from the 1984 Puerto Rico Food Consumption Survey. This new estimate will be used to assess NAP's impact on food expenditures.

¹Chen's estimate of the MPC_f out of food stamps based on the (post-EPR) 1979-80 SFC-LI data is actually slightly greater than his estimate based on the (pre-EPR) 1977-78 NFCS-LI data (see Table IV.1). On page 95 of his dissertation he notes that this finding is counter to expectations and he suggests that it may be attributable to changes in the composition of FSP participating households that occurred between the two surveys.

Finally, only Blanciforti's estimates are based upon Puerto Rico data.¹ If Puerto Rico households exhibit food expenditure patterns that differ from mainland households, then the Table IV.1 estimates may generate misleading predictions of the effects of cash food assistance benefits on the Island.

In summary, while numerous estimates of the effects of food stamp benefits and cash income on food expenditures exist, these estimates vary considerably, and none appears to be appropriate for predicting the food-expenditure effects of the switch from the Food Stamp Program to the Nutrition Assistance Program in Puerto Rico. Existing estimates of the MPC_f out of food stamps probably overstate the true food-expenditure effects of post-EPR food stamps in Puerto Rico. Existing estimates of the MPC_f out of money income probably understate the true food-expenditure effects of NAP benefits. These MPC_f estimates would therefore be expected to generate erroneous predictions of large, negative effects of NAP on food expenditures. To avoid such errors, the effects of NAP on food expenditures should be assessed only after obtaining estimates of the MPC_f out of food stamps and NAP benefits that incorporate the effects of EPR, and that are based on the 1977 and 1984 Puerto Rico food consumption data that are now available.

¹Blanciforti's study provides valuable information on food expenditures and the availability of nutrients among Puerto Rico households. However, there are two primary reasons why the Puerto Rico Nutrition Evaluation will not rely upon her estimates of the MPC_f out of money income and food stamps: (1) she imposed six controversial data screens that eliminated 24 percent of all cases (including 49 percent of FSP participants and 25 percent of eligible nonparticipants) from the data file for the Puerto Rico Supplement to the 1977-78 NFCS, and (2) underlying her statistical analysis is the unsupported assumption that there exist no unobserved differences between FSP participants and eligible nonparticipants that would cause them to have different food expenditures even in the absence of the FSP.

2. Nutrient Availability

A major objective of food assistance programs is to raise the nutritional adequacy of the diets of low-income households. However, the realization of this objective is limited by the extent to which food assistance benefits increase food expenditures and increased food expenditures improve dietary quality. Thus, the primary objective of this section is to review the previous research on the effects of both food stamp benefits and other household characteristics on nutrient availability. The review will form the foundation for an empirical analysis of the 1977 and 1984 Puerto Rico household data on nutrient availability.

A secondary objective of this section is to discuss the empirical evidence on the adequacy of Puerto Rico diets, using individual nutrient intake and household nutrient availability data from the 1977 Puerto Rico supplement to the Nationwide Food Consumption Survey, as well as available biochemical data. This review will identify those nutrients which potentially are at low levels in the diets of Puerto Rico households and which should be the focus of the statistical analysis of nutrient availability.

Nutrients That Are Low in Puerto Rico Diets. The 1977 and 1984 Puerto Rico household data provide information on household food energy (calories) and the availability of 14 different nutrients.¹ For the statistical analysis of nutrient availability, it is useful to focus on those nutrients that are potentially low in the diets of Puerto Rico households. Ideally, these nutrients would be identified by linking public

¹The 14 nutrients are fat, carbohydrates, protein, Vitamin A, thiamin, riboflavin, niacin, Vitamin C, Vitamin B₆, Vitamin B₁₂, calcium, phosphorus, magnesium, and iron.

health problems in Puerto Rico to specific nutritional deficiencies. However, questions about what constitutes a public health problem, in conjunction with the difficulty in linking some diseases to specific nutritional deficiencies (e.g., heart disease), makes it almost impossible to identify important low-level or deficient nutrients on the basis of health or disease statistics.

Despite the absence of precise data on nutritional deficiencies in Puerto Rico, three sources of information are available which provide some data on nutrients which are potentially low in Puerto Rico diets. The main source of information is the 1977 individual food intake data collected from over 7,800 individuals in Puerto Rico from July 1977 through December 1977 as part of the 1977 Puerto Rico supplement to the Nationwide Food Consumption Survey (USDA/HNIS, 1982b). Average intakes below the 1980 Recommended Dietary Allowances (RDAs) were found for calcium, magnesium, Vitamin B₆, and calories.

The second source of information is derived from the household seven-day food list recall data, collected also in the 1977 Puerto Rico supplement to the NFCS, covering 3,040 households (USDA/HNIS, 1982a). Analyses of these nutrient availability data also found evidence of inadequacies in the availability of calcium and Vitamin B₆, with only 75 percent of households meeting the 1974 RDA for calcium and only 73 percent meeting the 1974 RDA for Vitamin B₆.¹ In addition, the household data suggest a more widespread dietary inadequacy of Vitamin A, with only 62 percent of the households meeting the 1974 RDA. Less conclusive evidence

¹The published report on the 1977 Puerto Rico household data (USDA/HNIS, 1982a) provides data only on availability relative to the 1974 RDAs, rather than the 1980 RDAs.

for magnesium, iron, and calories since between 80 and 90 percent of households met the RDA for these nutrients.

The third source of information on possible nutritional inadequacies is from a Puerto Rico health survey which was conducted from 1975 to 1977 on a sample of 1,737 Puerto Rico households and collected dietary, anthropometric, and biochemical data (Departamento de Salud, 1982). Although the dietary intake data did not reveal nutritional inadequacies, biochemical tests, conducted on urine samples from 900 children under 18 years of age, indicated low or deficient excretion levels for 31 percent of the sample for riboflavin and 50 percent for Nmethylnicotinamide (an indicator of niacin status).¹

In summary, based on individual intake and household nutrient availability data, inadequate amounts of calories, Vitamin A, Vitamin B₆, calcium, iron, and magnesium may exist in Puerto Rico diets, while the 1975-77 biochemical data indicate possible inadequate intake of niacin and riboflavin.²

Determinants of Nutrient Availability. Determining the effect of food assistance programs on nutrient availability is of primary importance to this study. Previous studies, generally based on mainland U.S. data, have examined this question by using one or more of the following three approaches:

¹ An older, but comparable study conducted on 655 subjects in 1966 found low or deficient levels for 12 percent of the sample for thiamin, 28 percent for riboflavin, and 11 percent for niacin (Fernandez et al., 1971).

² Further evidence of inadequate amounts of Vitamin A, Vitamin B₆, calcium, iron, and magnesium can be found in a number of U.S. mainland studies covering low-income households (e.g, Allen and Gadson (1983) and Neenan and Davis (1978)).

1. Food stamp benefits are presumed to affect nutrient availability independently of money income.
2. Participation in the Food Stamp Program itself is presumed to affect the availability of nutrients, and the food stamp benefit is included as part of money income, which is an additional determinant of nutrient availability.
3. Food stamp benefits are presumed to influence food expenditures, which are in turn hypothesized to affect nutrient availability.

Table IV.2 summarizes selected studies in terms of the estimated effects of food expenditures, food assistance benefits, income, and FSP participation on nutrient availability. For each study, the table presents the target group analyzed and the data base used, as well as the overall effects of the relevant measures on nutrient availability.

Although these studies are comparable in that they are all based on household nutrient availability data, they also differ in three major aspects. First, the samples studied vary from being representative of the population of a single state to being nationally representative. Second, different studies use different measures of diet quality, either expressed as nutrients available to household members, or amounts of nutrients relative to a standard, such as the RDA. Finally, and probably the most important, the studies differ in terms of the nutrients examined and the statistical procedures used to estimate the effect of food assistance benefits on nutrient availability.

Despite these caveats, several findings of the studies summarized in Table IV.2 are important to highlight. First, the more recent studies generally find a strong effect of income or food expenditures on the availability of all nutrients examined, while these effects are smaller and

TABLE IV.2

SELECTED EMPIRICAL STUDIES ON THE DETERMINANTS OF HOUSEHOLD NUTRIENT AVAILABILITY

Study	Target Group and Data Base	Nutrients Examined	Impact of Income, FSP Participation, or Bonus on Nutrient Availability
Adrian-Dantiel (1976)	U.S. low income households. Nationwide Food Consumption Survey data (USDA, 1965-66).	Protein, Vitamin A, calcium, iron, thiamin, Vitamin C	Income has a weak, positive effect on availability of these nutrients.
Lane (1978)	California low income households. Primary survey data (1972-73).	Calories, protein, calcium, Vitamin A, Vitamin C, iron, niacin, riboflavin, thiamin.	For FSP participants, value of food consumed has positive effect on availability of calcium, Vitamin A, and riboflavin; for nonparticipants, positive relation occurs for calories, calcium, and iron.
Neenan-Davis (1978) Davis-Neenan (1979)	Florida rural low income households. Primary survey data and EFNEP records (1976).	Protein, calcium, iron, Vitamin A, Vitamin C.	Except for protein, bonus food stamp income and money income are not consistently related to nutrient availability adjusting for food expenditures.
Scarce-Jensen (1979)	Southern low income households. Consumer Expenditure Survey (BLS, 1972-74).	Calories, protein, calcium, iron, Vitamin A, thiamin, riboflavin, niacin, Vitamin C.	Income has positive effect on availability of all nutrients, except riboflavin; FSP participants have higher availability of calories, protein, calcium, iron, Vitamin A and thiamin than nonparticipants.
Johnson-Burt-Morgan (1981)	U.S. low income households. Nationwide Food Consumption Survey (USDA 1977-78).	Protein, calcium, iron, Vitamin A, thiamin, riboflavin, Vitamin C.	FSP participants have more food energy available, but get only marginal improvement judged by an overall measure of diet quality. No effect of bonus on nutrient availability.

TABLE IV.2 (cont Inued)

Study	Target Group and Data Base	Nutrients Examined	Impact of Income, FSP Participation, or Bonus on Nutrient Availability
Whitfield (1982)	Low income households in Tulsa, Oklahoma (1978).	Calories, protein, calcium, iron, Vitamin A, Vitamin C.	Positive effects of income on availability of calories, protein, Vitamin A, Vitamin C. Weak negative effect of income on calcium. Strong positive effect of FSP participation on availability of protein, iron, Vitamin C: negative effect on Vitamin A.
Allen-Gadson (1985)	U.S. households. Nationwide Food Consumption Survey (USDA 1977-78).	Vitamin A, Vitamin C, thiamin, riboflavin, niacin, Vitamin B ₆ , Vitamin B ₁₂ , calcium, iron, magnesium, phosphorus, calories, protein.	Income and bonus have strong positive effects on availability of all nutrients.
Basotis-Brown-Johnson-Morgan (1983) Basotis (1983)	U.S. low income households. Nationwide Food Consumption Survey (USDA 1977-78).	Calories, protein, calcium, iron, riboflavin, thiamin, Vitamin C, Vitamin A.	Except for iron, positive effects of food expenditures on nutrient availability. FSP participants' availability of calcium, riboflavin, and Vitamin C lower than for nonparticipants, the same for other nutrients.

less consistent across nutrients for the older studies. Second, those studies examining the effects of food expenditures on nutrient availability find weak and inconsistent independent effects of participation in the FSP or of the bonus amount. Third, those studies examining the effects of money income (rather than food expenditures) on nutrient availability generally find that FSP participation or the bonus amount has positive effects on the availability of most nutrients examined. Finally, an important finding--one that could not conveniently be documented in the table due to space limitations--is the significance of factors other than income, food expenditures, and FSP measures in determining nutrient availability. Although the factors examined vary across studies, those which appear to affect nutrient availability include education, household size, race, and location (urban/rural). Indeed, many studies conclude that these "other" factors are the most important predictors of nutrient availability.

Summary. Two questions motivated this literature review:

1. Which nutrients are likely to be at low levels in the diets of Puerto Rico households and thus should be focused on in the analysis of nutrient availability?
2. What are the previously estimated effects of food assistance benefits on nutrient availability?

The literature on the adequacy of Puerto Rico diets suggests a focus on calories, calcium, iron, magnesium, Vitamin A, Vitamin B₆, and, perhaps, riboflavin and niacin. The studies on nutrient availability do not provide a uniform set of findings, but do suggest that food assistance generally has a positive effect on nutrient availability either directly or through food expenditures; however, the specification of this relationship and its estimated magnitude vary considerably from study to study.

C. DATA

The discussion on previous research shows that estimates of the effects of food stamp benefits and money income on food expenditures vary widely, as do estimates of the resulting impact on nutrient availability. The absence of conclusive evidence on the effects of cash versus coupons on household food expenditures and the nutritional adequacy of diets prompted Congress in 1983 to authorize the current evaluation of Puerto Rico's Nutrition Assistance Program. The evaluation approach requested by Congress is a comparison of Puerto Rico households which receive cash food assistance with Puerto Rico households which receive food stamps. Since no data on food expenditure habits and nutrient availability were available for households which receive cash food assistance, Congress mandated that data be collected on food use by Puerto Rico households which receive cash benefits under NAP. The survey effort was fielded in Puerto Rico between July 1984 and December 1984. Data from this survey are currently being analyzed and compared with existing food consumption data collected between July 1977 and December 1977 as part of the Puerto Rico supplement to the Nationwide Food Consumption Survey.¹

The 1977 and 1984 data bases are almost identical in terms of the data collection methodology. The 1984 sample is somewhat smaller than the 1977 sample (approximately 2,500 households in 1984 versus 3,040 households in 1977). Although both samples were randomly selected and were representative of the Island population, the 1984 sample was designed to contain a proportionately greater share of households which participated in the FSP

¹Data on household food use from the 1977 Puerto Rico survey are described in USDA/HNIS Preliminary Report No. 9 (1982a), while data on food intake by individuals are described in USDA/HNIS Preliminary Report No. 12 (1982b).

but were ineligible for NAP because of its more stringent income limits. This group should provide valuable information on the effects of the NAP change in eligibility requirements on food expenditures and nutrient availability.

1. Data on Household Food Use

These two surveys provide detailed information on household food use.² Household food use refers to food and beverages (alcoholic and nonalcoholic) used from household food supplies during the seven days preceding the survey interview. Food used includes food and beverages consumed at home, carried from the home, discarded, or fed to pets. Ordinary pet food and food given to animals for commercial purposes are omitted. Food purchased with cash, credit, or food stamps and food that was home-produced, received as a gift or payment for work, or received through other programs are all included in the measure of household food use. Food from household supplies that was given away for use outside the home is not included in the measure of food use.

The survey methodology was based on a seven-day recall of food use from household food supplies. Respondent households had been contacted at least seven days prior to the actual interview and asked to maintain records of shopping lists, menus, grocery receipts, prices of food, and labels that would help them provide information on food use. Trained interviewers administered the interview in Spanish to the person in the household who had primary responsibility for meal planning and preparation. For each food item used from household food supplies during the

²The 1977 data on individual food intake are not being used for the Puerto Rico evaluation, since comparable data for 1984 do not exist.

previous seven days the interviewer recorded the type of food, the form (fresh, canned, or frozen), quantity used, the price paid (if appropriate), and the source (purchased, home-produced, or gift or pay). Data were also collected on the number and type of meals (morning, noon, or evening) eaten from household food supplies by household members and others, on the snacks and refreshments eaten by guests, and on meals eaten away from home by household members. In addition to the data on food use, information was obtained on household characteristics presumed to be related to food use and dietary quality, such as participation in the FSP or NAP, participation in other food assistance programs (School Lunch, School Breakfast, WIC, or programs for the elderly), household composition, income, education and employment of the household heads, urbanization, tenancy, and food-buying practices.

Total food expenditures from these surveys refer to the sum of the money value of food used at home and the amount spent on meals and snacks away from home. The money value of food used at home includes the value of food used from household food supplies by household members, roomers, boarders, employees, and guests. It is derived from the quantities of the individual food items used by the household during the seven-day period preceding the interview. The quantity of each food item used is multiplied by its price per pound to obtain its money value. Food not purchased directly by the household (i.e., food that is home-produced or is received as a gift or pay) is valued at the average price per pound for that food item paid by the survey households reporting the use and purchase of that food. The total money value of food used at home is constructed by summing the money values of the individual food items.

2. Data on Household Nutrient Availability

Data on household food energy (calories) and nutrient availability are also calculated from the quantities of each food item used by the household. Calories and 14 different nutritive values for each food item are calculated from tables of the nutritive value of foods.¹ Total household caloric availability is derived by summing the calories of the individual food items, and, similarly, the household availability of the 14 nutrients is obtained by summing the nutritive values of the individual food items. Nutritive values pertain to the edible portion of the food used from household food supplies, with adjustments for losses during preparation.

A crucial feature of the data from both the 1977 and 1984 surveys is that the data on household nutrient availability are based only on food used from household food supplies. This point is important if the number of meals eaten at home (or the proportion of total food consumption accounted for by meals at home) changed after the switch from coupons to cash. For example, if NAP resulted in an increase in the proportion of food consumption accounted for by meals away from home (for which no nutrient data are available), then NAP would appear to have reduced the availability of nutrients to recipients regardless of whether any change occurred in the nutritive composition of the

¹The sources for the nutritive values are B. Watt, and A. Merrill, "Composition of Foods . . . Raw, Processed, Prepared," U.S. Department of Agriculture, Agricultural Handbook 8 (revised), 1963; the supplements to the Agricultural Handbook (8-1, 1976; 8-2, 1977; and 8-3, 1978); and M.L. Orr, "Pantothenic Acid, Vitamin B₆ and Vitamin B₁₂ in Foods," U.S. Department of Agriculture, Home Economic Research Report No. 36, 1969. Some values from these reports were revised by the Nutrient Data Research group of HNIS to reflect the current state of knowledge on nutritive values.

food consumed. In analyzing the survey data, special attention will be placed on adjusting the measures of food expenditure and nutrient availability for the proportion of meals eaten at home.

D. ANALYSIS BASED ON HOUSEHOLD DATA

1. Tabular Analysis

An important first step in our evaluation is a detailed descriptive analysis of the 1977 and 1984 Puerto Rico data. The objective of this descriptive analysis is threefold:

1. To provide comprehensive demographic and socioeconomic profiles of participating and nonparticipating households before and after the introduction of NAP
2. To enhance our understanding of the background factors that affect food expenditures and nutrient availability and which must be considered in our more refined approach for estimating the relative impacts of cash and coupons
3. To yield first-cut estimates of the differences in food expenditures and nutrient availability between NAP and FSP participants against which the impact estimates from the statistical analysis can be compared

The approach underlying this descriptive analysis is to produce a set of detailed tables that will address these specific goals. The following subsections describe the types of tables that will be presented and discussed in the tabular analysis.

Descriptive Profiles. The first component of the tabular analysis consists of a set of descriptive profiles of the survey households in 1977 and in 1984. These profiles will be provided by tables that will contain the following:

- o Demographic and socioeconomic household characteristics presumed to influence food expenditures and nutrient availability (e.g., income, household composition, urban/rural residence, the education and employment of the household heads, and participation in food assistance programs)
- o Measures of household food expenditures, including total expenditures, the money value of food used at home, the money value of food used at home that was purchased, and the amount spent on meals and snacks away from home
- o Measures of food used at home by food groups: dairy products; meat; fish; eggs, dry legumes, and nuts; vegetables; fruits; fats and oils; sugars, syrup, jelly, and candy; soft drinks and punches; and other foods
- o Measures of household nutrient availability, including the absolute availability of calories and 14 nutrients, their availability relative to RDAs

These tables will be produced for the total samples in both 1977 and 1984. In addition, because of the many program changes introduced by NAP, tables will be generated for various subsamples defined in terms of FSP and NAP eligibility and the participation status of eligible households. Specifically, NAP imposed more stringent income-eligibility standards, which made some formerly eligible FSP households ineligible for NAP benefits. NAP also implemented stricter verification procedures, which may have resulted in changes (reductions) in the likelihood that eligible households would participate. Given these program changes in conjunction with the switch from coupons to cash, descriptive profiles will be produced for subsamples of the 1977 and 1984 survey households according to the following sample stratification scheme:

1. FSP participants (1977 household survey)
 - a. Eligible for NAP
 - b. Ineligible for NAP
2. FSP nonparticipants (1977 household survey)

- a. Eligible for the FSP and NAP
 - b. Eligible for the FSP; ineligible for NAP
 - c. Ineligible for both the FSP and NAP
3. NAP participants (1984 household survey)
 - a. Eligible for the FSP
 4. NAP nonparticipants (1984 household survey)
 - a. Eligible for the FSP and NAP
 - b. Eligible for the FSP; ineligible for NAP
 - c. Ineligible for both the FSP and NAP.

Tables will be produced to provide demographic and socioeconomic, food-expenditure, and nutritional profiles of each subsample. In addition, comparisons of these profiles will be made between FSP participants and nonparticipants (1 and 2), NAP participants and nonparticipants (3 and 4), FSP participants and NAP participants (1 and 3), FSP participants eligible for NAP and NAP participants eligible for the FSP (1.a and 3.a), and FSP participants ineligible for NAP and NAP nonparticipants eligible for the FSP, but ineligible for NAP (1.b and 4.b). Of particular interest will be the comparison of the tables for FSP participants eligible for NAP and NAP participants eligible for the FSP (1.a and 3.a). It will show the changes in household characteristics, food expenditures, and nutrient availability of the segment of the food assistance population that was unaffected by changes in the eligibility rules. More than for other subgroups, the observed changes will be attributable to the change to cash issuance.

Tabular Analysis of Food Expenditures and Nutrient Availability.

The second component of our tabular analysis consists of an examination of factors that are believed to influence household food expenditures and nutrient availability. Based on previous work, these factors are household income, household composition, whether the household participates in a food assistance program, the amount of food assistance benefits, and the race,

education, and employment of the household heads. In addition, numerous other household characteristics available from the survey data will be analyzed to determine whether food expenditures and nutrient availability are related to these additional factors.

The food expenditure tables will provide a preliminary indication of the relationships between food expenditures and the household characteristics included in the tables. Of particular interest will be the difference in the average value of food expenditures between FSP participants and nonparticipants and between NAP participants and nonparticipants. These differences will be "first-cut" estimates of the relationships between household food expenditures and participation in the FSP or NAP.

A comparison of the food expenditure tables between 1977 and 1984 will provide first-cut estimates of the effect of NAP. Specifically, the difference in the average value of food expenditures between NAP participants in 1984 and FSP participants in 1977 will be compared with the difference in the average value of food expenditures between NAP nonparticipants in 1984 and FSP nonparticipants in 1977. More concisely, let F denote average food expenditures, P denote participants, and NP denote nonparticipants. A simple estimate of the NAP effect on food expenditures would be the following:

$$\text{NAP effect} = (F_{P,1984} - F_{P,1977}) - (F_{NP,1984} - F_{NP,1977}).$$

To the extent that the change in the average food expenditures of the non-participant groups reflects the effect of changes in background factors

(including food prices) between 1977 and 1984 that applied also to participants, the difference between the participant and nonparticipant changes in food expenditures measures the impact of NAP adjusted for these background factors.¹

Similarly, the nutrient availability tables will examine the relationship between nutrient availability and household characteristics. The first-cut estimate of the impact of food assistance benefits on nutrient availability will be derived from the differences in nutrient availability between FSP participants and nonparticipants and between NAP participants and nonparticipants. Again, a comparison of the difference in nutrient availability between NAP and FSP participants with the difference between NAP and FSP nonparticipants will provide the first indication of the effect of NAP on nutrient availability, adjusted for background factors affecting nutrient availability that may have changed between 1977 and 1984.

For several reasons, these differences between participants and nonparticipants, and between 1977 and 1984, are only first-cut estimates of both the effects of program participation and the impact of NAP on food expenditures and nutrient availability. First, other household factors influence food expenditures and nutrient availability, and any differences between participants and nonparticipants in terms of these factors will lead to misleading inferences about the effects of program participation. For example, if food expenditures are greater for larger households and if FSP participating households are larger on average than nonparticipating households, then a simple comparison of average food expenditures for FSP

¹The unadjusted impact would be only the change in the average food expenditures of NAP and FSP participants--that is, $(F_{P,1984} - F_{P,1977})$.

participants and nonparticipants will overstate the effect of food stamps on food expenditures.

The second reason that the tabular analysis will provide only preliminary estimates of the effects of NAP on food expenditures and nutrient availability is that other changes in the FSP occurred between 1977 and 1984. The most important programmatic change is the elimination of the purchase requirement in 1979, which relaxed the constraint that participating households allocate some of their money income to food purchases. EPR is believed to have increased participation and to have altered the relationship between benefits and food expenditures in the same basic direction as the switch from coupons to cash. Thus, a simple tabular comparison of food expenditures based on the 1977 and 1984 surveys is likely to overstate the effects of NAP. In addition, it is important to realize that the impact of NAP refers to both the reduction in benefits and the switch from coupons to cash.

Finally, another important shortcoming of the tabular analysis is that the seven years between the two data collection efforts witnessed changes in other factors which are unrelated to NAP. External factors of potential importance include changes in the population distribution on the Island, demographic trends, business-cycle fluctuations, changes in the labor-force participation of women, migration patterns, the expansion of federal transfer programs, and trends in food production and distribution. For example, the median age has increased steadily over time, and the percentage of the population in the 0-14 age range has declined. Since food requirements differ by age, this factor could contribute to differences in food expenditures in 1977 and 1984. Aggregate economic activity and, hence, individual incomes also differed between the periods. To some

extent, program nonparticipants in 1977 and 1984 can be used to adjust for the effects of these background factors, as discussed above. However, if such changes and their effects on food expenditures and nutrient availability do not apply equally to the participant and nonparticipant groups, this adjustment is incomplete, and the results must be interpreted with caution.

In summary, although the tabular analysis will produce a useful and comprehensive overview of the survey data and the differences between 1977 and 1984, the degree to which this analysis can isolate the effects of the switch from coupons to cash from the confounding effects of other factors is limited. Therefore, more refined statistical analysis of the household survey data will also be undertaken, as described in the following subsection.

2. Statistical Analysis

Given the limitations with the tabular analysis discussed above, a formal statistical analysis of the household data is necessary in order to obtain accurate estimates of the impact of the NAP on food expenditures and nutrient availability. This section discusses the planned statistical analysis.

Food Expenditures. As was discussed in Section IV.B.1, a large body of literature currently exists on the effects of the Food Stamp Program on food expenditures. Building on this literature, the statistical analysis of household food expenditures will consist of two components--the replication of existing studies using the 1977 and 1984 Puerto Rico household data and an extension of the existing studies to account for some potentially important but previously ignored factors. The estimates obtained by replicating selected existing studies on the 1977 Puerto Rico

data will show how the food expenditures of Puerto Rico food stamp recipients differed from the food expenditures of food stamp recipients on the mainland. The replication and extension of existing studies on the 1984 household data will provide statistical estimates of the effect of cash food assistance on food expenditures.

Two types of existing studies will be replicated. The first is a basic statistical analysis (commonly called multivariate regression analysis) of the relationship between food expenditures and the FSP benefit in 1977 and between food expenditures and the NAP benefit in 1984. This statistical approach comprises at least one component of virtually all the studies summarized in Table IV.1. It differs from the tabular analysis discussed above in that the estimates of the MPC_f from money income, food stamps, and cash food assistance will generally be independent of any differences in the observed characteristics between participating and nonparticipating households. For example, if participants have larger households than nonparticipants and if food expenditures are greater for larger households, then multivariate regression will produce estimates of the relationship between food expenditures and food assistance benefits that distinguish between the effects of benefits and household size.

The ability of multivariate regression procedures to adjust for observed differences in household characteristics that may obfuscate the actual effect of food assistance benefits on food expenditures makes it a powerful analysis tool. However, one potential disadvantage of basic regression analysis is its inability to adjust for unobserved differences in household characteristics that also may intervene with the relationship between food expenditures and food assistance. In particular, an assumption underlying all but one of the studies summarized in Table IV.1

is that there exist no differences between food stamp participants and otherwise similar eligible nonparticipants in unobserved characteristics, preferences, or other factors that affect food expenditures.¹ However, the fact that eligible nonparticipants choose not to participate in the Food Stamp Program suggests that they may differ from participants in unobserved factors that influence food expenditures. That is, participating households might spend more on food in the absence of the FSP than would eligible nonparticipants with similar observed characteristics. As discussed in the review of previous research, if unobserved differences between participants and eligible nonparticipants are ignored in the statistical analysis, the estimate of the impact of food assistance benefits on food expenditures is likely to be overstated. Failure to adjust for unobserved differences will attribute all the difference in food expenditures between FSP participants and eligible nonparticipants to the food stamp benefit, when in reality some difference in food expenditures would persist in the absence of the FSP.

The Chen study is the only study summarized in Section IV.B which addresses the issue of unobserved differences between participants and eligible nonparticipants. This is the second type of existing study which will be replicated with the 1977 and 1984 Puerto Rico household data. The basic approach is to analyze not only the determinants of food expenditures but also the FSP and NAP participation decisions, and to recognize that the participation decision of eligible households may itself reflect something important about their food expenditure habits.

¹"Otherwise similar nonparticipants" refers to nonparticipating households which exhibit observed characteristics that are similar to those of participating households, except that they choose not to participate in the FSP.

The second component of the statistical analysis of food expenditures is to extend the basic approach of the Chen study to account for differences in food expenditure behavior among food stamp participants. As discussed in IV.B.1, differences may exist among the following groups:

- o Partial participants in the FSP (i.e., households that purchased less than their full coupon allotment)
- o Full participants who purchase their entire coupon allotment and who spend only that amount on food
- o Full participants whose food expenditures exceed their coupon allotment and, hence, finance food expenditures with both coupons and money income

The approach of the extended analysis is to recognize that these groups of FSP participants may exhibit different food expenditure behavior, and that it is important to account for these differences in order to obtain the best estimate of the impact of food stamp benefits on food expenditures (against which the effect of NAP cash benefits will be compared).¹ The first reason these differences exist is essentially the same as that discussed within the context of participants and nonparticipants--namely, that unobserved factors which influence food expenditures differ systematically with the degree of FSP participation. Because of these unobserved differences, members of the three participant groups would be expected to exhibit different food expenditure behavior even in the absence of the Food Stamp Program.

The second reason that different groups of FSP participants may exhibit different food expenditure behavior is that their financial

¹Actually, the statistical analysis will distinguish only between the two full participant groups, since there are too few partial participant households in the 1977 data (only 28 out of 2,968 analysis households).

circumstances differ in ways that influence the food expenditure response to food stamps. Full participants who spend all of their food stamp allotment on food and spend none of their money income on food have few legal options other than using all of an increase in benefits to increase their food purchases. This is not true for those full participants who spend more on food than their coupon allotment and, hence, finance these expenditures from both food stamp benefits and money income. These households have the option of using an increase in benefits to pay for food that would otherwise have been purchased with cash. The effect of food stamps on food expenditures is expected to be much larger for the first group of full participants (those who purchase no food with money income) than for the second (those who purchase some food with money income). Thus, the change from coupons to cash is believed to have had a greater impact on the first group of full participants than on the second.

The extended analysis will estimate the food expenditure response to food stamp benefits for the two groups of participants. This analysis will take into account unobserved differences between the two groups, as well as differences in the food expenditure incentives provided by food stamps. These estimates will then be compared with estimates of the effects of NAP in order to assess the impact of changing to cash food assistance.

Nutrient Availability. The overall approach for estimating the effect of cash food assistance versus coupons on the availability of nutrients presumes that food assistance benefits (cash or coupons) affect the availability of nutrients through food expenditures. That is, participation in the FSP or NAP is presumed to increase food expenditures, which are in turn believed to increase the availability of nutrients to recipient

households. Thus, the impacts of the FSP and NAP on nutrient availability will be obtained indirectly from the effect of the food assistance benefits on food expenditures and the effect of food expenditures on nutrient availability.

The 1977 and 1984 household data bases contain data on the availability of 12 micronutrients, 2 macronutrients (fat and carbohydrates), and food energy (calories). Although the tabular analysis will analyze all of the nutrient data, the statistical analysis will focus only on those nutrients which may be low in the diets of Puerto Rico households. Based on the discussions of previous research in Section IV.B.2, the most important nutrients for the analysis are calcium, iron, magnesium, Vitamin A, Vitamin B₆, and, perhaps, riboflavin and niacin. Both absolute nutrient availability and nutrient availability relative to RDAs will be examined.

In addition, given the finding discussed in Section IV.B.2 that the average caloric intake of Puerto Rico individuals is less than 100 percent of the RDA for calories and the fact that the availability of many nutrients is related to the amount of calories consumed, caloric availability is considered the most important component of the nutritional analysis. Again, both absolute caloric availability and caloric availability relative to the household's RDA for calories will be analyzed.

Multivariate regression will be used to analyze the availability of calories and the selected nutrients discussed above. To review briefly, the advantage of multivariate regression is that it adjusts for household characteristics that would otherwise contaminate the estimates of the impact of food expenditures (and, hence, food assistance benefits) on nutrient availability. Household characteristics that are likely to be important predictors of nutrient availability (in addition to household

food expenditures) are the education of the household head, whether the household participates in other food assistance programs (School Lunch, School Breakfast, WIC, or organized meal programs for the elderly), and the number and age/sex composition of the household members.

The crucial assumption underlying use of multivariate regression techniques to analyze nutrient availability is that participants in either the FSP or NAP do not have unobserved characteristics or preferences that are systematically different from those of otherwise similar eligible nonparticipants. However, some of the studies discussed in Section IV.B.2 suggest that FSP participants have higher levels of nutrient availability than do eligible nonparticipants, even after accounting for the impact of FSP benefits. If differences in unobserved characteristics or preferences exist between food program participants and eligible nonparticipants, and if these factors influence the availability of nutrients, then a basic multivariate regression analysis of diet quality will lead to a higher estimate of the impact of food assistance benefits on nutrient availability than is truly the case. This is because failing to adjust for any unobserved differences between participants and eligible nonparticipants will attribute all the differences in nutrient availability between these two groups to the food assistance benefits, when in fact some difference would exist in the absence of any food assistance programs.

The planned approach to this potential problem is identical to that discussed within the context of the analysis of food expenditures. Briefly, multivariate regression techniques will be modified to incorporate the fact that the decision to participate in the FSP or NAP may imply something about the underlying preferences for dietary quality. The resulting estimate of the effect of food assistance benefits on caloric and

nutrient availability will be adjusted for the effects on nutrient availability of both the observed characteristics of households and any differences in unobserved characteristics or preferences which are captured by the FSP or NAP participation decisions of eligible households.

3. Simulation Analysis

The statistical analysis described in the preceding subsection will provide estimates of the effects of food stamps and cash benefits on food expenditures and nutrient availability. The objective of this subsection is to describe in detail how these statistical estimates will be used to quantify the effects of two integral components of the Nutrition Assistance Program--the change to cash issuance and the reduction in benefits.

In principle, an estimate of the average effect per household of the switch from coupons to cash assistance is simply the difference between the estimates of the effects of cash benefits and food stamps on food expenditures.¹ In reality, estimating the effect of cash benefits versus coupons on food expenditures is more difficult than simply examining the difference in the food expenditure responses to cash benefits and food stamps. The reason for this is that the effect of food stamps on food expenditures (MPC_f out of food stamps) differed for households that spent their full coupon allotment and no more on food and households that also made supplemental food purchases with money income, as discussed in Sections IV.B and IV.D.2. Hence, these two groups had different MPCs. The statistical analysis of the household data will estimate separate marginal propensities to consume food out of food stamp benefits for these two

¹That is, the difference between the marginal propensities to consume food (MPC_f) out of cash benefits and food stamps.

household groups. An overall MPC_f out of food stamp benefits will then be obtained by weighting the separate MPCs by the relative proportion of the sample in each group.

A more difficult problem, however, is that the proportions of the sample in the two groups for the post-EPR period are not known. Without knowledge of these proportions, it is not possible to weight properly the separate MPC_f estimates to obtain an overall estimate of the effect of post-EPR food stamp benefits on food expenditures. Further, without an overall estimate of the MPC_f out of post-EPR food stamp benefits, the effect of cash versus coupons on food expenditures cannot be assessed.

Simulation is an analysis tool which can overcome these problems caused by the absence of post-EPR food consumption data. The basic approach of simulation analysis is to use the estimates produced by a statistical analysis to predict household behavior under different scenarios. Within the context of the Puerto Rico Nutrition Evaluation, simulation analysis will entail the creation of a simulated post-EPR data file that will provide critical information on the proportion of the 1984 survey households which would have spent only their coupon allotment on food and no more, and on the proportion of the 1984 survey households whose food expenditures would have exceeded their coupon allotment had a post-EPR Food Stamp Program existed in 1984. Estimates provided by the statistical analysis of the 1977 data will be used to predict food stamp participation and benefits, food expenditures, and nutrient availability for households in the 1984 data file in terms of what these elements would have been under a post-EPR Food Stamp Program that provides the same level of benefits as NAP. In effect, on the basis of 1977 statistical estimates, a simulated data file will be created for the 1984 households to show how these house-

holds would have responded to a post-EPR Food Stamp Program. The weights (proportions) necessary to compute the average cashout effect will be obtained from this simulated file.

Simulation procedures will also provide an indication of the benefit reduction effect of NAP on food expenditures. Basically, the aggregate benefit reduction effect can be obtained by multiplying the difference between the average NAP benefit and the average post-EPR FSP benefit by the 1984 estimate of the impact of cash food assistance benefits on food expenditures. To implement this procedure, a simulated data file will be created for the 1984 households to show what their post-EPR FSP benefits would have been, based on that program's eligibility and benefit rules. Participation in this hypothetical program will be simulated based on the 1984 NAP participation equation. The average FSP benefit will be calculated from this simulated file and will then be compared to the average NAP benefit to measure the average benefit reduction per household. The reduction in food expenditures is obtained by multiplying the dollar amount of the benefit reduction by the marginal propensity to consume food out of NAP benefits.

Simulation analysis need not be restricted to predicting the effects of NAP on food expenditures. Estimates from the statistical analysis of nutrient availability will be used to extend the procedure to generate household-level predictions of the effects of NAP on the availability of selected nutrients. This methodology will be used to obtain estimates of the total, cash issuance, and benefit reduction effects of NAP on the availability of calories and selected nutrients.

Finally, simulation analysis can also provide a more detailed picture of the effects of NAP than is provided by single estimates. Since

the procedures entail simulating the behavior of individual households, various subgroups of the population (e.g., female-headed households with children) can be examined to determine the effects of NAP on their food expenditures and nutrient availability.

In summary, simulation analysis will be used to resolve serious analytical problems created by the absence of post-EPR food consumption data for Puerto Rico households. This procedure has the capacity to produce more detailed estimates of the effects of NAP on food expenditures and nutrient availability than can aggregate-level approaches. Furthermore, household-level estimates generated by simulation procedures can be presented to policymakers in the form of easily understood, descriptive tables.

4. Summary of Household Data Analysis. As described above, our analysis of the 1977 and 1984 Puerto Rico data on household food use and nutrient availability will consist of three parts: tabular analysis, statistical analysis, and simulation analysis. Each successive analysis approach will provide more detailed information on the effects of NAP. The major steps in the tabular analysis are summarized in a flow chart that is provided in Figure IV.1. Flow charts for the statistical and simulation analyses are provided in Figures IV.2 and IV.3, respectively.

FIGURE IV.1

TABULAR ANALYSIS OF HOUSEHOLD FOOD EXPENDITURES

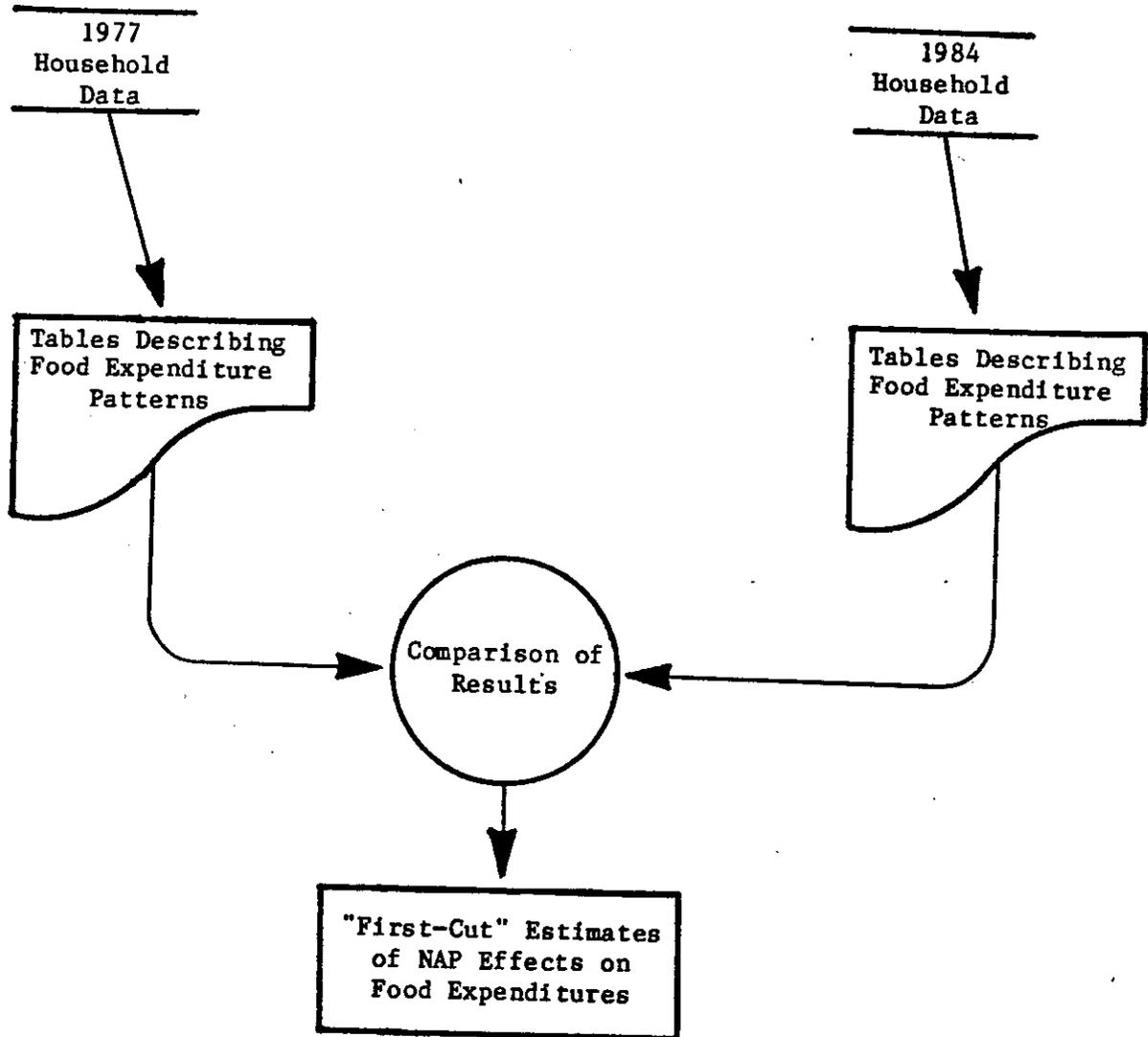


FIGURE IV.2

ESTIMATION OF STATISTICAL MODELS OF HOUSEHOLD FOOD EXPENDITURES

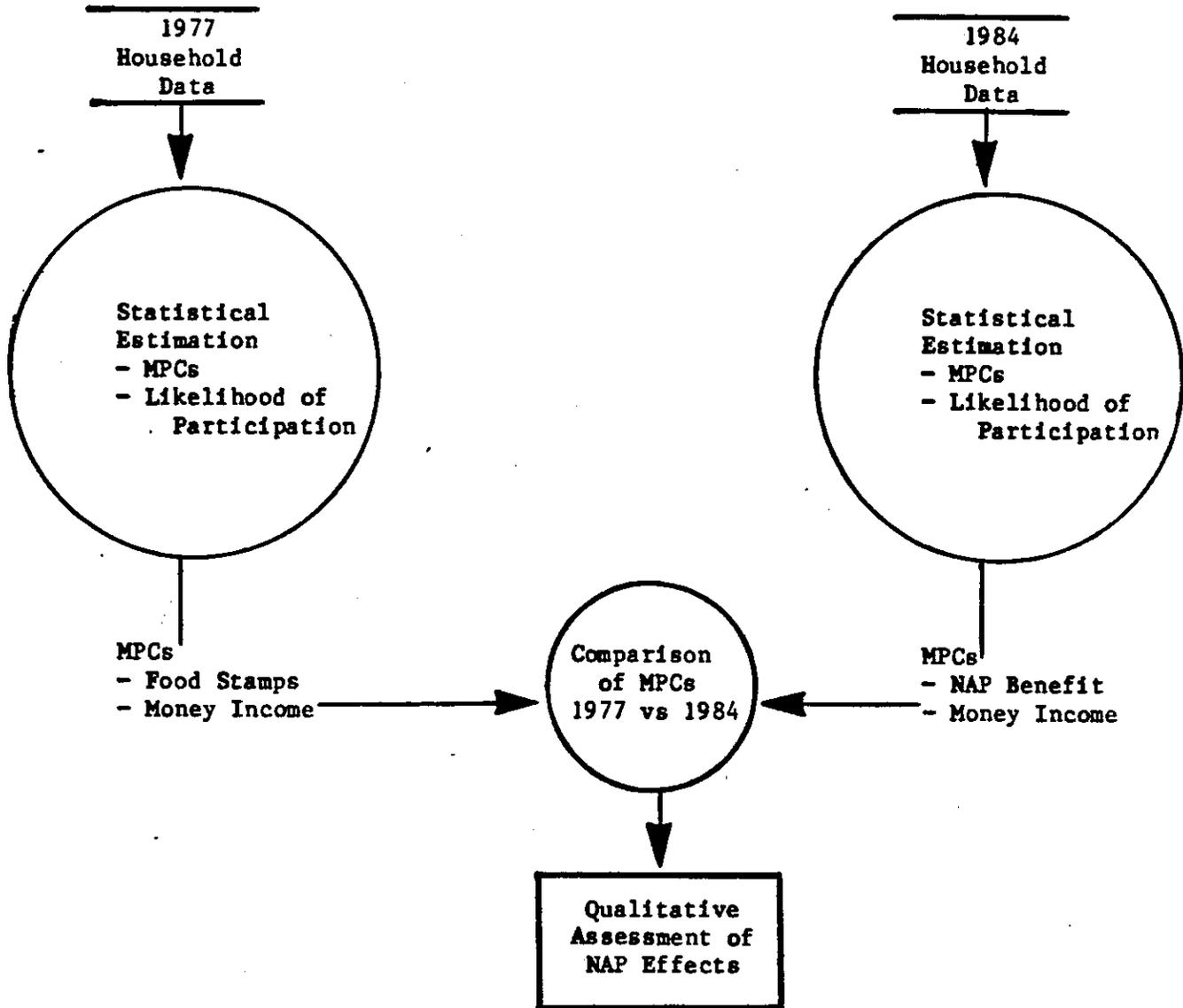
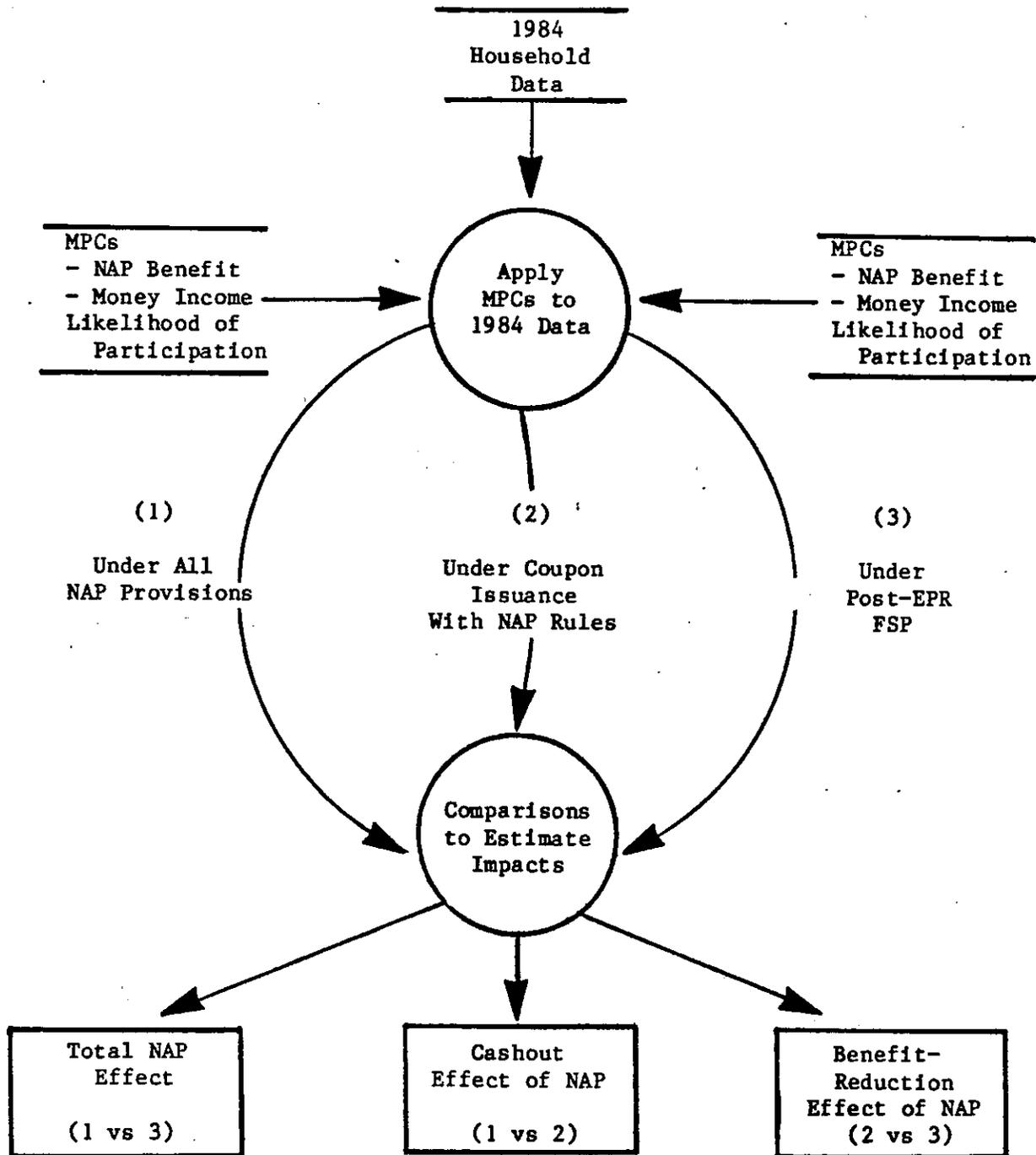


FIGURE IV.3
 SIMULATION ANALYSIS OF NAP IMPACTS
 ON HOUSEHOLD FOOD EXPENDITURES



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APPENDIX TABLE A.1

CHARACTERISTICS OF THE POVERTY AND NEAR POVERTY POPULATIONS
PUERTO RICO, MISSISSIPPI AND THE U.S.

	Puerto Rico		Mississippi		United States	
	1969	1979	1969	1979	1969	1979
Poverty level income for nonfarm family of four ^a	\$3,743	\$7,412	\$3,743	\$7,412	\$3,743	\$7,412
ALL INCOME LEVELS						
Persons (thousands)	2,684.5	3,176.7	2,164.4	2,455.1	198,060.0	220,845.8
Percent 65 and over	6.6	7.8	10.0	11.3	9.7	10.9
Percent in urban areas	43.8	66.7	44.0	46.9	73.3	73.5
Families (thousands)	564.8	757.6	534.4	645.5	51,168.6	59,190.1
Mean family income	\$3,063	\$8,271	\$7,292	\$14,591	\$21,778	\$23,092
Mean family size	4.56	4.01	3.80	3.47	3.56	3.27
Percent receiving public assistance	8.2	14.7	11.3	13.3	5.3	8.0
Percent with children under 18 ^b	73.2	68.0	61.2	58.4	57.7	54.0
Percent female heads with children under 18	11.0	12.8	9.3	11.4	6.8	9.3
INCOME LESS THAN 125 PERCENT OF THE POVERTY LEVEL						
Persons (thousands)	1,943.9	2,253.7	932.6	769.9	36,901.2	37,524.2
Percent of all persons	72.4	70.9	43.1	31.4	18.6	17.0
Families (thousands)	381.5	508.3	193.4	165.2	7,682.0	7,919.0
Percent of all families	67.6	67.1	36.2	25.6	15.0	13.4

Appendix Table A.1 (continued)

	Puerto Rico		Mississippi		United States	
	1969	1979	1969	1979	1969	1979
INCOME LESS THAN THE POVERTY LEVEL						
Persons (thousands)	1,749.9	1,983.2	766.6	587.5	27,125.0	27,392.6
Percent of all persons	67.5	62.4	35.4	23.9	13.7	12.4
Percent 65 and over	7.5	8.1	15.4	16.2	19.2	13.1
Percent in urban areas	34.6	58.6	33.7	41.4	64.5	71.8
Families (thousands)	336.6	439.6	154.3	120.6	5,462.2	5,670.2
Percent of all families	59.6	58.0	28.9	18.7	10.7	9.6
Mean family income	\$1,738	\$3,412	\$1,950	\$4,099	\$1,935	\$3,663
Mean income deficit ^c	\$2,463	\$4,285	\$1,770	\$3,245	\$1,542	\$3,076
Mean family size	4.95	4.28	4.45	4.12	3.88	3.62
Percent receiving public assistance	12.8	21.1	21.5	34.4	27.5	32.5
Percent with children under 18	78.6	74.4	65.2	70.1	63.7	74.3
Percent female heads with children under 18	15.0	17.3	21.7	32.6	27.4	39.2

SOURCE: U.S. Department of Commerce, Bureau of the Census, Census of the Population, General Social and Economic Characteristics.

^a The poverty index reported here is a weighted average for the poverty thresholds for nonfarm families with male and female household heads. For a discussion of the definition of poverty, see U.S. Bureau of the Census, Current Population Reports, Series P-60, No.133, Characteristics of the Population Below the Poverty Level: 1980, Washington, D.C., U.S. Government Printing Office, 1982.

^b "Related" children under 18 years are all persons under 18 years old related to the head of the household, except the spouse.

^c Income deficit is the difference between the total income of families and unrelated individuals below the poverty level, and their respective poverty thresholds. This measure provides an estimate of the amount that would be required to raise the family's or unrelated individual's income to their poverty level. The mean income deficit is obtained by dividing the total income deficit of a group below the poverty level by the number of families or unrelated individuals in that group.

APPENDIX TABLE B.1

SUMMARY OF QUALITY CONTROL REVIEWS FOR THE FSP AND NAP
PUERTO RICO AND THE UNITED STATES

Time Period ^a Location	Percent of Cases in Error (Ineligible and Overissuance)	Percent of Payments in Error (Ineligible and Overissuance)
January 1977 - June 1977		
U.S.	28.3	11.7
Puerto Rico	36.8	11.0
July 1977 - December 1977		
U.S.	28.9	12.0
Puerto Rico	38.9	13.5
January 1978 - June 1978		
U.S.	27.0	11.2
Puerto Rico	36.8	12.1
October 1979 - March 1980		
U.S.	19.9	10.2
Puerto Rico	26.9	9.4
April 1980 - September 1980		
U.S.	17.8	8.9
Puerto Rico	22.8	7.6
October 1980 - March 1981		
U.S.	19.3	10.5
Puerto Rico	27.1	11.9
April 1981 - September 1981		
U.S.	17.9	9.4
Puerto Rico	23.9	7.8
October 1981 - March 1982		
U.S.	18.4	9.8
Puerto Rico	22.6	8.4
October 1982 - March 1983		
U.S. ^b	16.5	8.2
Puerto Rico	20.6	9.0
April 1983 - September 1983		
U.S. ^b	16.7	8.8
Puerto Rico	19.2	8.2
October 1983 - March 1984		
U.S.	N.A.	N.A.
Puerto Rico	19.1	6.9

SOURCE: Puerto Rico Department of Social Services and Semiannual Summary Report of Food Stamp Quality Control Reviews.

^a Puerto Rico did not conduct Quality Control during the periods July to December 1978 and April to September 1982. In the latter period the Nutritional Assistance Program was in the process of implementing new regulations.

^b The U.S. averages for the periods following the implementation of the NAP are based on unpublished statistics provided by the U.S. Department of Agriculture. The payment error rates are preliminary statistics as of December 1984 and are subject to change.

N.A. = data not available.

APPENDIX TABLE B.2

SUMMARY OF CLAIM ACTIONS AGAINST HOUSEHOLDS
FSP AND NAP

Year	Month	Number of Claim Referrals	Number of Claims Established	Value of Claims Established (\$)	Number of Households (Thousands)
1982	January	2,701	2,776	504,241	502.0
	February	3,268	3,759	701,894	504.4
	March	3,988	4,251	794,612	509.1
	April	3,162	3,843	704,807	511.3
	May	3,124	3,637	722,558	513.2
	June ^b	1,962	2,548	580,037	515.6
	July	1,315	118	19,259	469.8
	August	2,022	684	88,579	461.0
	September	2,025	1,002	111,057	449.7
	October	2,034	994	137,160	435.8
	November	2,104	1,524	233,987	429.4
	December ^c	1,823	N.A.	221,289	425.9
1983	January	1,808	1,546	242,892	421.3
	February	1,908	1,731	296,310	423.6
	March	2,237	1,627	321,549	424.4
	April	1,905	1,587	353,167	424.6
	May	2,290	1,221	350,162	423.4
	June	2,106	1,772	358,960	420.2
	July	1,656	1,439	292,873	418.4
	August	2,161	2,085	487,970	414.3
	September	2,051	2,561	549,170	415.9
	October	2,096	2,146	466,236	410.7
	November	2,568	2,298	431,061	417.0
	December	2,475	2,038	320,728	409.9
1984	January	2,519	2,011	332,808	405.8
	February	2,750	2,661	456,013	399.7
	March	2,558	2,408	464,577	402.2
	April*	2,068	1,861	358,668	408.8
	May*	2,068	2,116	459,919	407.0
	June*	N.A.	1,740	388,100	406.6

SOURCE: USDA, FNS, Evaluation of the Puerto Rico Nutrition Assistance Program, USDA, FNS, Monitoring Review of the Nutrition Assistance Program, and Puerto Rico Department of Social Services.

^a Note that administrative adjustments were made where ending and beginning month totals are different.

^b June 1982 is the last month the FSP was operating in Puerto Rico.

^c December 1982 is the last month in which claim referrals were made on FSP households.

*Preliminary figures.
N.A. = data not available

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