A probability model of AFDC-UF: Measuring the determinants of participation

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A PROBABILITY MODEL OF AFDC-UF:

MEASURING THE DETERMINANTS OF PARTICIPATION

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PREFACE

Studying the behavior of public assistance caseloads involves two consecutive tasks: estimating the number of families who meet eligibility requirements and then estimating the proportion of eligibles who will actually participate in the program. Researchers studying the caseload dynamics of the "regular" Aid to Families with Dependent Children program, AFDC-R, correctly focus on the first task. The AFDC-R program serves needy single-parent (usually female-headed) families, and estimates show that the vast majority of those eligible for AFDC-R are program participants.

In contrast, the welfare program for two-parent families with unemployed fathers, AFDC-UF, presents thornier issues for those concerned with caseload dynamics, since AFDC-UF participation rates are relatively low. A complete understanding of AFDC-UF caseload dynamics requires a model to determine what factors affect participation rates, as well as a model to determine the size of the eligible population. Such a model of participation rates is necessary to accurately predict caseload expenditure and dynamics under current legislation; it is also necessary for accurate evaluation of proposed welfare reforms (whether basic or incremental) affecting two-parent families.

This report focuses on the factors that affect public assistance participation rates among low income intact families. It reviews

previous studies of the AFDC-UF program, provides tabular data (from the 1971-75 CPS) on receipt of public assistance among low income intact families, and develops and tests a statistical model for the determinants of participation rates.

Chapter I reviews the SWRRI methodology for studying caseload dynamics in the AFDC-R program, and discusses how such a model could be adapted for studying UF. It also discusses previous research on AFDC-UF, especially relating to studies that estimate UF participation rates. An Appendix to Chapter I shows how hypothetical families in six different states might view the relative benefits of choosing UF or Unemployment Insurance Benefits (UIB), depending on number of children, husband's previous earnings, and wife's earnings. An important factor affecting UF participation for a family with an unemployed father may be the alternative income available through UIB or wife's earnings or both in combination.

Chapter II uses tabular data computed from the 1971-75 CPS tapes to estimate the size of the low income intact family population and its relative proportions of working-poor and unemployed-poor each year. Current welfare legislation does not include working-poor families, but some reform proposals do include them. Therefore, separate tabulations were made for this group. CPS data provided estimates on the size of the aggregate income deficit (the amount needed to bring all families up to a specified income level, expressed as a ratio of the family's poverty cutoff line). Data on receipt of public assistance and/or

unemployment insurance benefits (UIB) were also tabulated. The labor force behavior of wives in all low income intact families was compared with that of wives in families receiving public assistance or unemployment compensation, to provide some clues to the differences between families that do or do not receive public assistance.

Chapter III develops and tests a model for ascertaining the probability of receiving public assistance. The model is used to indicate how sensitive participation rates are to changes in underlying demographic and economic parameters and finds them to be highly sensitive to the family's income deficit (itself based on husband's and wife's estimated earnings) and factors related to the family's life cycle (presence of pre-school children, age of husband). This information is critical for understanding the variance in participation rates among low-income families.

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CHAPTER I

THE SWRRI METHODOLOGY
AND
ITS APPLICATION TO THE AFDC-UF PROGRAM

SWRRI's previous research on AFDC benefits and caseload dynamics presented a conceptual framework, postulating that the potentially eligible public assistance population passes through a series of "filters" or "screens" to determine categorical and financial eligibility, and that the "demand" for welfare slots responds to monthly changes in eligibility. Beginning with that conceptual framework, SWRRI developed an econometric model of AFDC expenditure and caseload dynamics.

The task of the present research is to adapt the SWRRI model to a study of the AFDC-UF program. Section I of this Chapter briefly reviews the major features of the SWRRI model; Section II provides a brief description of the AFDC-UF program; the remaining sections discuss the modifications necessary to apply the general hypotheses of the SWRRI model to a study of AFDC-UF expenditure and caseload dynamics, and explore the limitations of the model's applicability.

I. A Brief Description of the SWRRI Model

The SWRRI model of AFDC caseload dynamics has two distinctive features: 1) its eclectic theoretical perspective, and 2) its use of a 5-equation full components model. Both of these features are described here in condensed form; a detailed discussion is available in Recent State AFDC Benefits and Caseload Dynamics.

The SWRRI model encompasses three major hypotheses regarding AFDC caseload dynamics. They may be broadly defined as the "alternative income", "employment opportunity", and "institutional" theories.

The alternative income hypothesis is derived directly from neo-classical labor supply theory which implicitly assumes that individuals are rational, possess complete information about wage rates, benefit levels, and employment opportunities, and compete in markets in which the supply of jobs is infinitely elastic. Within this framework each utility maximizing individual is faced with a "free choice" between work and welfare. The individual's work choice is constrained only by the maximum number of hours he or she can physically work and the market obtainable wage rate. The simple objective of the individual is to choose the combination of work and welfare that maximizes utility.

The neoclassical work-welfare decision is directly based on each individual's subjective preference for income (work) and "leisure" (welfare) and only indirectly on their monetary values. This is true since a given level of income or benefits may be weighed differently in the utility functions of various individuals. The wage and benefit

levels can be assigned a utility value only if the prices of all other arguments in the utility function are known. Consequently, in the two dimensional work-welfare case, relative wages and monetized benefits are the primary criteria on which consumption decisions are grounded. The neoclassical theory furthermore suggests the direction of the response to changes in relative "prices" under "normal" conditions. For example, if benefits rise relative to wages (i.e., if the value of "leisure" rises relative to its opportunity cost) a rational individual may choose to increase the consumption of welfare relative to work.[1] Conversely, if wages increase relative to benefits, an individual may choose to increase work activity relative to welfare.

The essence of the alternative income theory is the translation from this microeconomic work-welfare decision to the derivation of implications concerning the aggregate caseload. To accomplish this it is necessary to assume that individuals behave as the micro theory would have them. Hence, a rising average benefit/wage ratio will induce more individuals to decide in favor of welfare and fewer in favor of work.[2]

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[1] At the very minimum, the individual will make no response to a change in the benefit/wage ratio. This will occur when the worker is not on the "margin" between work and welfare. However, if the worker is on the "margin", neoclassical theory argues that a rise in the "price" ratio will unambiguously lead to a decline in work effort and a greater reliance on welfare.

[2] Again, this is simplified by the assumption that at low wages, individuals do not reach the backward bending segment of their labor supply curves.

Of course, only those individuals on the margin between work and welfare will be affected by a small change in wages or assistance levels.

The magnitude of the aggregate response to a change in relative benefits will, therefore, be a function of:

(a) The proportion and number of families on the work-welfare margin

(b) The legal and economic factors conditioning the potential combination of welfare and work.

and (c) The size of the change in either benefits, wages, or both.

Since it is impossible to assess the subjective value of benefits and wages, for practical empirical purposes the caseload is made a function of the ratio of the measured monetary value of benefits to the measured expected wage. It takes only one more step to hypothesize that as this ratio rises, more families will approach and surpass the margin leading to a larger aggregate public assistance caseload.

Like the alternative income hypothesis, the employment opportunity theory assumes individuals are utility maximizing, but face specific constraints as to the number and types of jobs available to them. The restrictions arise from either the "supply" or the "demand" side of the labor market.

The employment opportunity theory (or "structuralist" framework -- due to the important role of labor market structure) describes each worker and each job in the economy in terms of a bundle of attributes and requirements. In this context, a state of "employment" exists when there is a successful matching of attributes and requirements between a given

worker and a given job. Therefore, like the alternative income hypothesis, the employment opportunity theory originates at the microeconomic level. Nevertheless, it too can be "macro"-translated so as to yield several important implications for the behavior of the aggregate caseload. Combined with the known attributes of individuals who often must rely on welfare, this theory suggests employment in certain low wage, low skill, industries should have a differentially strong impact on the public assistance rolls. The larger the number of jobs with requirements no greater than the corresponding attributes of individual job seekers, the less restrictive the labor market. Conversely, as the structure of employment "slots" diverges further from the attribute sets of job seekers, the relevant labor market becomes more restrictive. In terms of neoclassical theory, fewer families will be on the work-welfare margin and the employment opportunity terms will consequently replace the benefit/wage ratio as the critical determinant of caseload size.

Furthermore, the employment opportunity theory combined with Keynesian or "deficient demand" unemployment suggests that the caseload should also be strongly related to general economic conditions. This follows from the expectation that the human capital and ascriptive attributes of "typical" welfare recipients will make their ability to find jobs highly sensitive to the level of aggregate unemployment.

In summary, then, both the aggregate unemployment rate and the employment levels in industries that normally hire large numbers of relatively low-skilled workers will affect the probability of individual

families turning to welfare and, therefore, will affect the aggregate size of the welfare population.

The last broad category of caseload behavior theory has been termed "institutional", but is really a residual category for factors not explicitly considered by the two previous hypotheses. Like the employment opportunity theory, the institutional factors generally deal with violations of the assumptions of the alternative income hypothesis.

Unlike the alternative income and employment opportunity theories, most of the factors associated with the institutional hypothesis operate directly at the macroeconomic level. Possibly the most important institutional factors are the political, judicial, and administrative changes that have influenced eligibility and accessibility to welfare programs. These changes may take the form of new programs or the liberalization (or restricting) of existing ones. Other closely related factors may be the number and specialization of welfare office personnel, the frequency of caseload reviews, and the number of workdays welfare offices are open to process cases.

In addition, there are a large number of important social and demographic factors that may affect the size and behavior of the aggregate caseload. These include the changing degree of family instability, migration, urbanization, the degree of "stigma" associated with the receipt of welfare, and the intensity of welfare rights activities.

Each theory must be thoughtfully specified and its proxy variables carefully measured. Moreover, each theory must be tested in the context of a model which accurately portrays the public assistance process.

Most initial attempts to uncover the determinants of welfare caseload trends relied on aggregate caseload equations. These single-equation models could only encompass a few factors and, therefore, could reveal little information on the internal dynamics of the caseload process. Later models focused on the change in the caseload, disaggregating this change into its primary components: "openings" and "closings". These attempts benefited from allowing asymmetrical relationships to enter the model, as more knowledge about the operative factors in the system could be ascertained. The SWRRI model takes the disaggregation process one step further. Individual regression equations are estimated for each of the following components of the "caseload identity":

(1) Applications Received

(2) Application Processing Rate

(3) Acceptance (Rejection) Rate

(4) Closing Rate

(5) Expenditures/Case

With this approach we can estimate the determinants of each component and then reconstitute the "identity" so as to simulate the caseload. In this manner, the ability to model the dynamics of the AFDC process is greatly enhanced. A larger number of variables can enter the model and each of the alternative hypotheses can be tested more carefully. While the "components" system is more difficult to construct than simpler models, the gain in evaluation capacity is well worth the price.

The SWRRI model was developed to analyze caseload dynamics of the "regular" (i.e., female, single-parent) AFDC program. The AFDC-UF

program shares some common features with the "regular" (AFDC-R) program, but also differs from it in some important respects. The following section presents a brief description of the AFDC-UF program and caseload characteristics.

II. AFDC-UF Program and Caseload Characteristics

The AFDC-UF program began with legislation enacted by Congress in 1961. The Social Security Act of 1935, which created the AFDC program, was amended to allow states (if they so chose) to include needy families of unemployed fathers as another aid category. This marked the first instance in which the federal government was willing to provide welfare aid to able-bodied two-parent families. States could decide whether or not to adopt the program; states choosing to adopt the program had considerable discretion in determining eligibility requirements. Subsequent legislation in 1967 (effective July, 1969) continued to allow states to decide whether or not to adopt the program, but established greater uniformity in eligibility requirements. Two-parent families residing in states with UF programs are eligible for benefits if they can pass the same financial eligibility tests (income and asset tests) as AFDC-R recipients, and if the father is currently unemployed (or working less than 100 hours a month), has demonstrated a previous work history, and is registered with the state employment office. Until June, 1975, eligibility for unemployment insurance benefits (UIB) made an unemployed father ineligible for UF. As a result of the Supreme Court's June, 1975 decision in the Glodgett case, a family eligible for both programs could choose the more remunerative one, but joint receipt of UIB and AFDC benefits was still illegal. Currently, the Corman amendment requires UF applicants to apply for and receive UIB (if eligible), but allows UIB to be supplemented up to UF levels for those cases in which

UIB payments are below UF guarantee levels.[3]

The UF program is small, with only about half of the states currently participating. Some states experimented with the program but discontinued it (since 1961 the number of UF states has fluctuated between 15 and 25). The UF states tend to be large, industrialized, and in the North or West.

UF cases constitute a small proportion of the total national AFDC (UF and R) caseload: 4.6 percent in 1969, 6.0 percent in 1971, and 4.6 percent in 1973.[4] Two states discontinued the UF program between 1971 and 1973, and this reduction in state coverage partly explains the relative decline in the national UF caseload.

As compared with AFDC fathers who are incapacitated, UF fathers tend to be younger, more educated, and less likely to work in the agricultural sector. The "typical" UF father is likely to be white, under 35, with less than a high school degree, and in an unskilled occupation. Of all fathers in AFDC families, those who are incapacitated far outnumber those who are unemployed (see Table 1). Between 1967 and 1973, the relative size of the UF caseload (as well as its absolute size) reached its peak in 1971, which as mentioned above, was also the year of maximum state coverage.[5]

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[3]HR13272, permitting joint receipt of UIB and UF, was reported out favorably from the House Committee on Ways and Means during the 2nd session of the 94th Congress, May 1976, and became law on October 20, 1976.

[4]Mathematica, Ind., "Trends in the Characteristics of AFDC families: A Comparison of the 1969, 1971 and 1973 AFDC Surveys", September 1975.

[5]Ibid.

TABLE 1.1

Fathers in AFDC Families: Number who are Incapacitated
and
Number Unemployed - 1967, 1969, 1971, 1973

Number of Fathers	1967	1969	1971	1973
Incapacitated (I)	152,736	190,700	246,300	237,946
Unemployed (U)	65,600	75,500	152,600	119,795
U as % of Total (I+U)	30%	28%	38%	32%

Source: NCSS National AFDC Studies - 1967, 1969, 1971,, 1973.

A 1975 study of characteristics of the AFDC-UF caseload in Vermont found that the median age of UF fathers was about 30, their median education level 1-3 years of high school. The median time unemployed prior to most recent opening was 1 month, and the majority had held their last full-time job for less than 6 months. A large majority had not received UIB after their last full-time employment. Median duration of UF payments was 4 months for recently closed cases, 9 months for active cases. The study found some evidence for "cycling": about half of the closed cases and one-fourth of the active cases had received UF previously.[6]

The Vermont study estimated that about one-third of UF active recipients are financially "better off" on UF than on their net income (after income and Social Security taxes) from their last full-time job. For those who were "better off" on UF, the median gain was $85.00/mo.[7] If work expenses had been calculated, the number who were better off on UF, and the size of their gain, would have been even greater. Similar findings are reported by Leonard Hausman for a 1965 sample of AFDC-UF recipients.[8] Gramlich, using longitudinal data from the Michigan Panel Study of Income Dynamics, finds that on average, UF benefits are higher

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[6] Vermont Department of Public Welfare, "AFDC-UF (unemployed Father) Survey," (Mimeo, 16 pp. no date).

[7] Ibid

[8] Leonard J. Hausman, "Potential for Financial Self-Support among AFDC and AFDC-UP Recipients", Southern Economic Journal, 36 (1) July 1969, pp. 60 - 66.

than the recipients' previous gross income.[9] Thus, the UF recipient is often a man who not only experiences unemployment, but whose earnings, even when at work, may well be below UF benefit levels. Are these recipients representative of the total population eligible for the program?

This question does not arise in the AFDC-R program, where it is estimated that over 90 percent of those eligible are receiving benefits.[10] It is, however, a valid question for the UF program, where estimated participation rates are far lower.

Estimating the UF-eligible population is more difficult than estimating AFDC-R eligibles. UF has additional eligibility requirements on which it is often difficult to get data (e.g., previous work history and number of hours worked in a month). Data on assets are also frequently unavailable, and the possibility that a family will be income-eligible but asset-ineligible may be greater for AFDC-UF than for AFDC-R. In some studies it is also difficult to separate receipt of UF from receipt of other public assistance available to male-headed families (AFDC-Incapacitated Father or General Relief).

Previous estimates of welfare participation rates for male-headed families range from 15 - 45 percent, with most of the estimates clustering

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[9] Edward M. Gramlich, "The Institutional Effects of Higher Unemployment", Brookings Papers on Economic Activity (2: 1974) pp. 293-336.

[10] Barbara Boland, "Participation in the Aid to Families with Dependent Children Program (AFDC", in Studies in Public Welfare Paper No. 12, Subcommittee on Fiscal Policy, Joint Economic Committee, November 4, 1973.

in the mid-range. Gramlich (using the Michigan Panel Data) estimates an annual AFDC participation rate of 35 percent for male-headed families living in UF states and having pre-transfer income below 150 percent of their respective poverty lines.[11] This probably overestimates participation in UF, however, since his numbers include recipients of AFDC-Incapacitated Father. Similarly, a 1970 Rand study of welfare in New York City passed its sample population (from the 1970 Census Employment Survey) through eligibility screens simulating New York City's welfare regulations.[12] This study partially controlled for assets by eliminating families with any evidence of income from asset ownership . It estimated an annual welfare participation rate of 45 percent among male-headed families, but this included working poor families receiving Home Relief as well as UF and Incapacitated Father cases.

Barbara Boland used data from the March 1971 Current Population Survey (CPS) to estimate a 1970 annual UF participation rate of 37 percent, a small increase from her estimated 34 percent participation rate in 1967.[13] Boland's estimates of the UF caseload are taken from the biennial AFDC studies. As Lidman points out, these studies apparently overestimate

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[11] Gramlich, op.cit.

[12] D. M. deFerranti, Stephen Leeds, Joseph Grandfest, Valerie Leach, Peggy Parker, Linda Prusoff, The Welfare and Non-Welfare Poor in New York City, New York City Rand Institute, R-1381-NYC, June 1974.

[13] Boland, op.cit.

the actual UF caseload.[14] Therefore, Boland's UF participation rates may be overstated.

Lidman himself uses the March 1971 CPS to estimate a UF participation rate of 15 percent for that month.[15] His estimate is not really comparable with the others, since it is for a given month's participation rate, while the others are annual participation rates. Moreover, Lidman's estimate takes the actual caseload in March 1971 as a percent of those who were eligible during 1970, while the other studies compare recipients with those eligible in the same year.

The CPS data do not allow Lidman or Boland to easily account for income - eligibles who may be asset-ineligible. However, both believe that assets are unimportant for this population. Some supporting evidence for this point of view may be drawn from Stone and Schlamp's 1964 study of low-income welfare and non-welfare male-headed families in California:[16] 3.8 percent of "long-term" recipients, 7.0 percent of "short-term" recipients and 15.1 percent of those "never on assistance" had savings; for those in each category who had savings, the median amounts were $95 for the "long-term" recipients, $89 for the "short-term" recipients, and $264 for those never on assistance.

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[14]Russell Lidman, "Why Is the Rate of Participation in the Unemployed Fathers Segment of Aid to Families with Dependent Children (AFDC-UF) so Low?" Institute for Research on Poverty Discussion Papers, University of Wisconsin, November 1975.

[15]Ibid.

[16]Robert C. Stone and Fredric I. Schlamp, Welfare and Working Fathers, Heath Lexington Books, D. C. Heath, Lexington, Mass. 1971.

None of the participation rate estimates is able to measure the eligible population with precision. Nevertheless, the "ballpark" figures suggest that, compared with participation in AFDC-R, a large portion of those who can meet UF eligibility requirements are not receiving aid. More than for AFDC-R models, a model of AFDC-UF caseloads must take into account not only those factors that determine the size of the eligible population, but also those factors that determine the proportions of recipients and non-recipients among those eligible.

It is therefore clear that the SWRRI model developed for AFDC-R caseloads needs some modification for an analysis of AFDC-UF. The remaining sections of this Chapter discuss the modifications required in testing the general hypotheses of the SWRRI model. The "employment opportunity" and "institutional" theories will be discussed briefly in Sections III and IV, respectively. Their AFDC-UF adaptations are relatively straightforward. The "alternative income" theory is the more difficult to adapt and will be discussed at length in Section V.

III. AFDC-UF Adaptation of the "Employment Opportunity" Hypotheses

The "employment opportunity" hypothesis focuses on the availability of jobs as the factor playing the most important role in explaining caseload dynamics. It emphasizes the importance of structural shifts in the demand for labor (i.e., changes in the demand for labor in those industries most likely to provide employment to workers with characteristics similar to those of welfare clients), as well as the importance of overall economic conditions.

SWRRI's preliminary work on Washington and Upstate New York AFDC-UF caseloads show them to be highly sensitive to employment conditions.[17] This is not surprising, since program eligibility requires the UF father to be a worker with strong labor force attachment who is currently unemployed (or working less than 100 hours a month). The Upstate New York model shows AFDC-UF caseloads to be more sensitive than AFDC-R to the state's unemployment rate and to the agricultural employment cycle. Washington's UF caseload was sensitive to the state's unemployment rate, changes in the index of "low-training" manufacturing employment, employment in the aerospace industry, and seasonal fluctuations in agricultural employment. The Washington models also reveal some evidence of "cycling" between welfare and jobs

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[17] Kathleen Sestak, AFDC Caseload and Benefit Dynamics - Washington, Social Welfare Regional Research Institute, Boston College, July 1976; Barry Bluestone, AFDC Caseload and Benefit Dynamics - Upstate New York, Social Welfare Regional Research Institute, Boston College, July 1976.

in "low-training" industries. In both states, the UF caseload shows strong seasonal variations -- generally peaking during the winter months and reaching their trough around late summer or early autumn. This phenomenon has also been noted in the national statistics: Lansdale points out that the entire UF program shows strong seasonal tendencies, with highest caseloads in March and lowest caseloads around August-September-October.[18]

Other research on UF caseloads also shows high sensitivity to employment conditions. Rydell found that UF caseloads in New York City were sensitive to recent unemployment, but not sensitive to a measure of lagged unemployment (implying that this population is not eligible for UIB, and must apply for UF soon after becoming unemployed).[19] A study of New York City UF cases by reasons for opening and closing shows that UF cases openings are largely a result of unemployment (as eligibility requirements would imply), but that case closings occur for a variety of reasons, not always directly related to resumption of employment.[20]

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[18]Robert T. Lansdale, "The Unemployed Parent Segment of AFDC: Category within a Category", Social Work, January 1967.

[19]C. Peter Rydell, Thelma Palmiero, Gerard Blais, and Dan Brown, Welfare Caseload Dynamics in New York City, R-1441-NYC, The New York City Rand Institute, October 1974.

[20]Janet Quint and Dan Brown, Welfare Case Turnover in 1972, City of New York, Human Resources Administration, December 1, 1973.

A recent study of the effect of the 1973-1975 recession on the national UF caseload also found the program to be highly sensitive to economic conditions, as measured by the national unemployment rate and the manufacturing layoff rate.[21] Dummy variables were included to account for the seasonal variation so typical of the program. The study implied that these seasonal caseload fluctuations could be attributed both to actual variations in the availability of jobs and to welfare office response (greater stringency in accepting and retaining cases) to greater seasonal availability of jobs.

Thus, the sensitivity of UF caseloads to economic conditions seems well-established. Previous variables used to proxy the economic conditions facing actual and potential UF clients have included the overall unemployment rate, the manufacturing layoff rate, and sectoral indices of employment levels in "low-training" and "high-turnover" industries, as well as the agricultural sector.

Other variables that seem promising for inclusion in state AFDC-UF models using monthly data are: the percent of total insured industrial unemployed in low complexity occupations; and sectoral insured unemployment rates in durable goods manufacturing, nondurable goods manufacturing, and services. These variables are published in the Department of Labor's Unemployment Insurance Statistics.

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[21] David Hough, "AFDC-Unemployed Fathers", in "The Cyclical Behavior of Income Transfer Programs; A Case Study of the Current Recession", Paper No. 7, Office of Income Security Policy, Office of the Assistant Secretary for Planning and Evaluation, Department of Health, Education and Welfare, October 1975.

SWRRI's models of the AFDC-R program used indices of employment levels in those industries likely to provide jobs for workers with characteristics similar to those of welfare recipients. Employment levels seemed to be a good proxy for economic conditions facing the female AFDC-R recipients. Studies of women's labor force participation show they are responsive to job availability, and are more likely than men to be "discouraged" workers who leave the labor market when jobs are less available. Sectoral unemployment rates may be a better proxy than the sectoral employment levels for the economic conditions facing male workers who are potential UF recipients. Their labor force participation is less likely to be affected by the availability of jobs, but whether they are employed or unemployed may depend on the unemployment rates in the subset of industries that normally provide work for them.

IV. AFDC-UF Adaptation of the "Institutional" Hypothesis

The "institutional" theory attributes changes in welfare caseloads to a variety of legal, administrative, and demographic changes and emphasizes political and social, rather than purely economic factors. While the "alternative income" and "economic opportunity" theories attempt to explain caseload dynamics from the "demand" side (the considerations that cause a client to apply for and/or remain on public assistance), the "institutional" theory also pays attention to the "supply" side (the factors that determine the willingness of the social service agency to accept new cases or continue existing ones).

SWRRI's preliminary models of the AFDC-UF caseloads in Upstate New York and Washington show some sensitivity to "institutional" variables. Upstate New York UF caseloads were more responsive than AFDC-R caseloads to administrative policies such as tightened applications procedures, recertifications, and other state legislation restricting access to welfare. There is also some indication in Upstate New York that during times of unusually high welfare office workloads, UF applications may receive higher priority than AFDC-R applications. In Washington, during the time that the state interpreted the Brooke Amendment so that UF recipients could not take advantage of its provisions, the closing rate increased as recipients chose lower rent in preference to UF benefits.

Other discussions of the effect of "institutional" forces on the UF caseload include changes in national legislation and attitudes of state and local administrators. Mildred Rein points out that the 1967

federal legislation (effective July 1969) establishing a uniform definition of "unemployed father" and "previous work history" superceded a variety of state practices that were generally less restrictive.[22] Rein argues that these federal restrictions dramatically reduced the population eligible to participate, by removing the "working poor" (those working over 100 hours a month) and the "welfare poor" (those without a recent work history).

Lidman points out that state and local welfare offices can exercise considerable discretion in interpreting eligibility rules.[23] States with UF programs show systematic interstate differences in rejection rates, and Lidman hypothesizes that there are systematic local differences as well. There may also be a tendency for welfare workers to assign UF eligibles to other aid categories. Lansdale discusses a tendency in some areas to use General Relief, viewed as shorter-term temporary aid, in preference to AFDC, viewed as fostering longer-term dependency.[24]

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[22]Mildred Rein, "Conflicting Aims in AFDC-UP", SWRRI Publication #11, Social Welfare Regional Research Institute, Boston College, August 1972.

[23]Lidman, op.cit.

[24]Lansdale, op.cit.

He also suggests that states without UF programs may be providing aid to needy families with unemployed fathers by using a broad definition of "incapacitated" and enrolling them in AFDC-Incapacitated Father.

The general distaste for giving welfare to employable men may also show up in programs to "divert" potential UF recipients from applying for public assistance, by immediately referring them to Division of Employment Security representatives who work at the welfare office. Such a "diversion" program has been operating in Massachusetts, and has been credited with keeping UF applications down. Other such programs would include giving UF fathers priority access to WIN placements.

Several researchers have noted a high degree of marital instability in the UF caseload. A study of UF in Alameda County, California, found that in every quarter, 16 percent of all UF case closings were due to the father abandoning the family and its case being trasferred to AFDC-R.[25] Lidman estimates that about 20 percent of UF families will break up within the first year of receiving assistance.[26] Therefore, an important reason for UF case closings will be the administrative transfer of UF cases to the AFDC-R rolls.

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[25]Frank Levy, Clair Vickery, Michael Wiseman, "The Income Dynamics of the Poor," University of California - Berkeley (no date).

[26]Lidman, op. cit.

Other institutional factors that require consideration, although they may be impossible to build into an econometric model, include the greater degree of stigma perceived by potential UF recipients (as compared to AFDC-R recipients) and general ignorance of the program's existence. Lidman points to both of these factors in keeping program participation low.

V. AFDC-UF Adaptation of the "Alternative Income" Hypothesis

SWRRI's preliminary AFDC-UF models for Washington and Upstate New York found that caseloads were highly sensitive to employment conditions and administrative policies. They were not very sensitive to "alternative income" variables, as measured by the ratio of welfare benefits to expected wages.

However, the "alternative income" variables developed for models of AFDC-R caseloads may not be suitable for a study of UF caseloads. Differences between the two programs make the definition of "alternative income" far less straightforward for AFDC-UF than for AFDC-R. These differences derive both from different family structures as well as different program regulations.

For the AFDC-R program, a single parent (usually female) may see her options as welfare-no work, work-no welfare, or a combination of work and welfare. Given these alternatives, a variable representing a ratio of welfare benefits to work benefits is sufficient to proxy the choices involved.

For the AFDC-UF program, the "alternative income" options may be more numerous, they may combine in different ways, and the perceived time horizon for decisionmaking may also affect the outcome. Two major differences between AFDC-R and AFDC-UF that directly affect the "alternative income" hypothesis are: (1) the family eligible for UF has two adults, and therefore two potential workers; and (2) until passage of the Corman amendment, unemployment insurance benefits (UIB) and AFDC-UF could not be received simultaneously.

These differences raise two questions that must be more fully understood before better AFDC-UF proxies can be developed. In its broadest terms, the first question is, "what are the income sources available to poor families of unemployed male household heads"? Specifically, to what extent does reliance on wives' earnings, UIB, veteran's benefits, or possibly even access to AFDC-Incapacitated Father reduce participation in AFDC-UF? In what ways are these alternatives combined? (e.g. AFDC-UF may be more beneficial than either wives' earnings or UIB, but the combination of wives' earnings and UIB may be superior to AFDC-UF benefits - see Appendix to this Chapter). A second, closely related question is "how does AFDC-UF participation vary with pre-public assistance income?" Does the choice to forego UF benefits depend on the size of the deficit between the UF benefit level and other available income?

Both of these questions apply to the size of the AFDC-UF eligible population and the participation rate among eligibles. Underlying both of these questions is the possible difference in time perspective between a woman whose labor force participation may be constrained by the presence of young children for a relatively long period, versus a man who may view himself as temporarily unemployed, but expecting to find a job in the near future. If stigma is involved, and if some income is available from other sources, the UF-eligible family may forego its entitlement to UF benefits if it views its period of need as one of short duration.

Studies of UF recipients provide sketchy evidence that working wives may be an important factor differentiating recipients from eligible non-recipients. A Mathematica study found that UF mothers had lower full-time employment rates than other AFDC mothers; it also found that new entrants to UF were more likely than other new AFDC cases to have an unborn recipient.[27] One can infer from this that the inability of the wife to enter the labor force propels some families onto the UF caseload. Stone and Schlamp's study of low-income male-headed families also found that those on long-term assistance were less likely to have working wives than those who were never on assistance or only on assistance for a short while.[28]

Leonard Goodwin observes that "the lower the family is on the economic scale, the more its economic viability seems to depend on the wife's contribution to the family income. Perhaps one of the reasons WIN fathers had to go on welfare was the inability of their wives to earn enough money."[29] He also observes that "a striking feature of the outer-city black families in this study, who have made it out of the ghetto, is that their economic viability often depends on the joint income of husband and wife. The husbands, with only a tenth grade

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[27]Mathematica, Trends in AFDC Characteristics, op. cit.

[28]Stone & Schlamp, op. cit.

[29]Leonard Goodwin, Do The Poor Want to Work? The Brookings Institution, Washington, D. C. 1972.

education on the average, are working at jobs that are not much different from those of men in the WIN program or men still in the ghetto. The outer-city blacks, however, despite having the high level of insecurity common to poor blacks, have stayed on their jobs. And most important, they have stayed married to women who on average have an eleventh grade education and bring in almost 30 percent of family income."[30]

Even if wife's earnings alone do not sufficiently reduce the need for UF benefits, the benefit reduction rate applied to earned income in the UF program may make it more desirable to combine wife's earnings with UIB or veteran's pensions, if families are eligible for more than one program. The Appendix to this Chapter shows (for selected states) the hypothetical net income available to a family under UF or UIB, by family size and husband's previous earnings. It shows how the "trade off" between UF and UIB changes, given wife's gross monthly earnings of 0, $199, or $398. Although UF benefits tend to dominate UIB for men with low previous earnings and non-working wives, the presence of a working wife tilts the balance toward UIB. This may be an important consideration in understanding why families might choose UIB and forego UF. Even though families are no longer prohibited from receiving UF and UIB simultaneously, they may voluntarily forego receipt of UF if UIB and wife's earnings provide a comparable level of income.

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[30]Ibid p. 115.

CPS data are also used in Chapter III to study the likelihood of public assistance receipt among UF eligibles depending on the size of the income deficit. This factor was found to be important in a study of New York City welfare caseloads.[31]

In order to find better proxies with which to test the "alternative income" hypothesis in our "macro"-data model of UF caseloads, it is necessary to understand its "micro"-data foundations. Among unemployed male household heads, what proportion are income - and asset - eligible for UF? Among those eligible for UF, what factors affect actual participation? How does the level of pre-public assistance income affect the participation rate among eligibles? Given the low estimates of UF participation among eligibles, it is crucial to understand the factors that differentiate recipients from eligible non-recipients.

CPS "micro"-data can provide some answers to these questions. They can show the relative importance of various income sources - including wife's earnings, receipt of UIB, and income from asset ownership - for households with unemployed male heads. We can then use this "micro" information on factors that affect eligibility and participation to guide our search for appropriate "macro"-data analogs.

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[31] D.M. deFerranti, et. al., op. cit.

APPENDIX TO CHAPTER I

A Comparison of AFDC-UF (UF) and Unemployment Insurance Benefits (UIB) in Six States

Eligibility

Unemployed male household heads may be eligible for AFDC-UF, Unemployment Insurance Benefits (UIB), both, or neither. In states that have the UF program, AFDC-UF eligibility requirements include financial (income and asset) tests, and also require the husband to be unemployed (or working less than 100 hours a month), but to have a previous work history. Until the recently passed Corman amendment, the family could not receive federally-funded AFDC-UF during any week in which it received UIB. The Corman amendment requires unemployed male household heads applying for AFDC-UF to also apply for UIB, if they are eligible. However, if income from UIB is less than the AFDC-UF benefit level, AFDC funds can be used to supplement UIB up to UF levels.

Eligibility for UIB requires that the worker be currently unemployed, that his/her previous job was in covered unemployment, and that the worker meet minimum earnings and/or hours criteria.

It has been estimated that only about a third of the unemployed receive UIB during relatively prosperous times; about half of the

unemployed receive UIB during recessionary periods.[1] During 1967, a relatively prosperous year, of three million unemployed, only one million (33%) were UIB recipients. Another 33% were new entrants not eligible for UIB; 13% were not covered in their prior employment; and 22% were covered but not compensated (eligible unemployed filing for non-compensable waiting weeks; disqualified; not filing for benefits; exhausted benefits).[2]

Major categories of employment not covered by the unemployment insurance system include agricultural work, domestic household work, and some state and local government employment. Prior to the Employment Security Amendments of 1970 (effective January 1, 1972), the list of major areas of uncovered employment also included small firms, nonprofit organizations, state hospitals, and state colleges and universities.[3]

In a recent study of the impact of higher unemployment rates, Edward Gramlich estimated that 35% of poor male-headed families in UF states were receiving AFDC; 35% were receiving UIB. He reasoned that "since no AFDC recipient can claim unemployment insurance, this means that 70 percent of unemployed male heads of low income receive some transfer benefits, which is to say that 30 percent receive none at all."[4]

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[1]Merrill G. Murray, Income for the Unemployed - The Variety and Fragmentation of Programs, W. E. Upjohn Institute, Kalamazoo, Michigan, April 1971.

[2]Ibid.

[3]Ibid.

[4]Edward M. Gramlich, "The Distributional Effects of Higher Unemployment," Brookings Papers on Economic Activity (2:1974) pp. 293-336.

Gramlich's reasoning probably understates the proportion of poor male-headed families without any benefits. While it is true that simultaneous receipt of AFDC-UF and UIB in a given week or month was illegal during the time period covered by Gramlich's study, his data, (The Michigan Panel Study on Income Dynamics) does not give information about weekly or monthly income sources. It gives income information on an annual basis, and it is possible to receive both AFDC-UF and UIB over the course of a year, although not within the same week or month.

A Mathematica study of workers who exhausted their UIB in November 1974 (during relatively "normal" economic times) found that only about 8.2% of "white" and 16.4% of "negro and other" exhaustees were male household heads, with wife present and child(ren) under 16.[5] Therefore, the great majority of UIB exhaustees are categorically ineligible for AFDC-UF. Among those categorically eligible, about 50% of the whites and 66% of the nonwhites had incomes (excluding UIB) below the poverty line; those with incomes (including UIB) below the poverty line represented less than 25% of the whites and about 38% of the nonwhites. The Mathemetica study found that only 11.5% of its total exhaustee sample were categorically eligible (according to family composition) for UF, 6.5% of the total sample were also income eligible; and only 1.6% of the total sample

[5] Mathematica Policy Research, A Longitudinal Study of Unemployment Insurance Exhaustees, Princeton, January 1976.

would have been eligible for greater cash benefits from UF than from UIB. It concluded that UF eligibles represented only a small part of the UIB exhaustee population, but that even that small number (in relation to the size of the UIB program) might have a noticeable impact on the UF program, given the relatively small UF caseload.

Some families of unemployed male household heads are eligible for both UF and UIB; others are eligible for only one program (or none). Before the Glodgett decision in June 1975, families with dual eligibility were required (in some states) to exhaust their UIB before applying for UF. The Glodgett decision allowed families with dual eligibility to choose the program that was most beneficial, but upheld Congress's prohibition against receiving UF and UIB simultaneously. The Corman amendment requires families with dual eligibility to collect UIB, but allows UF supplementation if UIB is below the UF payment standard.

For those families with dual eligibility, it is important to understand the factors that may affect the family's decision to apply for UF. Although legally the family is no longer prohibited from receiving both, some families may still prefer to forego UF, depending on UIB levels and other income. These "trade-offs" are calculated for six states in Tables 1 - 6 below.

Calculating the Trade-Off between UF and UIB

In each of the six states to be discussed below, unemployment insurance benefits were calculated for several different hourly wage levels representing previous income from employment. Weekly benefit levels were multiplied by 4.33 in order to obtain a monthly figure comparable to UF monthly benefits. Part A of each table compares hypothetical income from UF with that from UIB, for several different levels of prior earnings and for family size ranging from one to eight dependent children. In Part A we assume that the family has no other income.

Part B of each table assumes that the wife has gross monthly earnings of $199 (the equivalent of working 20 hours a week at an hourly wage of $2.30). Using 30% of gross earnings as a rough estimate of work expenses (including income and social security taxes),[6] net monthly earnings are $139, and this figure is added to UIB levels in Part B to estimate net income from UIB and wife's earnings. Net income from UF

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[6]Robert I. Lerman uses hypothetical examples in which "taxes and work expenses alone lower the net return from increases in gross earnings by 15 - 30 percent". See his paper, "Incentive Effects in Public Income Transfer Programs," Studies in Public Welfare, Paper #4, Joint Economic Committee, Washington, 1974. His high estimate is still below the implicit estimates in the Mathematica study of AFDC caseloads: Mathematica Inc., Trends in the Characteristics of AFDC Families: A Comparison of the 1969, 1971, and 1973 AFDC Surveys, September 1975. Table VIII-2, Percent Distribution of Families With Earnings By Disregarded Employment expenses, indicates median amounts of disregarded expenses well in excess of 30% of earnings.

and wife's earnings is calculated by adding the net earned income ($139) to the UF income, which has been reduced according to the "30 and 1/3" formula.[7] The result, in five of the six states, is that total net income in Part B (UF plus wife's net earnings) is $87 higher than in part A. A separate calculation is necessary for Missouri, where earned income does not always cause a reduction in the UF grant (see discussion of Missouri in a later section).

In Part C, we assume that the wife has gross monthly earnings of $398 (the equivalent of working 40 hours a week at an hourly wage of $2.30). Again using 30% of gross earnings as a rough estimate of total work expenses (including income and social security taxes), the wife's net earnings would be $278 a month. This is the amount added to UIB in Part C. Again using the "30 and 1/3" formula, $153 is added to the UF level. Therefore, what ever advantage exists for UF in Part A is reduced in Part B and reduced even more in Part C. To see the specific trade-off involved, we must look at UF and UIB benefit levels in each of the six states.[8]

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[7]According to the "$30 and 1/3" formula,

UF Grant = Benefit Standard - [2/3 (Gross Earnings - $30) - Work Expenses]

= Benefit Standard - [2/3 ($199 - 30) - $60]

therefore, UF Grant = Benefit Standard - $52, and the new net income (UF Grant and Net Earnings) equals Benefit Standard + $87.

[8]The UF and UIB payment schedules were obtained by telephone from each of the state's Departments of Public Welfare and Employment Security.

Massachusetts

Massachusetts has relatively high UF benefits, and a relatively high maximum UIB payment. The maximum is paid based on previous earnings of $5.40 an hour. It is also the only state of the six described here that has a UIB dependent's allowance ($6 a week per dependent child, as long as the total dependent's allowance does not exceed 50% of the weekly benefit allowance based on prior earnings). UF benefit levels are the sum of the UF monthly grant plus one-third of the UF quarterly grant.

If the unemployed husband were eligible for maximum UIB, then even without any earnings from the wife, UIB would provide larger cash benefits than UF for families with six children or less. At previous earnings of $4.00/hr., UIB dominates UF only for small families (one or two children). At previous earnings of $2.50 or $3.50 an hour, UF dominates UIB for any size family. It should also be noted that $2.50/hr. is the equivalent of $433 gross monthly earnings for full time work. At this wage level, a full-time working father with more than two children who becomes unemployed would be eligible for UF benefits larger than his previous gross monthly earnings. Thus, at this low wage level UF dominates UIB and also dominates earnings.

If the wife has gross earnings of $199/month (net earnings of $139/month), combined income from wife's net earnings (WE) and maximum UIB completely dominates the UF-WE combination through families with eight children. At previous earnings of $4.00/hr. UIB-WE dominates for families with four children or less. Even at previous earnings of $3.50/hr. one

TABLE I

AFDC-UF and Unemployment Insurance Benefits, Combined With Wife's Earnings, By Number of Children and Husband's Previous Earnings, Massachusetts, 1976

Number of Children	AFDC-UF	Unemployment Insurance Benefits: Previous Earnings 2.50/hr.	Previous Earnings 3.50/hr.	Previous Earnings 4.00/hr.	Previous Earnings 5.40/hr. (max.)
	a. Wife's net earnings = 0				
1	$ 329	$ 242	$ 329	$ 372	$ 494
2	385	268	355	398	520
3	441	294	381	424	546
4	498	320	407	450	572
5	555	325	433	476	598
6	611	325	455	502	624
7	668	325	455	520	650
8	724	325	455	520	675
	b. Wife's net earnings = $139/month				
1	416	381	468	511	633
2	472	407	494	537	659
3	528	433	520	563	685
4	585	459	546	589	711
5	642	464	572	615	739
6	698	464	594	641	763
7	755	464	594	659	789
8	811	464	594	659	814
	c. Wife's net earnings = $278/month				
1	482	520	607	650	772
2	538	546	633	676	798
3	594	572	659	702	824
4	651	598	685	728	850
5	708	603	711	754	876
6	764	603	733	780	906
7	821	603	733	798	928
8	877	603	733	798	953

and two child families have greater income from UIB-WE than UF-WE. Only at previous earnings of $2.50/hr. does UF-WE dominate UIB-WE completely. If the wife has gross earnings of $398/month (net earnings of $278/month), then even with UIB based on husband's previous earnings of $2.50 an hour, small families (one or two children) have greater income from UIB-WE than from UF-WE.

Thus, in Massachusetts, a family with two children and a non-working wife would be financially better off on AFDC-UF unless the father's previous earnings were $4.00/hr. or more. If, however, the wife had net earnings of $278/month, (the equivalent of full-time work at $2.30/hr.), a family of this size would be better off on UIB, even if the father's previous earnings were $2.50/hr.

New York

New York has relatively high UF benefits. The UIB maximum (reached at an hourly wage of $4.75) is lower than Massachusetts, and New York does not have a dependent's allowance. New York's AFDC-UF payment schedule is composed of a basic grant that is standard throughout the state, plus a maximum rental allowance that varies by county. A weighted average of rent allowances in the upstate urban counties (where the bulk of the UF caseload is found) was computed in order to obtain a standard UF payment level for the state.

With a nonworking wife, the family's benefits from UF will be higher

TABLE 2

AFDC-UF and Unemployment Insurance Benefits, Combined With Wife's Earnings, By Number of Children and Husband's Previous Earnings, New York, 1976

Number of Children	AFDC-UF	Unemployment Insurance Benefits: Previous Earnings 2.50/hr.	Previous Earnings 3.50/hr.	Previous Earnings 4.00/hr.	Previous Earnings 4.75/hr. (max.)
	a. Wife's net earnings = 0				
1	$ 355	$ 217	$ 303	$ 346	$ 411
2	423	217	303	346	411
3	493	217	303	346	411
4	552	217	303	346	411
5	610	217	303	346	411
6	665	217	303	346	411
7	715	217	303	346	411
8	765	217	303	346	411
	b. Wife's net earnings = $139/month				
1	442	356	442	485	550
2	510	356	442	485	550
3	580	356	442	485	550
4	639	356	442	485	550
5	697	356	442	485	550
6	752	356	442	485	550
7	802	356	442	485	550
8	852	356	442	485	550
	c. Wife's net earnings = $278/month				
1	508	495	581	624	689
2	576	495	581	624	689
3	646	495	581	624	689
4	705	495	581	624	689
5	763	495	581	624	689
6	818	495	581	624	689
7	868	495	581	624	689
8	918	495	581	624	689

than those from UIB in virtually all cases.[9] The single exception is a family with only one child in which the husband receives the UIB maximum. Even if the wife's net earnings are $139/month, a two-child family will have higher income from UF-WE than from UIB-WE unless the husband receives the UIB maximum. With wife's net earnings of $278/month, two-child families will receive higher income from UIB-WE if husband's previous earnings were $3.50/hr. or more. Larger families (four or more children) will find that UF-WE completely dominates UIB-WE. Compared with Massachusetts, New York shows a greater tendency for UF to dominate UIB. New York's UF benefit levels tend to be higher than Massachusetts', and their UIB levels tend to be lower (because of a lower maximum payment as well as the absence of a dependent's allowance).

California

California's UF payment schedule is relatively high, though lower than New York's and somewhat lower than Massachusetts'. The difference between the California and Massachusetts payment schedules is greater for large families. California's UIB schedule reaches its maximum at a relatively high wage (6.36/hr.), but benefits in the intermediate range ($3.50 - 4.00/hr.) are below those in New York.

With a nonworking wife, the family's benefits from UF would be

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[9] As was the case in Massachusetts, in New York an unemployed father with more than two children is eligible for UF benefits higher than his gross earnings if his previous wage was $2.50/hour.

TABLE 3

AFDC-UF and Unemployment Insurance Benefits, Combined With Wife's Earnings, By Number of Children and Husband's Previous Earnings, California, 1976

Number of Children	AFDC-UF	Unemployment Insurance Benefits: Previous Earnings 2.50/hr.	Previous Earnings 3.50/hr.	Previous Earnings 4.00/hr.	Previous Earnings 6.36/hr. (max.)
	a. Wife's net earnings = 0				
1	$ 319	$ 221	$ 286	$ 316	$ 450
2	379	221	286	316	450
3	433	221	286	316	450
4	487	221	286	316	450
5	534	221	286	316	450
6	581	221	286	316	450
7	628	221	286	316	450
8	675	221	286	316	450
	b. Wife's net earnings = $139/month				
1	406	360	425	455	589
2	466	360	425	455	589
3	520	360	425	455	589
4	574	360	425	455	589
5	621	360	425	455	589
6	668	360	425	455	589
7	715	360	425	455	589
8	762	360	425	455	589
	c. Wife's net earnings = $278/month				
1	472	499	564	594	728
2	532	499	564	594	728
3	586	499	564	594	728
4	640	499	564	594	728
5	687	499	564	594	728
6	734	499	564	594	728
7	781	499	564	594	728
8	828	499	564	594	728

greater than UIB if husband's previous earnings were $4.00/hr. or less. Even if the husband were entitled to the UIB maximum, families with four children or more would receive greater benefits from UF. If the wife had net earnings of $278/month, two-child families would have higher income from UIB-WE than UF-WE if husband's previous earnings were $3.50/hr. or more; one-child families would have higher income from UIB-WE than UF-WE even if husband's previous earnings were $2.50/hr.

Colorado

Colorado has relatively high UIB levels since it pays a higher proportion of previous earnings (60%) than do many other states. Its UF schedule (the higher "winter rates" are used here) is relatively low. If the wife has no earnings, a one-child family is better off on UIB even if the father's previous wages were as low as $2.50/hr.; two and three-child families would be better off on UIB if husband's previous earnings were $3.50/hr. or more. With wife's net earnings of $139/month, four-child families would also receive higher income from UIB-WE than UF-WE if husband's previous earnings were $3.50/hr. or more.

If the wife had net earnings of $278/month, a one-child family would no longer be eligible for UF. Two and three-child families would continue to be eligible for UF, but their income from UIB-WE would be greater than that from UF-WE, even if the husband's previous wage was as low as $2.50. If his previous wage was $3.50, even six-children families would have marginally higher income from UIB-WE. If the husband received the UIB maximum, UIB-WE would totally dominate UF for all families with one to eight children.

TABLE 4

AFDC-UF and Unemployment Insurance Benefits, Combined With Wife's Earnings, By Number of Children and Husband's Previous Earnings, Colorado, 1976

Number of Children	AFDC-UF	Unemployment Insurance Benefits: Previous Earnings 2.50/hr.	Previous Earnings 3.50/hr.	Previous Earnings 4.00/hr.	Previous Earnings 4.75/hr. (max.)
	a. Wife's net earnings = 0				
1	$ 248	$ 260	$ 364	$ 416	$ 494
2	305	260	364	416	494
3	356	260	364	416	494
4	409	260	364	416	494
5	448	260	364	416	494
6	488	260	364	416	494
7	525	260	364	416	494
8	565	260	364	416	494
	b. Wife's net earnings = $139/month				
1	335	399	503	555	633
2	392	399	503	555	633
3	443	399	503	555	633
4	496	399	503	555	633
5	535	399	503	555	633
6	575	399	503	555	633
7	612	399	503	555	633
8	652	399	503	555	633
	c. Wife's net earnings = $278/month				
1	*	538	642	694	772
2	458	538	642	694	772
3	509	538	642	694	772
4	562	538	642	694	772
5	601	538	642	694	772
6	641	538	642	694	772
7	678	538	642	694	772
8	718	538	642	694	772

*Not eligible for UF

Utah

Utah's UIB payments are the same as New York's for intermediate wage levels, but Utah has a higher maximum benefit (reached at $5.50/hr.) Utah's UF benefits are lower than New York's, but UF still tends to dominate UIB at the lower wage levels.

If the wife has no net earnings, UF dominates UIB completely for husbands with previous earnings of $2.50/hr. Even if the husband receives the UIB maximum, families with four or more children will have a larger income from UF than from UIB. A two-child family will be better off with UF unless the husband's previous earnings were $4.00/hr. or more.

If the wife had net earnings of $139/month, a two-child family would still be better off with UF-WE if the husband's previous earnings were $2.50/hr. At $3.50/hr. or more, the family would have higher income from UIB-WE. If the wife had net earnings of $278/month, a two-child family would have higher income from UIB-WE than from UF-WE even if the husband's previous wage were $2.50/hr.[10]

A three-child family would have higher income from UIB-WE if husband's previous earnings were $3.50 or more. If the husband received the UIB maximum, UIB-WE would be greater than UF-WE for all families with 1 - 8 children.

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[10]This family may not be eligible for UF. Utah regulations allow a flat $30 for work related expenses; they allow higher amounts only if they can be proven. Depending on how rigidly Utah's regulations regarding work expenses are enforced, this family's net income may be above the eligibility level.

TABLE 5

AFDC-UF and Unemployment Insurance Benefits, Combined With Wife's Earnings, By Number of Children and Husband's Previous Earnings, Utah, 1976

Number of Children	AFDC-UF	Unemployment Insurance Benefits: Previous Earnings 2.50/hr.	Previous Earnings 3.50/hr.	Previous Earnings 4.00/hr.	Previous Earnings 5.50/hr. (max.)
	a. Wife's net earnings = 0				
1	$ 275	$ 217	$ 303	$ 346	$ 476
2	333	217	303	346	476
3	408	217	303	346	476
4	478	217	303	346	476
5	505	217	303	346	476
6	532	217	303	346	476
7	559	217	303	346	476
8	585	217	303	346	476
	b. Wife's net earnings = $139/month				
1	362	356	442	485	615
2	420	356	442	485	615
3	495	356	442	485	615
4	565	356	442	485	615
5	592	356	442	485	615
6	619	356	442	485	615
7	646	356	442	485	615
8	672	356	442	485	615
	c. Wife's net earnings = $278/month				
1	*	495	581	624	754
2	486**	495	581	624	754
3	561	495	581	624	754
4	631	495	581	624	754
5	658	495	581	624	754
6	685	495	581	624	754
7	712	495	581	624	754
8	738	495	581	624	754

*Not eligible for UF
**Probably not eligible for UF

Missouri

Missouri's UIB payments are higher than the other five states for those with previous earnings of $2.50/hr.; their maximum payment is lower than the other states. The maximum is reached at the relatively low level of $3.27/hr. Missouri's UF program is state-financed and has relatively low benefit levels.

If the wife has no earnings, families with fewer than seven children will have higher income from UIB than from UF if the husband received the UIB maximum. Even if his previous earnings were $2.50/hr., families with fewer than five children will be better off on UIB.

Missouri's maximum UF payments are well below the state's full standard of need. Earned income causes a reduction in the UF payment only after total net income rises above the full standard of need. Therefore, if net earned income is less than the difference between the need standard and the payment standard, the UF grant will not be reduced; if net earned income is larger than the difference between the need standard and the payment standard, the UF grant is reduced according to the "30 and 1/3" formula.

In part b, net earnings of $139/month are not sufficiently large to cause a reduction in the UF grant. Therefore, each number in part b is $139 larger than its corresponding number in part a, and wife's earnings do not affect the tradeoff. In part C, net earnings of $278/month are large enough to cause a reduction in the UF grant, and wife's earnings do affect the tradeoff between UF and UIB. A family with fewer than seven

TABLE 6

AFDC-UF and Unemployment Insurance Benefits, Combined With Wife's Earnings, By Number of Children and Husband's Previous Earnings, Missouri, 1976

Number of Children	AFDC-UF	Unemployment Insurance Benefits: Previous Earnings 2.50/hr.	Unemployment Insurance Benefits: Previous Earnings 3.27/hr. (max.)
	a. Wife's net earnings = 0		
1	$ 138	$ 281	$ 368
2	173	281	368
3	208	281	368
4	246	281	368
5	283	281	368
6	321	281	368
7	358	281	368
8	395	281	368
	b. Wife's net earnings = $139/month		
1	277	420	507
2	312	420	507
3	347	420	507
4	385	420	507
5	422	420	507
6	460	420	507
7	497	420	507
8	534	420	507
	c. Wife's net earnings = $278/month		
1	312	559	646
2	365	559	646
3	414	559	646
4	460	559	646
5	506	559	646
6	549	559	646
7	592	559	646
8	635	559	646

children will have more income from UIB-WE than from UF-WE even if husband's previous earnings were only $2.50/hr. If the husband received the UIB maximum, UIB-WE would provide greater income than UF-WE for all families of 1 - 8 children.

Conclusion

The foregoing examination of UF and UIB levels in six states has shown how families of varying size and husband's previous wage levels would fare under either program. Their cash benefits from each program, assuming no earnings from the wife, were compared with their total income from each program assuming a combination of transfer income and wife's earnings.

Table 7 shows the degree to which UF dominates UIB in each of the six states. UIB provides greater income in only one of our 32 hypothetical comparisons for a New York family with a nonworking wife. Even combined with wife's net earnings of $278/month, UIB provides greater income in only 7 of the 32 comparison. Each state has a unique pattern, but they all show less UF domination as wife's net earnings grow. New York, California, and Utah show greater UF domination than Massachuetts, Colorado, or Missouri.

These hypothetical comparisons accounted for cash benefits only. UF families would automatically be eligible for food stamps; UIB families probably would also be eligible for food stamps, but would not receive them automatically. More importantly, UF families are automatically

TABLE 7

Summary of UF-UIB Comparisons in Six States

State	Total Number of UF-UIB Comparisons	Number of comparisons in which income from UIB (alone or combined with wife's earnings) exceeded UF (alone or combined with wife's earnings)		
		Wife's net earnings = 0	Wife's net earnings = $139/month	Wife's net earnings = $278/month
New York	32	1	3	7
California	32	3	6	11
Utah	32	6	9	16
Massachusetts	32	8	14	21
Colorado	32	14	18	24
Missouri	16	11	11	14

eligible for Medicaid. The annual value of Medicaid benefits may be at least several hundred dollars, and those benefits may not be available to UIB families.

If receipt of UF is stigmatizing while receipt of UIB is not, these tables can be used to show how much financial sacrifice accompanies the decision to forego UF. If the wife is working, the degree of financial sacrifice become smaller, ceteris paribus. The combination of UIB and wife's earnings may provide greater income than UF and earnings. Even in those cases where "UF-earnings" provide larger income, the family may believe that the difference between "UF-earnings" income and "UIB-earnings" income is not sufficiently large to warrant the stigma, loss of control, or other feelings of unworthiness associated with UF enrollment. This willingness to sacrifice some potential income may also result from the expectation that the duration of the crisis will be relatively short - that within a few weeks or months, the husband will again be earning some income.

These tables show the "trade-off" between UF and UIB, depending on family size, husband's previous earnings, and wife's earnings. Federal law no longer requires families to choose between UF and UIB. The Corman amendment requires UF applicants to apply for UIB, and allows UF supplementation of UIB benefits up to UF guarantee levels. However, even though a choice between UF and UIB is no longer required on the "supply" side, such a choice may still be made on the "demand" side. Our contention, illustrated in the tables, is that families will often be financially

"better off" combining UIB benefits with wife's earnings than turning to UF. Even in those cases where UF provides larger benefits, the difference may not be sufficiently large to overcome the stigma associated with UF enrollment.

CHAPTER II

POOR INTACT FAMILIES: INCOME DEFICITS AND INCOME MAINTENANCE PROGRAMS

Chapter I contained information on the "trade-off" between unemployment compensation and AFDC-UF benefits and indirectly suggested one reason for the ostensibly low UF participation rates (at least previous to the Corman amendment). The present chapter continues our inquiry into participation rates by utilizing the 1971-1975 Current Population Survey data to study the sources of income of low-income intact families.

I. Pre-Assistance Income Levels of Poor Intact Families

Our intact family population, drawn from the 1971-75 CPS Public Use Sample, consists of all husband-wife families with children under 18, in which the father is non-aged, non-disabled, and in the labor force. A low-income intact family population was defined as all intact families with incomes not more than twice their respective poverty lines.

We estimated the number of intact families with pre-assistance incomes (i.e., family income minus "public assistance or welfare") below 67%, 75%, 100% and 125% of their respective poverty lines. Table 2.1 shows the number of intact families with pre-assistance incomes below each level, as well as their proportion of low income intact families and all intact families.

Table 2.1

Number of intact families with Pre-Assistance Income Below 67%, 75%, 100%, and 125% of Their Poverty Cutoffs; Percent of Low Income Intact Families and All Intact Families with Pre-Assistance Incomes Below Specified Levels, 1970-1974[1]

	Number of Intact Families[4] with Pre-Assistance Income[2] Below				Percent of Low Income Intact Families[5] with Pre-Assistance Income Below				Percent of All Intact Families with Pre-Assistance Income Below			
Year	.67*Cutoff[3]	.75*Cutoff	1.00*Cutoff	1.25*Cutoff	.67*Cutoff	.75*Cutoff	1.00*Cutoff	1.25*Cutoff	.67*Cutoff	.75*Cutoff	1.00*Cutoff	1.25*Cutoff
1970	542,918	675,136	1,269,227	2,142,571	8.2%	10.2%	19.1%	32.3%	2.3%	2.9%	5.4%	9.1%
1971	577,036	729,064	1,366,843	2,259,595	8.7	11.0	20.6	34.1	2.4	3.1	5.8	9.5
1972	572,700	703,984	1,283,644	2,074,259	9.9	12.1	22.1	35.8	2.4	3.0	5.4	8.7
1973	476,134	566,220	1,066,975	1,749,573	9.3	11.0	20.8	34.1	2.0	2.4	4.5	7.4
1974	553,166	673,549	1,166,628	1,905,910	9.9	12.0	20.9	34.1	2.4	2.9	5.0	8.2

Notes:

1. Table computed from 1971-75 CPS Public Use Sample tapes.
2. Pre-Assistance Income = FAmily Income minus welfare or public assistance.
3. Cutoff = Income level at which the family would be at the poverty margin.
4. Intact Family = Husband-wife families with children under 18, in which husband is nonaged, nondisabled, and in the labor force.
5. Low Income Family = Intact family with income no more than twice its poverty cutoff level.

In each year between 1970-1974, over a million intact families fell below the official poverty line. The numbers fluctuate with the yearly fluctuation in unemployment rates - rising during the recession of 1971, falling during the 1972-73 recovery, and rising again with the onset of the current recession. In 1974, about 21% of the low-income intact families had pre-assistance income below the poverty line; they represented 5% of all intact families.

II. Income Deficit of Poor Intact Families

CPS data can show not only how many intact families are poor, but also how poor they are. We can estimate the average income deficit - the difference between a family's specified cutoff level (67%, 75%, 100%, or 125% of its poverty line) and its pre-assistance income -- for all families with incomes below the specified cutoffs. We can also estimate the expenditure that would be necessary to bring every family's income up to its specified cutoff level (see Table 2.2).

Table 2.2

Average and Total Income Deficit for Intact Families with Incomes Below 67%, 75%, 100%, and 125% of their Poverty Cutoffs, 1970-74[1]

	Average Income Deficit[2] for Intact Families with Incomes Below				Total Income Deficit[3] for Intact Families with Incomes Below			
	.67	.75	1.00	1.25*Cutoff	.67	.75	1.00	1.25*Cutoff
1970	$1,769	$1,803	$1,946	$2,141	$960,421.9	$1,217,270.2	$2,469,915.7	$4,587,244.5
1971	1,286	1,359	1,650	1,964	742,068.3	990,798.0	2,255,290.9	4,437,844.5
1972	1,469	1,568	1,846	2,160	841,296.3	1,103,846.9	2,369,606.8	4,480,399.4
1973	1,737	1,887	2,072	2,374	827,044.8	1,068,457.1	2,210,772.2	4,153,486.3
1974	1,791	1,911	2,286	2,603	990,720.3	1,287,152.1	2,666,911.6	4,961,083.7

Notes:

1. Table calculated from CPS Public Use Sample tapes, 1971-75.
2. Average Income Deficit = Average Difference Between Specified Cutoff Level and Pre-Assistance Income.
3. Total Income Deficit = Average Income Deficit*Number of Families below Specified Cutoff Level.

This estimated expenditure would be equivalent to the expenditure necessary for a national program to bring all intact families up to a specified income level. However, these estimates provide only a rough "ballpark" figure for the average and total income deficit. They do not represent estimated expenditures for a realistic policy alternative, since they assume no labor supply response even though they provide no income disregards or other work incentives.

The average income deficit reflects the impact of both unemployment and inflation on poor intact families. Compared with poverty line income, the average deficit grew by almost $200 each year since 1971, and was nearly $2300 in 1974. Total expenditures necessary to "wipe out" the income deficit and bring all poor intact families up to the poverty line (under the poor assumption that such a program would have no labor supply impact despite its lack of work incentives and income disregards) would have been about $2.2-2.5 billion between 1970 and 1973. The cost would have risen sharply from $2.21 billion in 1973 to $2.67 billion in 1974, as a result of high unemployment and labor inflation.

It should again be emphasized that these estimated expenditures are intended to provide a rough benchmark regarding the magnitude of the total income deficit -- they are not intended as a program proposal. Moreover, they only apply to healthy, non-aged intact families, and leave out single persons, childless couples, and single parent families. It may be useful to compare the estimates in Tables 2.1 and 2.2 which include all poor intact families, with those presented in Tables 2.3 and 2.4, which include only those poor intact families whose head did not work full time year round.

Table 2.3

Number of intact families (excluding full-time full-year working fathers) with Pre-Assistance Income Below 67%, 75%, 100% and 125% of their Poverty Cutoffs; Percent of Low Income Intact Families and All Intact Families with Pre-Assistance Incomes Below Specified Levels, 1970-1974

	Number of Intact Families (excluding full-time full-year working fathers) with Pre-Assistance Income Below				Percent of Low Income Intact Families with Pre-Assistance Income (excluding full-time full-year working fathers) below				Percent of All Intact Families with Pre-Assistance Income (excluding full-time full-year working fathers) below			
Year	.67*Cutoff	.75*Cutoff	1.00*Cutoff	1.25*Cutoff	.67*Cutoff	.75*Cutoff	1.00*Cutoff	1.25*Cutoff	.67*Cutoff	.75*Cutoff	1.00*Cutoff	1.25*Cutoff
1970	281,351	354,832	622,134	946,284	4.2%	5.4%	9.4%	14.3%	1.2%	1.5%	2.7%	4.0%
1971	322,143	386,974	669,734	994,675	4.9	5.8	10.1	15.0	1.4	1.6	2.8	4.2
1972	316,977	376,637	649,578	931,372	5.5	6.5	11.2	16.1	1.3	1.6	2.7	3.9
1973	271,889	312,212	546,287	763,349	5.3	6.1	10.7	14.9	1.2	1.3	2.3	3.2
1974	345,481	413,504	645,315	954,172	6.2	7.4	11.5	17.1	1.5	1.8	2.8	4.1

III. Exclusion of Full-Time Year-Round Workers

Working poor intact families are generally excluded from coverage in federal income maintenance programs (for example, current UF regulations exclude fathers who work more than 100 hours a month). To see the impact of this exclusion, we can compare Tables 2.1 and 2.2 with Tables 2.3 and 2.4 which exclude families with full-time full-year working fathers. Table 2.1 represents the number of needy intact families who would be eligible for aid if their pre-assistance incomes were below the specified cutoff levels; Table 2.3 shows how those numbers would be reduced if families with full-time full-year working fathers were excluded from coverage. At the poverty level cutoff, the exclusion of the working poor would reduce the number of eligible families by half. Similarly, the expenditure needed to wipe out the total income deficit (See Table 2.4) would also be reduced by 40-50%.

Table 2.4

Average and Total Income Deficit for Intact Families (excluding those with full-time full-year working fathers) with Incomes Below 67%, 75%, 100% and 125% of their Poverty Cutoffs, 1970-74

	Average Income Deficit for Intact Families (excluding those with full-time full-year working fathers) with Income Below				Total Income Deficit for Intact Families excluding those with full-time full-year working fathers) with Income Below			
Year	.67*Cutoff	.75*Cutoff	1.00*Cutoff	1.25*Cutoff	.67*Cutoff	.75*Cutoff	1.00*Cutoff	1.25*Cutoff
					(000's)	(000's)	(000's)	(000's)
1970	$1,629	$1,659	$1,928	$2,270	$458,320.8	$588,666.3	$1,199,474.3	$2,148,064.6
1971	1,347	1,473	1,784	2,187	433,926.6	570,012.7	1,194,805.4	2,175,354.2
1972	1,708	1,840	2,104	2,565	541,396.7	693,012.1	1,366,712.1	2,388,969.1
1973	1,537	1,742	2,039	2,608	417,893.4	543,873.3	1,113,879.1	1,990,814.1
1974	1,951	2,092	2,591	3,009	674,033.4	865,050.4	1,672,011.1	2,871,103.5

The current UF program recognizes intact families' income needs arising from unemployment only. Our estimates show that this view of needy intact families is too narrow, and necessarily excludes about half of the total number of needy intact families. A program that provides aid to all needy intact families would have to take into account the (approximately) 50% working poor, as well as the 50% unemployed.

IV. Labor Force Behavior of Wives in Low Income Intact Families

CPS data provide a "snapshot" of labor force status in March of every year. Among low income intact families, as among married women generally, wives with pre-school children are less likely to be in the labor force.

Table 2.5 shows that wives in families with income between 150% and 200% of their poverty line are more likely to be in the labor force than those with family income 100%-150% of their poverty line. The latter in turn are more likely to be in the labor force than those with family

Table 2.5

Percent of Wives in Paid Labor, By Husband's Employment Status, Previous Year's Income, and Presence of Young Children, March of each year, 1971-1975

Percent of Wives in Low Income Intact Families who were in the paid Labor Force

	with children under 6 and Income						without children under 6 and Income					
	At Poverty Cutoff or Below		Above Poverty Cutoff but less than 1.5*Cutoff		Above 1.5*Cutoff but less than 2.0*Cutoff		At Poverty Cutoff or Below		Above Poverty Cutoff but less than 1.5*Cutoff		Above 1.5*Cutoff but less than 2.0*Cutoff	
Date	Husband Working	Husband Looking for Work	Husband Working	Husband Looking for Work	Husband Working	Husband Looking for Work	Husband Working	Husband Looking for Work	Husband Working	Husband Looking for Work	Husband working	Husband Looking for Work
March 1971	18.0%	19.5%	23.3%	35.3%	25.1%	35.4%	29.7%	30.2%	35.4%	41.3%	38.1%	52.8%
March 1972	20.5	29.3	24.8	27.7	24.2	33.0	23.5	42.1	33.2	39.3	38.1	46.4
March 1973	21.6	19.9	21.7	38.8	25.4	32.9	30.3	35.4	31.4	60.4	38.8	46.5
March 1974	16.2	24.0	26.8	31.1	27.2	19.5	30.7	32.6	38.1	44.5	34.6	56.0
March 1975	19.9	22.7	24.6	29.9	28.1	33.1	31.4	25.3	36.6	53.3	39.8	51.7

income below the poverty line. There are a number of possible explanations, including 1) a working wife's income might allow an otherwise poverty-level family to climb to a higher income category, or 2) wives in poverty level families might have lower expected market wages than other wives making unpaid housework a more rational or attractive choice for them.

For those with young children and without, and for each income category, Table 2.5 shows that wives in low income intact families are far more likely to be in the labor force if their husbands are unemployed than if they are working.

V. Receipt of Unemployment Insurance Benefits and/or Public Assistance Among Low Income Intact Families

A large majority of intact needy families receive no public assistance (PA) or unemployment insurance benefits (UIB). The working poor are generally excluded from both programs; some of the unemployed poor are ineligible for UIB; many of the unemployed poor are ineligible for UF because they live in states without UF programs.

Table 2.6 shows the percent of intact families at each specified cutoff level who receive UIB only, PA only, both UIB and PA, or neither UIB or PA. Although prior to passage of the Corman amendment it was illegal for families to receive UF and UIB in the same week, our CPS data refer to receipt of PA or UIB at some time during the year. Therefore, it was quite legal and entirely possible for a family to have received both.

Table 2.6

Percent of Low Income Intact Families who received Unemployment Insurance Benefits (UIB) and/or Public Assistanct (PA), by pre-assistance income, 1970-74

1970	No PA No UIB	Received UIB No PA	Received PA No UIB	Received PA and UIB
All Low Income Intact Families	82.9	14.0	2.2	0.9
Income Below .67*Cutoff	79.4	7.3	10.6	2.7
Income Below .75*Cutoff	78.8	8.5	9.6	3.1
Income Below 1.00*Cutoff	78.2	11.8	7.4	2.6
Income Below 1.25*Cutoff	79.7	12.8	5.5	2.0
Income Above 1.25*Cutoff (but below 2.00*Cutoff)	84.4	14.6	0.7	0.3
1971				
All Low Income Intact Families	82.2	14.2	2.4	1.2
Income Below .67*Cutoff	75.4	8.7	14.0	2.0
Income Below .75*Cutoff	75.6	9.4	13.0	2.1
Income Below 1.00*Cutoff	76.6	11.9	8.7	2.8
Income Below 1.25*Cutoff	78.8	12.3	6.2	2.7
Income Above 1.25*Cutoff (but below 2.00*Cutoff)	84.0	15.2	0.5	0.3
1972				
All Low Income Intact Families	83.7	12.2	3.1	1.0
Income Below .67*Cutoff	72.1	10.3	14.4	3.2
Income Below .75*Cutoff	73.2	10.1	13.9	2.8
Income Below 1.00*Cutoff	77.1	11.5	9.4	2.0
Income Below 1.25*Cutoff	79.6	11.9	7.1	1.4
Income Above 1.25*Cutoff (but below 2.00*Cutoff)	86.0	12.4	0.9	0.7
1973				
All Low Income Intact Families	84.6	11.9	2.9	0.7
Income Below .67*Cutoff	76.2	8.0	14.4	1.3
Income Below .75*Cutoff	77.5	7.9	13.6	1.1
Income Below 1.00*Cutoff	78.4	9.6	10.7	1.3
Income Below 1.25*Cutoff	81.0	10.6	7.2	1.2
Income Above 1.25*Cutoff (but below 2.00*Cutoff)	86.4	12.6	0.6	0.4
1974				
All Low Income Intact Families	80.9	15.2	2.9	1.0
Income Below .67*Cutoff	70.9	12.8	14.3	2.0
Income Below .75*Cutoff	72.4	12.5	13.2	1.9
Income Below 1.00*Cutoff	74.5	14.0	9.8	1.7
Income Below 1.25*Cutoff	76.0	15.3	7.0	1.6
Income Above 1.25*Cutoff (but below 2.00*Cutoff)	83.4	15.1	0.8	0.7

About three-fourths of the intact families with pre-assistance incomes below the poverty line received neither UIB nor PA; only 2 - 3% received both UIB and PA. Table 2.7 shows additional information on PA recipients by their pre-assistance income level.

Table 2.7

Percent of Intact Families receiving Public Assistance (PA)

by Pre-Assistance Income Below 67%, 75%, 100% and 125%

of their Poverty Cutoff, 1970-74

Percent of intact families with income below specified cutoff who received public assistance

Year	.67*Cutoff	.75*Cutoff	1.00*Cutoff	1.25*Cutoff
1970	13.3%	12.7%	10.0%	7.5%
1971	16.0	15.0	11.5	9.0
1972	17.6	16.7	11.4	8.6
1973	15.8	14.7	12.0	8.5
1974	16.3	15.1	11.5	8.6

Only 10-12% of intact families with pre-assistance incomes below the poverty line received any public assistance between 1970 and 1974. Even at lower income levels, recipients represent a small minority of needy intact families - less than 17% with incomes below 75% of their poverty line; less than 18% of those below 67% of their poverty line. These figures reflect current program characteristics, including lack of

nationwide UF coverage, exclusion of working poor families, and ineligibility of needy families in states with low benefit levels.

Table 2.8 shows the distribution of PA families by pre-assistance income. Of all low income intact families who received PA, between 1970 and 1974, about two-thirds had pre-assistance incomes below the poverty line; 15-25% had pre-assistance incomes above 125% of the poverty line. To some extent, this anomaly is a result of the differences in accounting periods; CPS data refers to yearly income, while PA eligibility is on a monthly basis. It is entirely possible for a family to be eligible for PA in a given month, but have greater income and become ineligible a few months later (or earlier). However, the same program characteristics (UF non-universality, exclusion of working poor, low benefit levels in some states) that are responsible for the large gaps in coverage indicated in Table 2.7 also lead to the inequities in the distribution of PA funds shown in Table 2.8.

Table 2.8

Distribution of Intact Public Assistance FAmilies by Pre-Assistance Income, 1970-74

	Percent of All Low-Income Intact Families Receiving Public Assistance who had Pre-Assistance Incomes Below			
Year	.67*Cutoff	.75*Cutoff	1.00*Cutoff	1.25*Cutoff
1970	35.4%	41.7%	62.1%	78.8%
1971	38.7	45.8	65.8	84.9
1972	42.9	49.9	61.9	75.3
1973	41.2	45.6	70.3	81.3
1974	41.4	46.5	61.5	75.2

Another indication of low benefit levels is that among intact families who received PA between 1970 and 1974, 61-71% had pre-assistance incomes below the poverty line; but 43-52% had post-assistance incomes that were still below the poverty line. Table 2.9 shows the distribution of intact public assistance families and their post-assistance income.

Table 2.9

Distribution of Intact Public Assistance Families by Post-Assistance Income, 1970-74

	Percent of All Low-Income Intact Families Receiving Public Assistance who had Post-Assistance Income		
Year	Below Cutoff	Between Cutoff and 1.5*Cutoff	Above 1.5*Cutoff
1970	45.0%	34.5%	20.5%
1971	47.1	39.4	13.5
1972	43.3	33.0	23.7
1973	51.3	34.9	13.8
1974	48.0	31.6	20.4

VI. Selected Characteristics of Low Income Intact Families Receiving UIB or PA

One of several characteristics that distinguish PA recipients from non-recipients (and from UIB recipients) among low income intact families is the percent of families with child(ren) under 6. Table 2.10 shows that 60-62% of all low income intact families have children under 6. Differences between UIB recipients and non-recipients are small, exceeding

Table 2.10

Percent of intact families with child(ren) under 6, for all low-income intact families, UIB Recipients and Non-Recipients, and PA Recipients and Non-Recipients, 1970-74

Year	Percent of intact families with children under 6				
	All low-income intact families	UIB Recipients	UIB Non-Recipients	PA Recipients	PA Non-Recipients
1970	61.3%	64.4%	60.8%	73.9%	60.9%
1971	60.8	60.2	60.9	72.6	60.4
1972	62.0	64.3	64.3	73.3	61.5
1973	60.8	61.4	60.7	72.0	60.4
1974	60.5	58.4	60.9	67.5	60.3

3 percentage points in only one year between 1970 and 1974. Differences between PA recipients and non-recipients are rather large; about 12 percentage points in 4 of the 5 years. The far greater proportion of families with young children among PA recipients provides some (albeit weak) support for the notion that a large majority of intact public assistance families may be experiencing a life cycle phenomenon - the presence of young children may reduce the wife's ability to enter the paid labor force, and the resulting one-earner family may be less able to withstand temporary economic adversity. This family life cycle phenomenon is tested further in Chapter III.

Table 2.11 shows that wives in intact PA families are likely to have much smaller earnings, on average, than all wives in low income intact families (both because earnings among those in the workforce tend to be smaller and because a smaller proportion of PA wives are in the workforce). Conversely, wives in UIB families tend to have somewhat higher average earnings than wives in all low-income intact families. While it is impossible to sort out cause-and-effect conclusions from this table (i.e., does the lack of a working wife cause the family to apply for public assistance or does the receipt of public assistance cause the wife to reduce her work effort?) it does seem clear that there is a difference between the role of the working wife in UIB families versus PA families.

Table 2.11

Wife's average earnings*, for all wives in low income intact families, and in those families receiving UIB or PA

	Wife's average earnings*		
Year	All low-income Intact Families	Intact Families Receiving UIB	Intact Families Receiving PA
1970	$527	$589	$238
1971	535	561	267
1972	582	627	431
1973	626	580	289
1974	740	850	386

*Wife's average earnings includes all wives in its base - those with earnings as well as those without.

Table 2.11 reflects both lower earnings and lower labor force participation rates among wives in PA families. To see only the difference in labor force participation rates between PA wives and UIB wives, Table 2.12 provides information on the percent of wives with zero earnings (a proxy for the percent of wives not in the paid labor force).

Table 2.12

Percent of Wives Having Zero Earnings in Low Income Intact Families, Intact Families Receiving UIB, Intact Families Receiving PA, and by presence of children under 6, 1970-1974

	Percent of Wives with Zero Earnings in Low Income Intact Families								
	TOTAL			with children under 6			without children under 6		
Year	All	Receiving UIB	Receiving PA	All	Receiving UIB	Receiving PA	All	Receiving UIB	Receiving PA
1970	62.2%	57.8%	73.3%	64.6%	62.9%	71.3%	58.5%	48.5%	79.3%
1971	64.9	60.3	66.1	68.8	66.1	65.6	58.9	51.5	67.4
1972	62.9	64.0	63.3	65.8	65.9	61.5	58.2	60.5	68.3
1973	62.4	60.5	70.6	65.0	63.3	73.9	58.5	56.1	62.1
1974	60.4	57.1	74.5	62.7	58.3	72.6	56.8	55.3	78.5

With the exception of 1972, wives in UIB families are more likely to be in the paid labor force than all wives in low income intact families, while wives in PA families are far less likely to be working. The year 1972 may not fit the pattern because of compositional changes within each of the two groups -- Table 2.6 showed that the percent of low income intact families receiving UIB declined from the previous year, while the

percent receiving PA increased substantially. We would expect that the presence of a working wife would play a role in causing families to choose UIB in preference to PA (see the Appendix to Chapter I). While such tabular results cannot confirm the direction of causation, these findings indicate that other statistical methods may show fruitful results. These methods are explored in Chapter III.

VII. An Income Maintenance Program for Intact Families

The current AFDC-UF program excludes many needy intact families. Table 2.7 showed that only 10-12% of intact families with incomes below the poverty line received public assistance between 1970 and 1974. A program that meets the income needs of intact families more fully would have to cover working-poor as well as unemployed poor intact families in all 50 states. More adequate benefit levels would have to be established for the currently low-benefit states. Finally, work incentives would have to be preserved, through the use of proper income disregards and work incentives.

We developed a hypothetical income maintenance program that meets the criteria described above, and used it to estimate the number of eligible intact families and total costs, 1970-74. Our hypothetical income maintenance program guarantees a family 75% of its poverty line, if it has no other income. All unearned income is deductible from the grant (a benefit reduction rate of 100%). If there is one earner in the family, the first $1,200 of yearly earnings is disregarded. The next

$300 is subject to a benefit reduction rate of 45%, and each successive $500 of earnings increases the 45% benefit reduction rate by 5%, up to a maximum benefit reduction rate of 75%. If there is more than one earner, the highest earner can disregard the first $1,200, and other earners can disregard an additional $600 each.

Table 2.13 shows that about 2-3 million intact families would have been eligible for a grant in each year, 1970-74. Total expenditures would have varied from around 3.4-4.2 billion dollars, and the average grant per family would have been approximately $1,300 - $1,700. Both the number of eligibles and total expenditures would have been highly sensitive to economic conditions, and would be greatest during times of high unemployment.

Table 2.13

Hpothetical Income Maintenance Program for Intact Families, Guaranteeing Income of .75*Cutoff, 1970-74

Year	Average Grant	Number of Eligible Intact Families (millions)	Total Expenditures (billions)
1970	$1,367	3.031	4.145
1971	1,425	2.973	4.236
1972	1,475	2.669	3.938
1973	1,568	2.174	3.409
1974	1,747	2.225	3.887

This hypothetical example assumed that all eligible families would participate in the program. Actual participation rates for poor intact families are relatively low, and therefore, identifying factors that affect participation is of crucial importance. Chapter III develops a model for the probability that a low income intact family will receive public assistance.

CHAPTER III

PROBABILITY OF RECEIVING PUBLIC ASSISTANCE AMONG POOR INTACT FAMILIES

We have emphasized that a model of AFDC-UF caseloads must account not only for the size of the eligible population, but also for the factors that determine participation among eligibles. Previous studies of the AFDC-UF participation rate (reviewed in Chapter I) indicate that over half of all eligible families receive no aid. Our review of CPS data in Chapter II showed that only a tiny proportion of low income intact families received any kind of public assistance income. Although many working poor families are ineligible for AFDC-UF because the father is not unemployed, we might still ask, why do some fathers continue to work at low wages when, by becoming unemployed, they would qualify for aid? In this chapter we develop a model to analyze the probability that a low income intact family will receive public assistance.

A Model for the Probability of Receiving Public Assistance

The probability that an intact family will receive public assistance depends on a number of demand factors as well as supply factors. On the demand side, we would expect that those most in need are the most likely to apply for and receive public assistance. Therefore, we would expect program participation to be positively related to a measure or economic need or "income deficit."

There is also presumably a higher degree of social stigma attached to families headed by an able-bodied male who elects welfare assistance. Therefore we hypothesize that there is a tendency for such families to turn to public assistance to fill a temporary need only when family life-cycle phenomena preclude other alternatives. For example, the presence of pre-school children may constrain the amount of paid work in which the mother engages.

On the supply side, the availability and size of public assistance benefits may affect the willingness of families to apply for benefits, or to make themselves eligible for benefits by "voluntarily" becoming unemployed. Therefore, our probability model should include variables to represent economic need, family life cycle constraints, and the level and availability of public assistance benefits. It may also include other control variables, such as race, to test for systematic differences between racial groups.

For the purposes of econometrically modelling participation, a family's economic need or "income deficit" can be measured as the difference between a standard benchmark income and the family's actual pre-transfer income. For simplicity, we have taken as our benchmark twice the family's poverty line cutoff (2* cutoff). However, using the difference between (2* cutoff) and actual pre-transfer income as an independent variable in a model of program participation raises the problem of simultaneity.

Simultaneity exists when there is reason to believe that actual causation flows not only from independent variables to the dependent variable (as hypothesized) but also from the hypothesized dependent to the independent variables. Equations suffering from simultaneity will have statistically biased coefficients.

In our equation, simultaneity arises because while exogenous economic need can result in the receipt of public assistance, it is also possible for a family desiring public assistance to actively increase its economic need. For example, the family head can "voluntarily" become unemployed in order to become eligible. Therefore, the receipt of public assistance and <u>actual</u> earnings may be simultaneously determined.

The solution to this problem is to use a specially constructed <u>estimated</u> earnings figure in place of actual earnings as an independent variable. Estimated earnings are constructed in such a way as to depend solely on exogenous factors, as though the public assistance option did not exist. The probability equation to be estimated may be written as:

$$PAINC = \partial_1 \hat{YDEF} + \partial_2 BPA + \partial_3 YESKID$$

where PAINC = 1 if the family received public assistance income during the year;

0 otherwise

$\hat{YDEF}$ = the family's estimated income deficit in dollars

BPA = measures of public assistance benefits and/or availability specific to the family's jurisdiction

YESKID = 1 if the family has child(ren) under 6;

0 otherwise

The estimated income deficit term, $\hat{YDEF}$, is itself defined as:

$$\hat{YDEF} = (2*\text{cutoff}) - \hat{E}_h - \hat{E}_w - E_o - FAMNRN$$

where $\hat{E}_h$ = husband's estimated earnings

$\hat{E}_w$ = wife's estimated earnings

E_o = earnings of other family members

FAMNRN = the family's unearned income (excluding income from public assistance)

Since husband's and wife's earnings are the major sources of income in our population of low income intact families, it is assumed that simultaneity between receipt of public assistance and less important income sources (earnings of other family members, nonearned family income) may be safely ignored. Therefore, we use the actual values for these variables.

To estimate yearly earnings, it is necessary to estimate both an hourly wage rate and the number of hours worked per year. Thus:

$$\hat{E}_h = \hat{W}_h \cdot \hat{H}_h$$

$$\hat{E}_w = \hat{W}_w \cdot \hat{H}_w$$

where $\hat{E}_h$ = husband's estimated earnings

$\hat{E}_w$ = wife's estimated earnings

$\hat{H}_h$ = estimated hours per year worked by husband

$\hat{H}_w$ = estimated hours per year worked by wife

$\hat{W}_h$ = husband's estimated hourly wage

$\hat{W}_w$ = wife's estimated hourly wage

Wages are estimated as a function of the now-standard variables: years of education, proxies for labor force experience, and control variables for systematic geographical and racial differences.[1] Hours worked per year are a function of own estimated wage, spouse's estimated wage, non-earned income, family size (for husbands), preschool children (for wives) and regional control variables. These are the standard variables used in estimating labor supply.[2]

Hours and wages are continuous variables. Therefore, the two wage equations and the two hours equations can be estimated by multiple regression analysis. In contrast, receipt of public assistance is a dichotomous variable, taking on the values of 0 and 1. Because the probability of receiving public assistance is necessarily bounded by 0 and 1, multiple regression analysis would be inappropriate. Instead, we use a multinomial logit technique[3] as the appropriate method for handling a dichotomous dependent variable.

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[1]See Joseph F. Quinn, the Microeconomics of Early Retirement: A Cross-Sectional View, unpublished doctoral dissertation, M.I.T., August 1975, for a discussion of standard wage estimation procedures.

[2]See Quinn for a discussion of labor supply models.

[3]For an explanation of the multinomial logit technique, see Lynn B. Ware, Employment Probability Analysis Project Final Report, Social Welfare Regional Research Institute, Boston College, August 1977.

Before discussing the specific forms and results of our wage, hours, and probability-of-public assistance equations, we briefly describe our sample drawn from the CPS, and some data limitations.

The CPS Sample and Some Data Limitations

Chapter II described the income status and income needs of intact families who were part of the 1971-75 CPS Public Use Samples. Our intact family population consisted of all husband-wife families with children under 18, in which the father was non-aged, non-disabled, and in the labor force. Those intact families with pre-assistance incomes no more than twice their respective poverty lines were defined as low income intact families. Table 3.1 shows the number of observations each year.

TABLE 3.1

Number of Intact Families and Low-Income Intact Families, 1971-75 CPS (unweighted counts)

CPS Year	Number of Intact Families		
	Total	Low-Income	Percent
1971	17,218	4,902	28.5
1972	16,264	4,523	27.8
1973	15,782	3,822	24.2
1974	15,107	3,267	21.6
1975	14,539	3,447	23.7

Although we would like to know whether families received assistance through AFDC-UF, CPS data are not detailed enough to tell us. From the CPS we can determine whether a family received public assistance, but not whether that assistance came through federally-aided AFDC-UF or through state or local general relief. It is also difficult to use CPS data to obtain a precise measure of the population eligible for AFDC-UF. Although we know a family's income for the year, eligibility may vary on a month-to-month basis. Income fluctuations within a given year are not determinable from the CPS, so we cannot distinguish families who were eligible for some part of the year from families who were always ineligible or always eligible during the year. We are also unable to identify those families who were income-eligible but asset-ineligible, since the CPS does not have data on asset ownership (although it does have some data on income from assets).

What we have done is to define our sample as those families who would be categorically eligible for AFDC-UF based on annual demographic and income characteristics. We confine our statistical analysis to those states that participate in the federal AFDC-UF program, yet it is safer to say that our study analyzes receipt of public assistance (including, but not limited to AFDC-UF) among low income intact families.

In the next section, we discuss the estimated wage equations. Following sections discuss the estimated hours equations and our final logit equation.

Estimated Wage Equations

In order to estimate earnings for our sample of husbands and wives, we need to obtain estimates of hourly wage rates and number of hours worked per year for every individual. Our task includes estimating expected wage rates for individuals who may be unemployed or out of the labor force, as well as for those who are currently working. Therefore, we wish to estimate wage rates using characteristics on which we have information for non-workers as well as workers. This precludes the use of occupational and industrial variables. Although inclusion of these variables would have significantly improved the explanatory power of our equations for workers, we would not have been able to use equation parameters to estimate potential wages for non-workers. Therefore, we have deliberately sacrificed explanatory power in order to obtain parameters with universal application.

The CPS provides data on an individual's yearly wage-salary income, but it does not provide an hourly wage rate. Since it also does not provide direct information on the number of hours worked each year, we confined the wage equations to full-time full-year workers to minimize the chance of error in calculating hourly wage rates from yearly wage-salary income. Parents from our intact family population were selected for the wage equation sample if they a) worked 50-52 weeks last year, b) were full-time year-round workers, c) worked more than 34 hours last week at all jobs, and d) had wage or salary income greater than zero.

Yearly hours worked for these full-time-year-round workers was calculated as hours worked last week multiplied by 51 (the midpoint of 50-52 weeks worked last year). Yearly wage or salary income was divided by yearly hours to yield an hourly wage rate. Table 3.2 presents the number of full-time year-round workers for each CPS year. The entire female sample of full-time full-year workers was used for the wage equations. The male sample was too large for our computer program's capacity, so a 1/6 sub-sample was chosen, to reduce the total number of observations and to make the male sample sizes roughly equivalent to the female's. It should be emphasized that the samples on which our wage equations are based have been drawn from the full population of intact families, not just the low-income intact family population. Thus, we have avoided any biases that may have otherwise arisen if our sample had been truncated to include only those with low incomes.

TABLE 3.2

Number of Husbands and Wives Who Were Full-Time Year-Round Workers, 1971-75 CPS

CPS Year	Full-Time Year-Round Workers		
	Wives	Husbands	
		Total	One-Sixth Subsample
1971	1954	11,075	1846
1972	1988	10,498	1750
1973	2041	10,228	1705
1974	1959	9,882	1647
1975	1857	8,727	1455

Tables 3.3 and 3.4 report the results of our multiple regression equations. For our sample of husbands, race, education, SMSA, age and age-squared appear in our final equations for each of the five years. Results were consistent with those expected from previous theoretical and empirical work. Other things equal, wage rates are higher for whites than non-whites; they are higher inside SMSA's than outside; they are higher outside the South; they increase with additional years of education; they increase with age, but at a declining rate - hence the positive sign on age and the negative sign on age-squared. Equations using experience and experience-squared in place of age and age-squared were estimated, but their results were not as significant.

Two alternative methods of controlling for regional differences were tried: a) including only Region 3, the South, to pick up South vs. non-South wage differences and b) using Region 3 as the reference region, and including Regions 1, 2 and 4 (the Northeast, Midwest, and West, respectively) to pick up differences between the South and each of the other regions. For CPS years 1972 and 1975, the South - non-South dichotomy yielded the more significant results, but for CPS years 1971, 1973 and 1974 the more detailed regional differences worked better.

Similar results were obtained for our sample of wives. Race, education, and SMSA appear in all five equations (race, however, was significant only in the 1974 sample). Age and age-squared appear in four of the five years, but experience and experience-squared take their place in the 1972 CPS equation. All signs on significant variables were in the

TABLE 3.3

Multiple Regression Equations for Hourly Wage Rates:
Full-Time Full-Year Working Husbands, 1971-75 CPS

	Coefficients for each CPS Year				
	1971	1972	1973	1974	1975
Dependent Variable					
Hourly Wage Rate					
Independent Variables					
Constant	-3.066	-3.124	-3.787	-3.633	-2.166
Race (1=non-white)	- .545	- .796	- .873	- .566	- .555
Education (years)	.223	.179	.184	.186	.201
SMSA (1 = inside SMSA)	.676	.724	.791	.821	.411
Age (years)	.191	.245	.268	.257	.235
Age-squared (years)	- .002	- .003	- .003	- .003	- .003
Region 1[b] (1= resides in Region 1)	.308		.423	.552	
Region 2[b] (1= resides in Region 2)	.466		.336	.360	
Region 3[b] (1= resides in Region 3)		- .440			- .559
Region 4[b] (1= resides in Region 4)	.510		.355	.386	
Number of observations	1846	1750	1705	1647	1455
R^2	.239	.235	.228	.214	.158

Notes: a) all coefficients are significant at .05 level

b) Region 1 = Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania

Region 2 = Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, North Dakota, South Dakota, Nebraska, Kansas, Missouri

Region 3 = Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, Texas

Region 4 = Montana, Idaho, Wyoming, Colorado, New Mexico, Utah, Nevada, Arizona, Washington, Oregon, California, Alaska, Hawaii

TABLE 3.4

Multiple Regression Equations for Hourly Wage Rates:
Full-Time Full-Year Working Wives, 1971-75 CPS

	Coefficients for each CPS Year				
	1971	1972	1973	1974	1975
Dependent Variable					
Hourly Wage Rate					
Independent Variables					
Constant	-1.588	- .277	-1.501	-2.163	.846
Race (1 = non-white)	- .052[d]	- .019[d]	- .085[d]	- .154	.043[d]
Education (years)	.209	.199	.204	.216	.214
SMSA (1 = inside SMSA)	.429	.350	.349	.452	.547
Age (years)	.079		.078	.108	.098
Age-squared (years)	- .001		- .001	- .001	- .001
Experience[b] (years)		.034			
Experience-squared (years)		- .001			
Region 1[c] (1 = resides in Region 1)		.284	.413	.397	.306
Region 2[c] (1 = resides in Region 2)		.157	.261	.165	.259
Region 3[c] (1 = resides in Region 3)	- .107				
Region 4[c] (1 = resides in Region 4)		.268	.273	.372	.457
Number of observations	1954	1988	2041	1959	1857
$\bar{R}^2$	.261	.230	.235	.263	.225

Notes: a) all coefficients are significant at .05 level, unless otherwise noted

b) Experience = Age - Years of Education - 6, a proxy for potential labor market experience

c) for definitions of each Region, see note to Table III.

d) coeffcient not significant

expected direction. The more detailed regional differences were chosen in four of the five years, but the simple South - non-South difference was more significant for the 1971 CPS.

The explanatory power of our equations is far from impressive. However, the main purpose of this task was not to explain wage differences but to develop a set of parameters that could be used to assign a "potential hourly wage" to each husband and each wife (workers and non-workers alike) in families for which we want to study the probability of receiving public assistance income. The equations reported in Tables 3.3 and 3.4 provide the parameters that were used to assign estimated or "potential" hourly wages.

The Hours Equations

Estimated hourly wage rates provide part of the answer to our problem of estimating yearly earnings. The other part lies in estimating the number of hours worked per year. Our hours equations assumed that hours worked per year would be a function of own estimated wage, spouse's estimated wage, presence of pre-school children, family size, asset income, region, and AFDC-UF grant size and availability. These last two variables were added to the traditional list of labor supply variables in order to account for the possibility that families might reduce their work effort in response to generous and/or easily available AFDC-UF benefits. Since we wanted to test this relationship on a population for whom UF benefits would be a reasonable alternative to work, we confined

our sample to husbands and wives in the low-income intact family population (instead of the entire intact family population). We further limited our sample to those living in state codes for which AFDC-UF benefits and availability could be calculated. In a state (or group of states comprising a single code) in which the AFDC-UF program did not operate, grant size and availability took on values of zero. In a state with a UF program, grant size for each family in the state was calculated according to the formula:

$$GRANT = (BEN_2 + INCBEN*KIDS)*12$$

where GRANT = maximum yearly benefit to which the family would be entitled if eligible for AFDC-UF

BEN_2 = maximum monthly benefit for a 2-person family

INCBEN = incremental maximum monthly benefit for each additional person. Since available data only define maximum benefit levels for 4-person and 2-person families (BEN_4 and BEN_2, respectively),

INCBEN was calculated as:

$$INCBEN = (BEN_4 - BEN_2)/2$$

KIDS = number of own (never married) children under 18

Our measure of availability was the ratio of UF cases to all AFDC cases in the state.[4]

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[4]Data on UF benefits came from National Center for Social Statistics Reports, D-2 series, July 1970, July 1971, July 1972, July 1973, July 1974. Data on AFDC-UF and AFDC-total caseloads came from Public Assistance Statistics, November 1970, July 1971, July 1972, July 1973, July 1974.

For families in state codes comprising two states that each had UF programs, benefits and availability were calculated using the data for each state and taking a weighted average (weighted by each state's share of the sum of UF cases in both states). Families in state codes that included UF states and non-UF states together were excluded from the sample, since there was no clear cut means of calculating public assistance benefits and availability for them. Therefore, our sample for the hours equations included all low income intact families except for those living in state codes that combined UF states with non-UF states (see Table 3.5). Since state code boundaries changed over the five-year period, and since the list of UF states also changed over the period, the total number of states included, as well as the ratio of UF states to non-UF states, varies from year to year. Table 3.6 shows the number of observations each year for the total number of low-income

TABLE 3.6

Number of Observations of Low Income Intact Families, 1971-75 CPS

CPS Year	Number of Observations of Low Income Intact Families		
	Total	Adjusted Total (Excluding those in state codes containing a mixture of UF states and non-UF states)	1/3 or 1/2 Subsample of Adjusted Total
1971	4902	3484	1162
1972	4523	3241	1081
1973	3822	2674	1337
1974	3267	2317	1159
1975	3447	2419	1210

Table 3.5

State Codes included in Sample Population
for Hours-worked Regression Equation, 1971-1975 CPS

1971 CPS		1972 CPS		1973, 74, 75 CPS	
21	New York	21	New York	14	Massachusetts
22	New Jersey	23	Pennsylvania	21	New York
23	Pennsylvania	31	Ohio	23	Pennsylvania
31	Ohio	33	Illinois	31	Ohio
33	Illinois	43	Missouri	33	Illinois
43	Missouri	52	Maryland	39	Michigan, Wisconsin
52	Maryland	51	District of Columbia	53	District of Columbia
51	District of Columbia	53	West Virginia	92	California
53	West Virginia	91	Oregon	16	Connecticut
91	Oregon	92	California	22	New Jersey
92	California	11	Connecticut	32	Indiana
11	Connecticut	22	New Jersey	56	North Carolina
32	Indiana	32	Indiana	58	Georgia, South Carolina
57	North Carolina South Carolina	57	North Carolina South Carolina	59	Florida
54	Georgia	54	Georgia	67	Kentucky, Tennessee
55	Florida	55	Florida	69	Alabama, Mississippi
61	Kentucky	61	Kentucky	72	Texas
62	Gennessee	62	Tennessee		
69	Alabama Mississippi	69	Alabama Mississippi		
71	Louisiana	71	Louisiana		
72	Texas	72	Texas		

intact families and the number excluding those who lived in state codes containing a mixture of UF states and non-UF states. Since our sample sizes were too large for the computer program capacity, we took a 1/3-subsample of the 1971 and 1972 CPS samples, and a 1/2-subsample of the 1973-75 CPS samples, yielding yearly sample sizes between 1000-1500.

The CPS does not provide direct information on number of hours worked last year. It does provide information on hours worked last week, weeks worked last year (categorized: 0, 1-13, 14-26, 27-39, 40-47, 48-49, 50-52), and whether the individual worked full year/part year and full time/part time. Using this information, hours worked last year was calculated according to the procedure described below. Individuals who worked 50-52 weeks were categorized as full year workers and were sub-grouped into part-time and full-time workers. We calculated the average number of hours-worked-last-week for full-time-full-year and part-time-full-year workers and multiplied that average by 51 (the midpoint of the weeks-worked category). Similarly, the remaining part-year workers were subdivided into full-time and part-time groups. Average wages for full-timers and part-timers were calculated for each group (i.e., each "weeks-worked" category) and then multiplied by the midpoint of the category. Those who worked no weeks last year were coded as having worked no hours last year.

Our calculated values for hours worked last year are therefore somewhat crude. However, in the absence of more refined data, they seem to be the best estimates available. Our calculated number of hours

worked last year for each category of worker is reported for husbands and wives in Tables 3.7 and 3.8 respectively. These were the dependent variables for the male and female hours regressions.

Our initial list of independent variables included own estimated hourly wage, spouse's estimated hourly wage, regional dummies, family size (for men), presence of pre-school children (for women), asset income, and three measures of public assistance benefits and/or availability. The three measures were: GRANT, the maximum yearly benefit to which the family would be entitled; UF/TOT, the ratio of UF cases to total AFDC cases in the state each year; and GRANT*UF/TOT, an interaction item to represent both the benefit level and availability of public assistance in the state.

Tables 3.9 and 3.10 report the results of the hours regressions. Preliminary regression equations showed that the three public assistance variables were never significant. Neither the level nor the availability of public assistance affected the number of hours of work for husbands and wives in low income intact families. Our final regression equations for hours worked each year include only those variables that were usually significant at the .05 level.

The results of our hours regression equations were consistent with a priori theoretical expectations. Husbands with higher estimated wages and those with larger size families worked more hours, other things equal. In the 1974 CPS, family size was not significant, but asset income was. The sign was in the expected direction, with higher asset income reducing

TABLE 3.7

Estimated Number of Hours Worked Last Year by Weeks Worked and Full-Year/Part-Year, Full-Time/Part-Time Status, for Husbands in Low Income Intact Families 1971-1975 CPS

Weeks Worked	Estimated Number of Hours Worked Last Year: Full-Time	Part-Time
1971 CPS	Full Year	
50-52	2242	1262
	Part Year	
48-49	1739	2361
40-47	1464	1095
27-39	994	838
14-26	576	347
1-13	183	126
1972 CPS	Full Year	
50-52	2278	1544
	Part Year	
48-49	1804	1377
40-47	1530	1132
27-39	1023	762
14-26	596	497
1-13	205	219
1973 CPS	Full Year	
50-52	2290	1553
	Part Year	
48-49	1827	1225
40-47	1479	1217
27-39	997	749
14-26	556	431
1-13	217	155
1974 CPS	Full Year	
50-52	2219	1557
	Part Year	
48-49	1738	1304
40-47	1468	1061
27-39	1015	805
14-26	577	444
1-13	202	147
1975 CPS	Full Year	
50-52	2107	957
	Part Year	
48-49	1628	552
40-47	1253	874
27-39	797	437
14-26	445	420
1-13	173	83

TABLE 3.8

Estimated Number of Hours Worked Last Year by Weeks Worked and Full-Year/Part-Year, Full-Time/Part-Time Status, for Wives in Low Income Intact Families

1971-1975 CPS

Weeks Worked	Estimated Number of Hours Worked Last Year: Full-Time	Part-Time
1971 CPS	Full Year	
50-52	1814	729
	Part Year	
48-49	1424	708
40-47	1131	602
27-39	723	511
14-26	290	210
1-13	65	43
1972 CPS	Full Year	
50-52	1783	822
	Part Year	
48-49	1495	666
40-47	1167	612
27-39	764	436
14-26	341	233
1-13	84	49
1973 CPS	Full Year	
50-52	1790	757
	Part Year	
48-49	1523	731
40-47	1285	666
27-39	375	237
14-26	375	237
1-13	74	42
1974 CPS	Full Year	
50-52	1598	905
	Part Year	
48-49	1188	664
40-47	995	398
27-39	760	488
14-26	382	202
1-13	69	45
1975 CPS	Full Year	
50-52	1645	776
	Part Year	
48-49	1127	581
40-47	1260	694
27-39	631	445
14-26	271	160
1-13	57	35

TABLE 3.9

Multiple Regression Equations for Hours Worked per Year:
Husbands in Low Income Intact Families, 1971-75 CPS

	Coefficients for Each CPS Year[a]				
	1971	1972	1973	1974	1975
Dependent Variable					
Hours Worked per Year					
Independent Variables					
Constant	1381.0	1495.2	1587.4	1570.1	1056.1
Own Estimated Wage	81.31	28.06[c]	60.76	87.41	81.92
Region 1(1 = resides in Region 1)	44.46[c]		-274.2	-122.1	-136.5
Region 2(1 = resides in Region 2)	12.97[c]		-207.9	- 93.1[d]	-211.9
Region 3(1 = resides in Region 3)		118.38			
Region 4(1 = resides in Region 4)	-176.8		-370.5	-345.8	-212.5
Family Size	36.35	45.84	38.98		55.25
Asset Income				- 0.11	
Number of Observations	1162	1081	1337	1159	1210
$\overline{R}^2$	.034	.021	.041	.032	.034

Notes: a) all coefficients are significant at .05 level
b) for definitions of each Region, see note to Table 3
c) coefficient not significant
d) coefficient significant at 0.10 level

TABLE 3.10

Multiple Regression Equations for Hours Worked per Year:
Wives in Low Income Intact Families, 1971-75 CPS

	Coefficients for Each CPS Year[a]				
	1971	1972	1973	1974	1975
Dependent Variable					
Hours Worked per Year					
Independent Variable					
Constant	336.81	334.25	290.24	136.9	579.68
Own Estimated Wage	88.9	138.0	85.57	85.28	116.30
Spouse's Estimated Wage	- 72.29	- 80.47	-63.37	-54.96	-103.4
Presence of Pre-school Children (1 = pre-school child(ren) present)	-146.1	-235.8	-214.8	-152.9	-158.5
Region 1[b](1 = resides in Region 1)					- 94.92
Region 2[b](1 = resides in Region 2					- 95.72
Region 3[b](1 = resides in Region 3)	70.09	102.86	49.52[c]	93.07	
Region 4[b](1 = resides in Region 4)					-147.2
Number of Observations	1162	1081	1337	1159	1210
$\bar{R}^2$	.045	.071	.048	.037	.054

Notes: a) all coefficients are significant at .05 level

b) for definitions of each Region, see note to Table 3

c) coefficient not significant

hours worked. Spouse's estimated wages did not significantly affect husband's hours, and they were excluded from the final equations. Regional variations were significant in all 5 years. Hours were usually higher in the South than in the other three regions, except for insignificant differences between the South and the Northeast (Region 1) and Midwest (Region 2) in the 1971 CPS.

For wives in low-income intact families, their own estimated wage exerted a positive influence on hours worked, while their husband's estimated wage and the presence of pre-school children exerted negative influences. These outcomes are consistent with the large body of literature on determinants of women's labor force participation. Regional differences were significant in 4 of the 5 years, with wives in the South tending to work more hours than those in the other regions, ceteris paribus.

As with the wage equations, the hours equations do not have impressive explanatory power as measured by the R^2 statistic. One important reason for this is that hours worked per year depend not only on the supply variables we have included, but also on demand variables, such as the unemployment rate in the occupation and/or industry. In order to be able to assign an expected number of hours worked to all husbands and wives in our low income sample, including those who have a current occupation and industry, as well as those who do not, occupational and industrial characteristics have been excluded. Again, as we did in the wage equations, we have deliberately sacrificed explanatory power in order to develop

equations whose parameters could be used for all husbands and wives in our sample. The equations reported in Tables 3.9 and 3.10 provide those parameters and were the basis for assigning values for "estimated hours worked per year".

The "Probability-of-Receiving-Public-Assistance" Equations

Parameters from the wage equations can be used to assign an estimated hourly wage rate to each husband and wife in our sample. Similarly, parameters from the hours equations can be used to assign an estimated number of hours worked per year to each husband and wife. Multiplying estimated hourly wage rate by estimated hours worked per year yields estimated yearly earnings for each spouse. We can now proceed with our logit equations to see how the probability of receiving public assistance varies according to the supply and demand factors discussed at the beginning of this chapter.

The sample for the logit equations includes only those low income intact families in state codes representing states that offer the UF program (i.e., either an individual UF state or a group of states with the same code, all of which offer the UF program). Low income intact families in non-UF state codes, and those in state codes representing a mixture of UF and non-UF states were excluded. As before, the list of included state codes changes from year to year, reflecting yearly differences in CPS state groupings and yearly differences in UF coverage,

as some states add or delete the program (see Table 3.11). The criterion of including only those low income intact families in UF states was chosen in order to measure the probability of receiving public assistance among the group for whom it is a viable alternative. Table 3.12 lists the sample sizes for the logit equations each year.

Table 3.11

State Codes Representing Jurisdictions with AFDC-UF Programs, 1971-75 CPS

1971 CPS	1972 CPS	1973, 74, 75 CPS
21 New York	21 New York	14 Massachusetts
22 New Jersey	23 Pennsylvania	21 New York
23 Pennsylvania	31 Ohio	23 Pennsylvania
31 Ohio	33 Illinois	31 Ohio
33 Illinois	43 Missouri	33 Illinois
43 Missouri	52 Maryland	39 Michigan, Wisconsin
52 Maryland	51 District of Columbia	53 District of Columbia
51 District of Columbia	53 West Virginia	92 California
53 West Virginia	91 Oregon	
91 Oregon	92 California	
92 California		

TABLE 3.12

Total Number of Low Income Intact Families and Number in State Codes in which AFDC-UF is Available

CPS Year	Number of Low Income Intact FAmilies: Total	In State Codes in which AFDC-UF is available	Percent
1971	4902	1883	38.4%
1972	4523	1610	35.6
1973	3822	1356	35.5
1974	3267	1215	37.2
1975	3447	1242	36.0

Our task is to estimate the probability that a low income intact family will have received public assistance income. One simple way of gauging this is to calculate the proportion (incidence) of low income families that received public assistance income, and to assign that group incidence to each family. Table 3.13 lists the proportion of our CPS sample of low income intact families that received public assistance income each year. As an example, in the absence of other information our best guess is that the probability that a given low income intact family living in a UF state received public assistance income in 1974 (the year covered by the 1975 CPS) was 8.9 percent, the group incidence for that year.

TABLE 3.13

PROPORTION OF LOW INCOME FAMILIES IN UF STATE CODES THAT RECEIVED PUBLIC ASSISTANCE INCOME, 1971-75 CPS

CPS Year	Percent of Low Income Families in UF State Codes that Received Public Assistance Income
1971	6.7 %
1972	7.8
1973	9.8
1974	9.4
1975	8.9

This method of using the group incidence is easily accessible, but it could be improved upon if we could identify those factors that increase

or decrease the chance that a specific family will receive public assistance income. The task then becomes one of trying to isolate those factors that would allow us to improve on the group incidence method in predicting probabilities for specific families with specific characteristics. If such factors could be isolated, we would not only refine our ability to predict outcomes for specific families, but also gain analytic insight into the factors that distinguish participants from non-participants among a group of eligible families.

The independent variables in our equation may take on values ranging from $-\infty$ to ∞, while our dependent variable, since it is a probability, can vary only between 0 and 1. The logit form is appropriate for the constraints of our equation, and works as follows: if p is the probability that an event will occur $0 \leq p \leq 1$. If p is a function of several independent variables, i.e., $p = f(B_1X_1 + B_2X_2 \ldots + B_{gi}X_{ig}) = f(\Sigma BX)$ and $-\infty \leq \Sigma\beta X \leq \infty$, we need an expression that will allow p to vary only between 0 and 1 while $\Sigma\beta X$ varies between plus and minus infinity. The expression $\ln(\frac{P}{1-p})$ possesses these properties. As p goes from 0 to 1, $\ln(\frac{P}{1-p})$ goes from $-\infty$ to $+\infty$. Setting $\ln(\frac{P}{1-p})$ equal to $\Sigma\beta X$ and solving for p, we get:[5]

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[5] This brief discussion of the logit form relies heavily on the Quinn and Ware references cited in footnotes 1 and 3 respectively.

$$\ln\left(\frac{P}{1-p}\right) = \Sigma\beta X$$

$$e^{\ln\left(\frac{P}{1-p}\right)} = \frac{P}{1-p} = e^{\Sigma\beta X}$$

$$p = \frac{e^{\Sigma\beta X}}{1+e^{\Sigma\beta X}}$$

$$= \frac{1}{1+e^{-\Sigma\beta X}}$$

This is the form of the logit equation. In order to tell whether our equations allow us to assign probabilities that are more accurate than simply using the group incidence, we need to apply tests of significance. Two standard statistical tests can be applied to logit equations: the t-test and the Chi-squared test. The t-test can be used for determining whether the coefficients, β, on individual independent variables, X, are significantly different from zero, the same purpose it serves in multiple regression analysis. The Chi-squared test (χ^2) is used to determine whether the equation as a whole is significantly better in assigning probabilities to individual families than simply using the group incidence. The degrees of freedom for χ^2 are the number of variables in addition to those contained in the null equation.[6] For the equations reported in Tables 3.15-3.19, the degrees of freedom are the number of variables in the equation excluding the constant term.

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[6] An equation which includes only a constant term.

Earlier in this chapter, we hypothesized that the probability that an intact family would receive public assistance depended on a number of supply side and demand side variables.

Table 3.14 lists the variables that should be considered in a model of the probability of receiving public assistance. The purpose of including the supply side variables is to be able to identify the demand function. In this sense, the supply side variables are being used as controls, so that the demand factors can be identified.

The supply side variables include GRANT, the maximum UF benefit to which the family would have been entitled; UF-TOT, the ratio of UF cases to total AFDC cases within the state; and an interaction term, GRANT*UF-TOT. Preliminary equations showed that GRANT and the interaction term were usually not significant; in the few instances where grant was significant, it had the wrong sign. Therefore, our final equations include only UF-TOT as a control for supply-side factors. The expected sign on UF-TOT is positive: the probability of receiving public assistance should be higher for those families living in states in which UF cases account for a larger proportion of the total AFDC caseload.

On the demand side, we measured economic need, or "income deficit" as the difference between our benchmark income of twice the poverty line (2*cutoff) and expected income, defined as estimated husband's earnings plus estimated wife's earnings plus other family earnings plus nonearned income (excluding public assistance). The hypothesized sign

Table 3.14

Variables for a Model of the Probability of Receiving Public Assistance

"Supply Side" Variables

GRANT	the maximum AFDC-UF benefit to which a given family would be entitled
UF-TOT	the ratio of AFDC-UF cases to total AFDC cases within the state, a measure of program availability
GRANT*UF-TOT	an interaction term combining the level of the grant with its availability

"Demand Side" Variables

YDEF	the family's income deficit, measured as the difference between twice the family's poverty cutoff level and its expected income
YESKID	a dummy variable, equals 1 if the family has child(ren) under 6
MAGE	husband's age, a proxy for stage in the family's life cycle
FAMSIZE	number of people in the family, a proxy for stage in the family's life cycle

"Control" Variables

REG 1 REG 2 REG 4	regional dummies for the Northeast, Midwest, and Southwest, respectively, Reference group in the South, Reg. 3
MRACE	race dummy, equals 1 if husband is non-white

is positive, since we expect families with greater economic need to be more likely to apply for and receive aid.

Our other demand side variables tried to capture family life cycle factors. We expect the number and age of preschool children to affect the family's ability to find alternatives to UF, such as employment of the wife. The number and age of preschool children may also affect the family's perceptions regarding the severity of a given income deficit. While it would be desirable to use the number and age of preschool children as variables, CPS data do not tell us the number and age of children under 6. Therefore, we use a dummy variable, YESKID, which takes on the value of 1 if there are any children under 6, and 0 if there are none. This is not as refined a measure as we would have liked, since it only partially captures family life cycle constraints (for example, it cannot distinguish between a family with one child aged 5-1/2 and a family with 3 children under 6, the youngest being 3 months old). A positive sign on the coefficient is expected.

The age of the husband, MAGE, was another variable we used to indicate family life cycle constraints. In contrast to YESKID, which is a dummy variable, MAGE is a continuous variable and as such may be a better proxy for number and/or age of preschool children than YESKID. Since we are using MAGE as a proxy for the stage in the family's life cycle, and since we expect younger families to have fewer options aside from AFDC-UF, we hypothesize an inverse relationship between MAGE and the probability of public assistance receipt.

A third family life cycle variable was FAMSIZE, the number of people in the family. Among families with preschool children, larger families may also be more likely to have older children in addition to preschoolers. These older children may provide the family with a wider range of alternatives to UF (either as baby sitters so parents can look for work, or as potential earners themselves), so we hypothesize an inverse relationship between FAMSIZE and probability of public assistance receipt, holding other factors constant.

In addition to the supply side and demand side variables discussed above, we initially included variables to test for systematic differences between races and between regions. Preliminary equations showed that regional differences were generally not significant, so regional variables were excluded from the final equation. Racial differences were measured by the variable MRACE, a dummy that took on the value of 1 if the husband was non-white.

RESULTS

The logit equation results are presented in Tables 3.15-3.19 along with Figures 3.1-3.5. Only 6.7 percent of our 1971 CPS low income sample received public assistance income. Therefore, using the group incidence method, the chance that a given low income family would not receive public assistance was overwhelming, greater than 93 percent. Nevertheless, we can improve on the group incidence method if we have additional information about the family. As Figure 1 shows, the supply

TABLE 3.15

Logit Equations for Probability of Receiving Public Assistance Income

1971 CPS

Variables	Mean Values	Logit Coefficients[a] Equation #							
		1	2	3	4	5	6	7	8
CONSNT	.067	-3.14	-2.91	-2.92	-2.75	-3.10	-1.37	-3.38	-3.62
UF-TOT	.071	6.55						5.80	5.88
YDEF(ooo's)	1.646		.147					.154	.148
YESKID	.617			.440					.374[b]
MRACE	.119				.754				
FAMSIZE	5.31					.087[b]			
MAGE	36.7						.036		
χ^2[d]		14.19	13.97	5.00[e]	9.53	2.94[f]	11.98	29.13	32.6

Notes:

a) coefficients are significant at the .05 level unless otherwise noted

b) coefficient is significant at the 0.10 level

c) coefficient is not significant at the 0.10 level

d) χ^2 value is significant at the .01 level unless otherwise noted

e) χ^2 value is significant at the .05 level

f) χ^2 value is not significant at the .05 level

TABLE 3.15 (cont'd)

Logit Equations for Probability of Receiving Public Assistance Income

1971 CPS

Variables	Mean Values	Logit Coefficients[a] Equation #						
		9	10	11	12	13	14	15
CONSNT	.067	-3.47	-2.13	-3.72	-3.64	-2.18	-2.13	-2.33
UF-TOT	.071	6.08	5.61	6.16	5.89	5.62	6.02	5.82
YDEF(ooo's)	1.646	.138	.156	.131	.146	.155	.138	.128
YESKID	.617			.389[b]	.374[b]	.035[c]		
MRACE	.119	.642		.657			.753	
FAMSIZE	5.31				.005[c]			.086[c]
MAGE	36.7		- .035			- .034	- .038	- .041
χ^2[d]		35.86	40.21	39.65	32.64	40.23	49.16	42.10

TABLE 3.16

1972 CPS

Variables	Mean Values	Logit Coefficients[a] Equation #							
		1	2	3	4	5	6	7	8
CONSNT	.078	-3.22	-2.63	-2.79	-2.56	-2.76	- .971	-3.39	-3.65
UF-TOT	.071	9.56						9.58	9.55
YDEF(ooo's)	1.495		.100					.107	.093
YESKID	.619			.498					.429
MRACE	.124				.622				
FAMSIZE	5.25					.055[c]			
MAGE	36.6						- .043		
χ^2[d]		21.09	5.90[e]	6.28[e]	6.20[e]	1.18[f]	17.64	26.88	31.33

Notes:

a) coefficients are significant at the .05 level unless otherwise noted

b) coefficient is significant at the 0.10 level

c) coefficient is not significant at the 0.10 level

d) χ^2 value is significant at the .01 level unless otherwise noted

e) χ^2 value is significant at the .05 level

f) χ^2 value is not significant at the .05 level

TABLE 3.16 (cont'd)

Logit Equations for Probability of Receiving Public Assistance Income
1972 CPS

Variables	Mean Values	Logit Coefficients[a] Equation #						
		9	10	11	12	13	14	15
CONSNT	.078	-3.48	-1.88	-3.79	-3.72	-1.67	-1.94	02.10
UF-TOT	.071	9.94	9.30	10.01	9.56	9.31	9.82	9.35
YDEF(ooo's)	1.495	.088	.126	.070[c]	.087[b]	.132	.0001	.084[c]
YESKID	.619			.485	.435	- .128[c]		
MRACE	.124	.596		.666			.674	
FAMSIZE	5.25				.015[c]			.112[b]
MAGE	36.6		- .043			- .047	- .045	- .053
χ^2[d]		32.25	44.42	37.87	31.40	44.66	51.07	47.60

TABLE 3.17

Logit Equations for Probability of Receiving Public Assistance Income

1973 CPS

Variables	Mean Values	Logit Coefficients[a] Equation #							
		1	2	3	4	5	6	7	8
CONSNT	.098	-2.44	-2.25	-2.62	-2.24	-1.38	- .401	-2.47	-2.85
UF-TOT	.064	3.44[c]						3.17[c]	3.31[c]
YDEF	1.350		.022[c]					.036[c]	.015[c]
YESKID	.653			.566					.557
MRACE	.119				.159[c]				
FAMSIZE	5.19					- .169			
MAGE	35.8						- .054		
χ^2[d]		1.67[f]	0.20[f]	7.72	0.34[f]	8.61	26.81	2.15[f]	9.45[e]

Notes:

a) coefficients are significant at the .05 level unless otherwise noted

b) coefficient is significant at the 0.10 level

c) coefficient is not significant at the 0.10 level

d) χ^2 value is significant at the .01 level unless otherwise noted

e) χ^2 value is significant at the .05 level

f) χ^2 value is not significant at the .05 level

TABLE 3.17 (cont'd)

Logit Equations for Probability of Receiving Public Assistance Income

1973 CPS

Variables	Mean Values	Logit Coefficients[a] Equation #						
		9	10	11	12	13	14	15
CONSNT	.098	-2.48	- .624[c]	-2.87	-1.71	- .427	- .616[c]	- .444[c]
UF-TOT	.064	3.15[c]	2.48[c]	3.27[c]	2.67[c]	2.42[c]	2.44[c]	2.31[c]
YDEF(ooo's)	1.350	.033[c]	.040[c]	.010[c]	.126	.044[c]	.034[c]	.091[c]
YESKID	.653			.571	.392[b]	- .115[c]		
MRACE	.119	.122[c]		.199[c]			.281[c]	
FAMSIZE	5.19				- .224			- .113[c]
MAGE	35.8		- .053			- .057	- .054	- .044
χ^2[d]		2.34[f]	28.46	9.96[e]	20.06	28.65	29.46	30.54

TABLE 3.18

Logit Equations for Probalility of Receiving Public Assistance Income

1974 CPS

Variables	Mean Values	Logit Coefficients[a] Equation #							
		1	2	3	4	5	6	7	8
CONSNT	.094	-2.86	-2.47	-2.78	-2.31	-1.96	- .389[c]	-2.96	-3.40
UF-TOT	.050	11.10						9.29	9.45
YDEF(ooo's)	1.142		.146					.149	.128
YESKID	.604			.764					.681
MRACE	.112				.369[c]				
FAMSIZE	5.12					- .062[c]			
MAGE	36.7						- .054		
χ^2[d]		8.23	9.62	12.59	1.62[f]	1.00[f]	25.6	17.59	27.18

Note:

a) coefficients are significant at the .05 level unless otherwise noted

b) coefficient is significant at the 0.10 level

c) coefficient is not significant at the 0.10 level

d) χ^2 value is significant at the .01 level unless otherwise noted

e) χ^2 value is significant at the .05 level

f) χ^2 value is not significant at the .05 level

TABLE 3.18 (cont'd)

Logit Equations for Probability of Receiving Public Assistance Income
1974 CPS

Variables	Mean Values	Logit Coefficients[a] Equation #						
		9	10	11	12	13	14	15
CONSNT	.094	-2.98	-1.09	-3.43	-2.66	-1.24[b]	-1.10	-1.01
UF-TOT	.050	9.15	7.59[b]	9.29	8.95	7.70[b]	7.42[b]	7.56[b]
YDEF(ooo's)	1.142	.145	.147	.124	.181	.144	.142	.163
YESKID	.604			.686	.587	.089[c]		
MRACE	.112	.224[c]		.251[c]			.305[c]	
FAMSIZE	5.12				- .143			- .045[c]
MAGE	36.7		- .052			- .049	- .052	- .048
χ^2d		18.19	39.95	27.9	31.3	40.05	41.01	40.26

TABLE 3.19

Logit Equations for Probability of Receiving Public Assistance Income

1975 CPS

Variables	Mean Values	Logit Coefficients[a] Equation #							
		1	2	3	4	5	6	7	8
CONSNT	.089	-2.75	-2.52	-2.78	-2.40	-2.14	-1.05	-2.95	-3.27
UF-TOT	.043	9.21						8.18[b]	7.75[b]
YDEF(ooo's)	2.308		.074					.102	.086
YESKID	.615			.659					.552
MRACE	.132				.422[c]				
FAMSIZE	5.09					- .039[c]			
MAGE	36.4						- .037		
χ^2[d]		4.84[e]	4.01[e]	9.13	2.40[f]	0.37[f]	10.92	11.56	17.64

Note:

a) coefficients are significant at the .05 level unless otherwise noted

b) coefficient is significant at the 0.10 level

c) coefficient is not significant at the 0.10 level

d) χ^2 value is significant at the .01 level unless otherwise noted

e) χ^2 value is significant at the .05 level

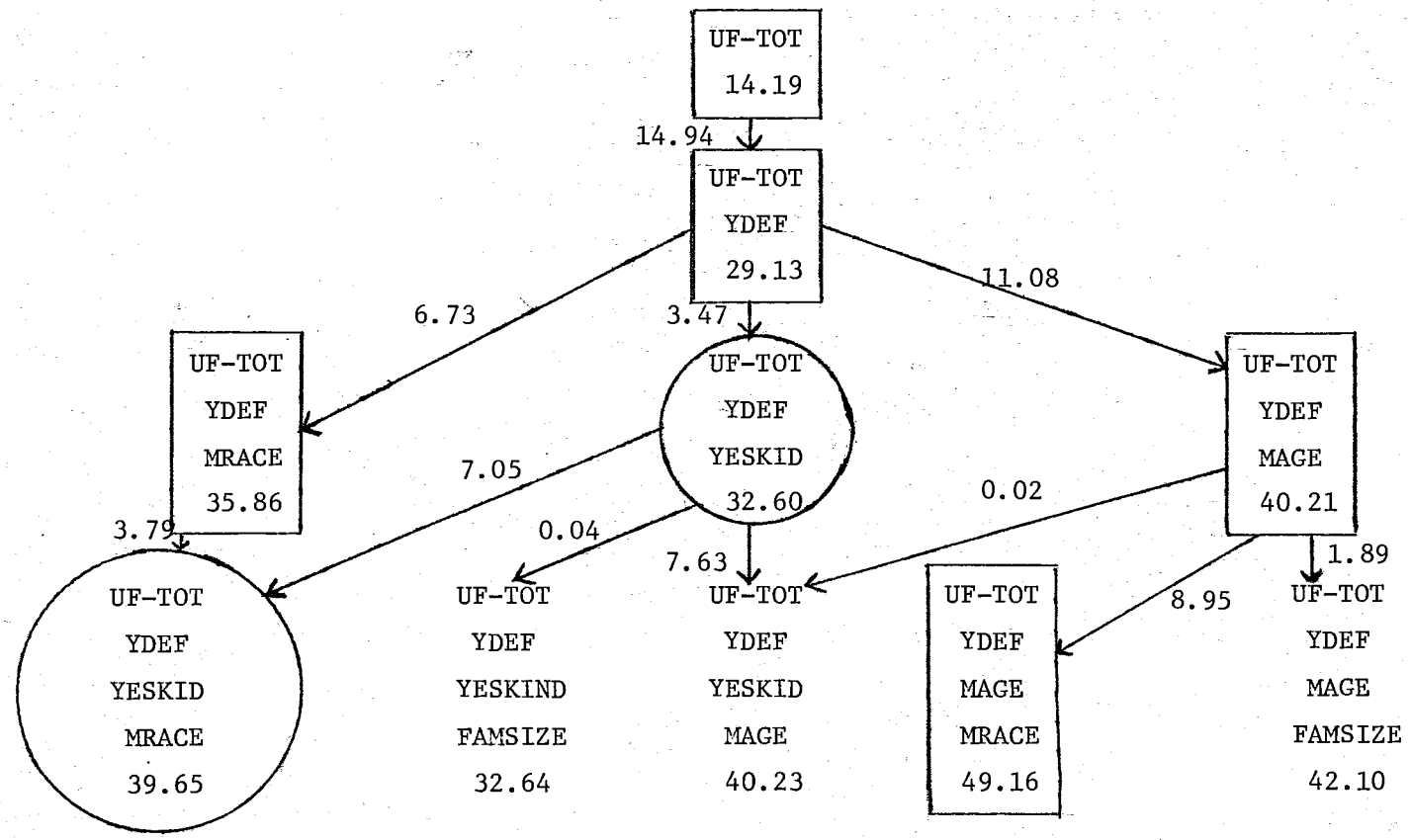
f) χ^2 value is not significant at the .05 level

TABLE 3.19 (cont'd)

Logit Equations for Probability of Receiving Public Assistance Income
1975 CPS

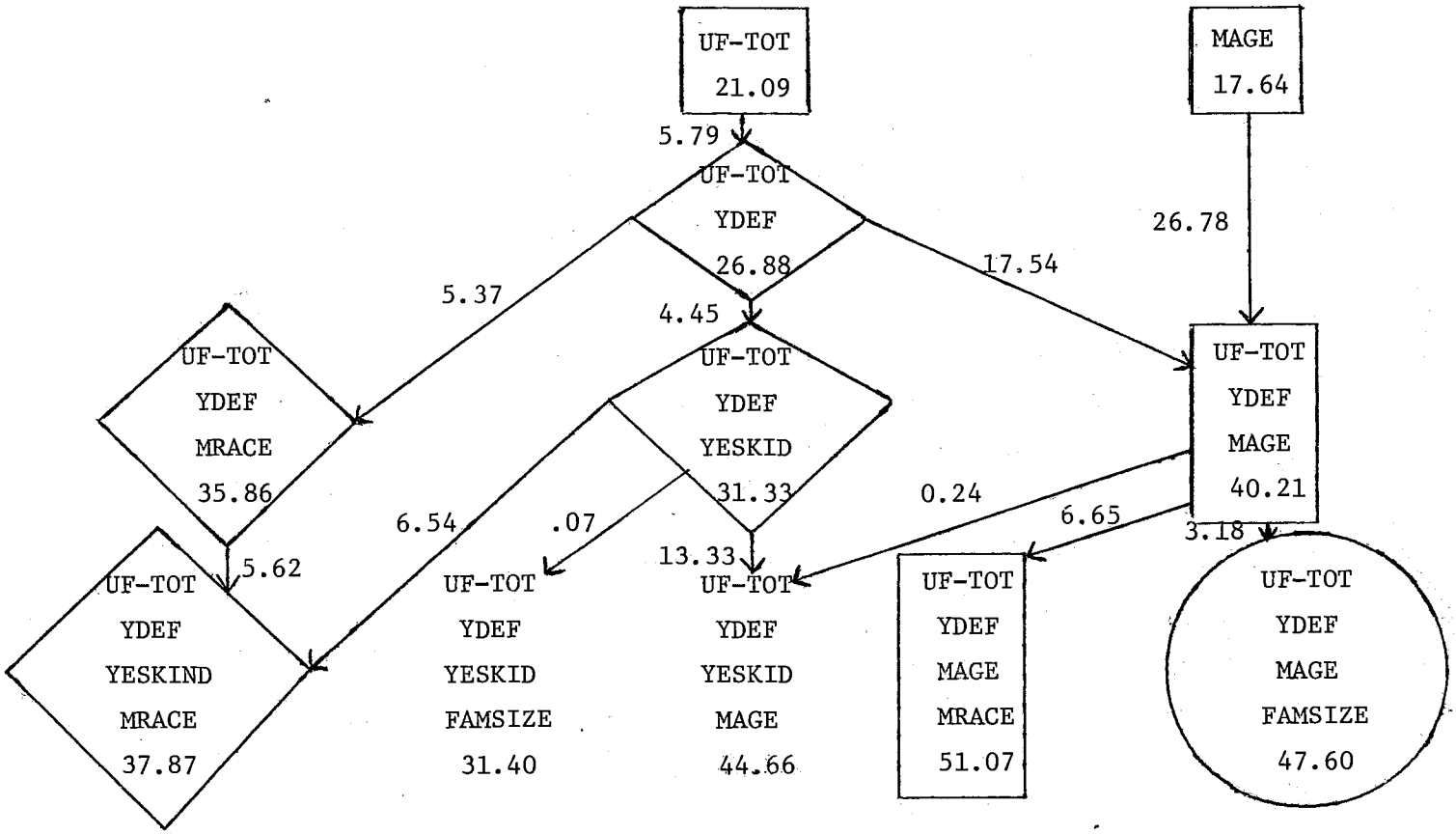
Variables	Mean Values	Logit Coefficients[a] Equation #						
		9	10	11	12	13	14	15
CONSNT	.089	-3.00	-1.69	-3.33	2.59	-2.09	-1.71	-1.54
UF-TOT	.043	8.17[b]	6.98[c]	7.72[b]	7.18[b]	7.02[c]	6.97[c]	6.83[c]
YDEF(ooo's)	2.308	.098	.102	.082	.135	.095	.099	.129
YESKID	.615			.569	.478	.254[c]		
MRACE	.132	.364[c]		.404[c]			.421[c]	
FAMSIZE	5.09				- .143[b]			- .084[c]
MAGE	36.4		- .035			- .027	- .036	- .028
χ^2[d]		13.34	20.88	19.81	21.01	21.76	23.21	21.81

Figure 3.1 Chi-Square Values for Selected Logit Equations, 1971 CPS



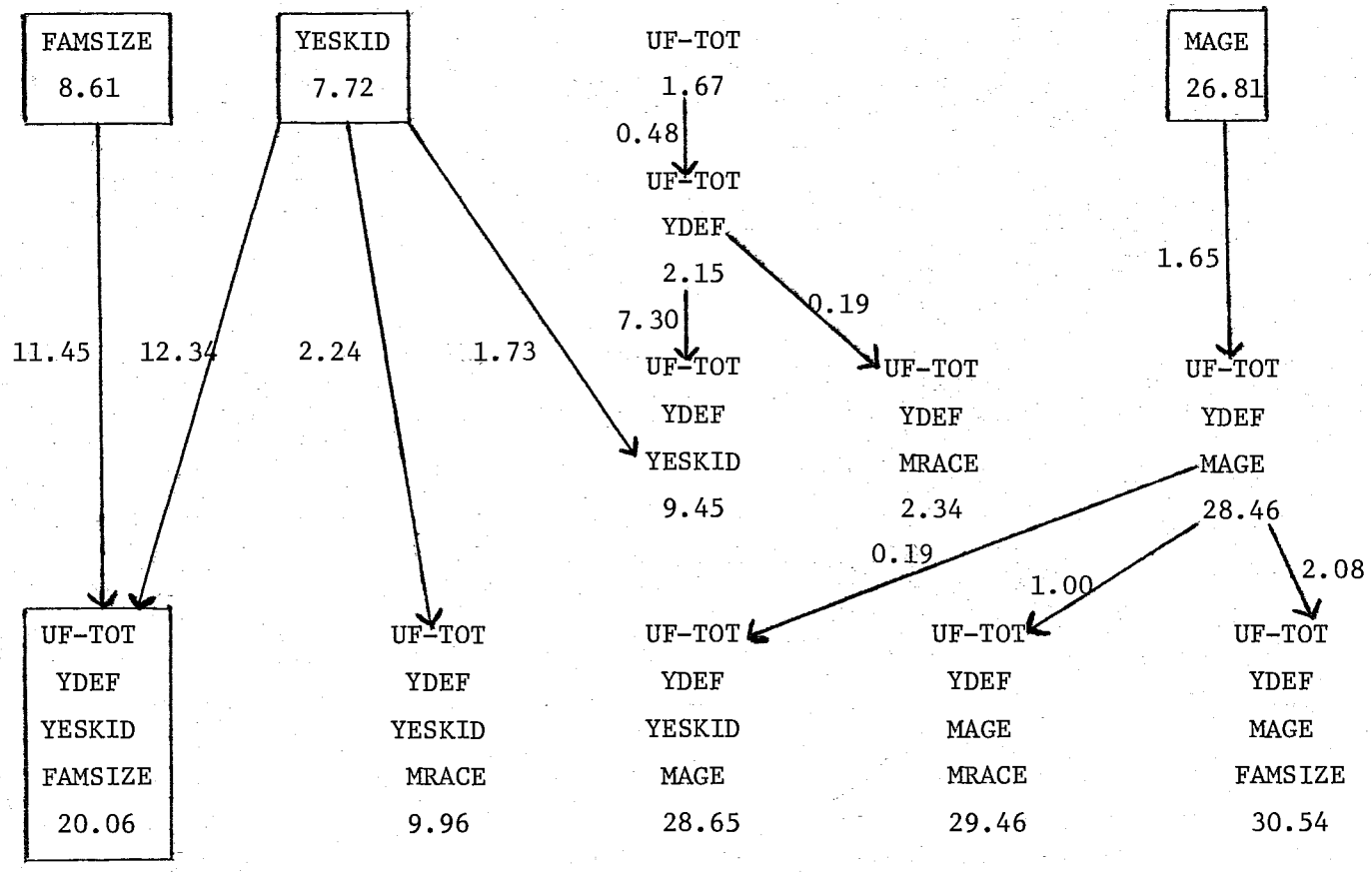
NOTES: Equations enclosed by rectangles are significant at the .01 level
Equations enclosed by diamonds are significant at the .05 level
Equations enclosed by circles are significant at the .10 level
Unenclosed equations are not significant at the 0.10 level

Figure 3.2 Chi-Square Values for Selected Logit Equations, 1972 CPS



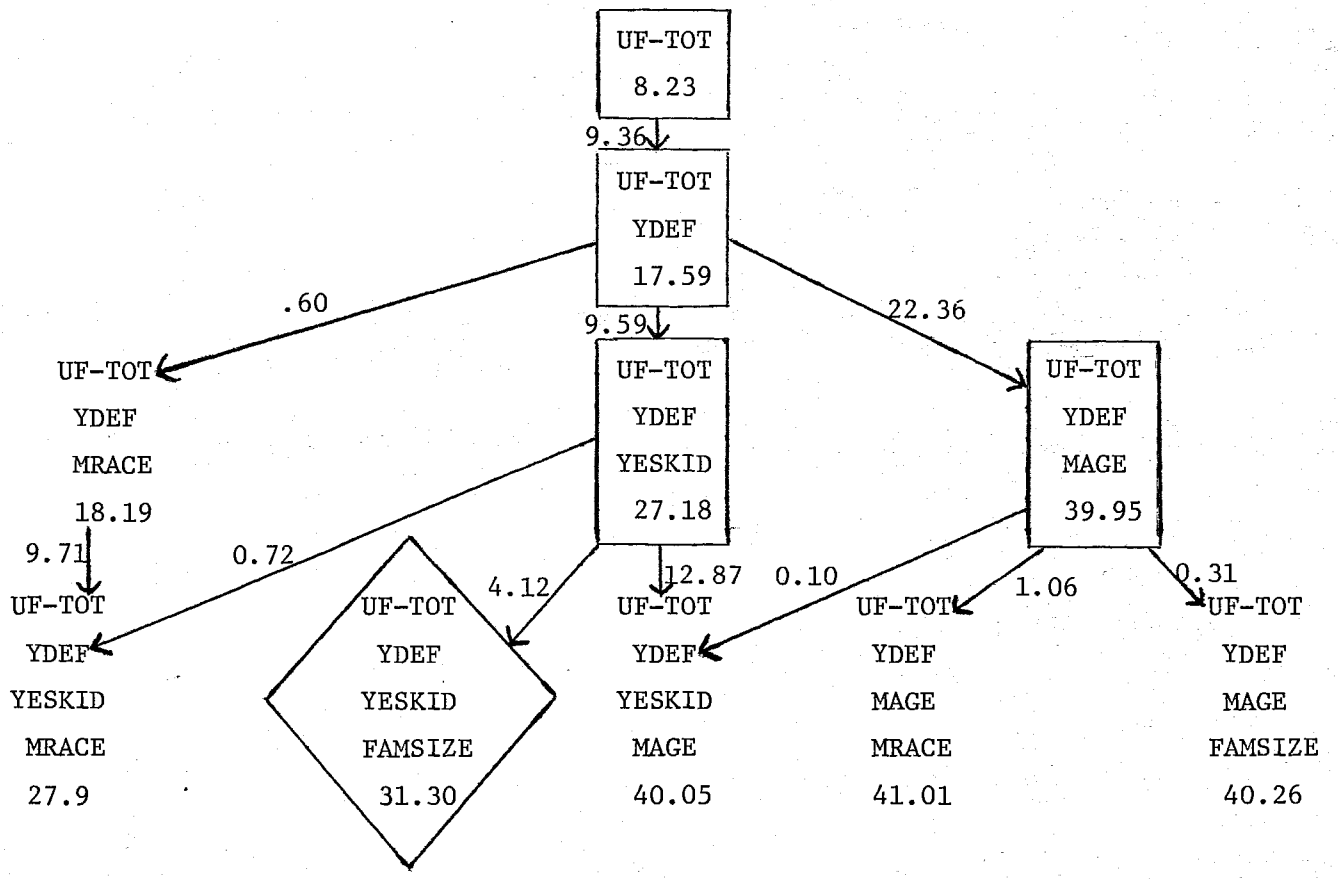
NOTES: Equations enclosed by rectangles are significant at the .01 level
Equations enclosed by diamonds are significant at the .05 level
Equations enclosed by circles are significant at the .10 level
Unenclosed equations are not significant at the 0.10 level

Figure 3.3 Chi-Square Values for Selected Logit Equations, 1973 CPS



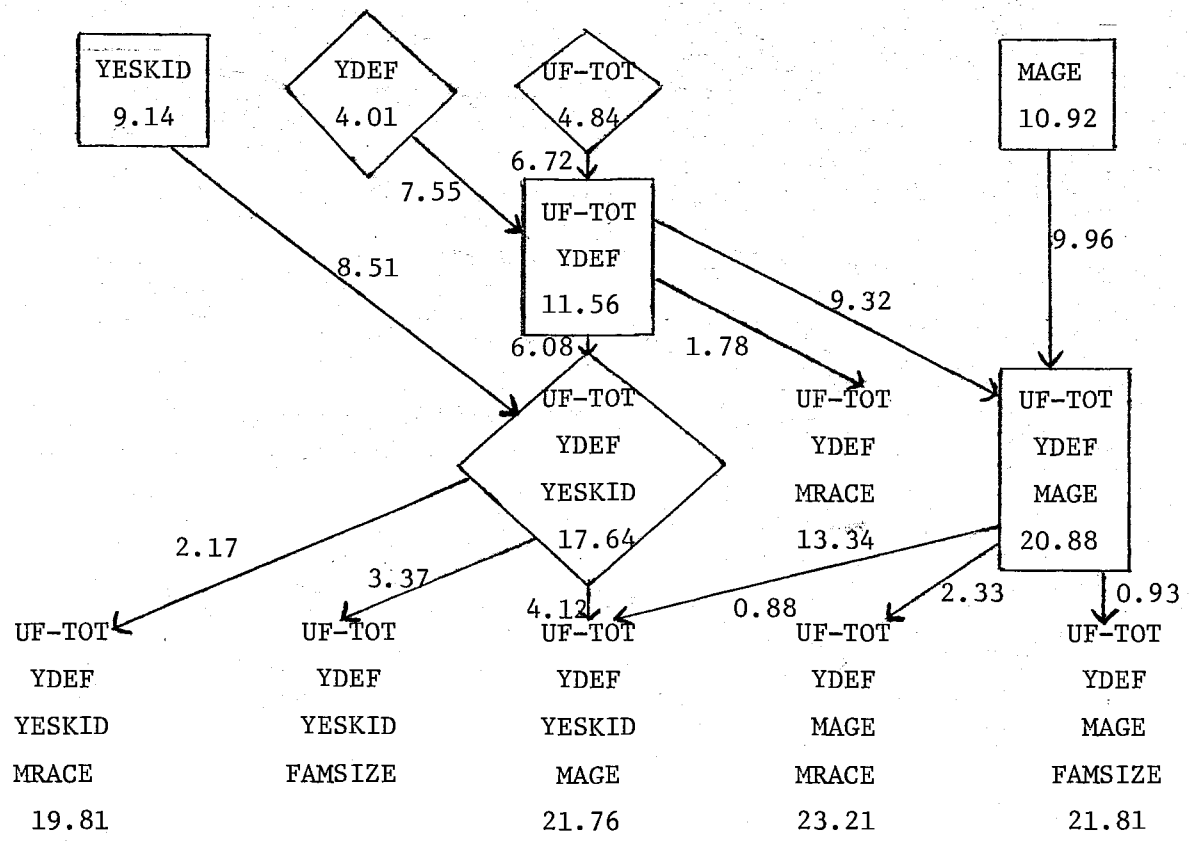
NOTES: Equations enclosed by rectangles are significant at the .01 level
Equations enclosed by diamonds are significant at the .05 level
Equations enclosed by circles are significant at the .10 level
Unenclosed equations are not significant at the 0.10 level

Figure 3.4 Chi-Square VAlues for Selected Logit Equations, 1974 CPS



NOTE: Equations enclosed by rectangles are significant at the .01 level
Equations enclosed by diamonds are significant at the .05 level
Equations enclosed by circles are significant at the .10 level
Unenclosed equations are not significant at the 0.10 level

Figure 3.5 Chi-Square Values for Selected Logit Equations, 1975 CPS



NOTES: see notes to Figure 1

side variable, UF-TOT was significant at the .01 level. Including the income deficit term, YDEF, yields a new equation significant at the .01 level. Race or age of family head (MRACE, MAGE, respectively) are significant additions to the 2-variable equation at the .01 level; presence of preschool children (YESKID, a dummy variable) is a significant addition only at the .10 level. To an equation including three variable, UF-TOT, YDEF, and MRACE, the addition of YESKID is significant at the .10 level. To an equation including the 3 variables UF-TOT, YDEF, and MAGE, the addition of MRACE is significant at the .01 level. These results from the 1971 CPS indicate that availability of UF and size of income deficit are important factors in determining the probability of receiving public assistance. Controlling for these factors, blacks were more likely to have received public assistance. The family's life cycle position -- as demonstrated by the presence of preschool children or by the proxy, age of husband -- was another important factor, with younger families more likely to be recipients.

Similar results were obtained for the 1972 CPS sample, reported in Table 3.16 and Figure 3.2. Availability, as measured by UF-TOT, was significant at the .01 level; adding "income deficit" as a factor was significant at the .05 level. The addition of MRACE or YESKID to the 2-variable equation was significant at the .05 level; the addition of MAGE was significant at the .01 level. A check on the χ^2 of MAGE alone indicated that adding UF-TOT and YDEF to an equation with MAGE alone

was also significant at the .01 level. YESKID was a significant addition (at the .05 level) to the 3-variable equation including UF-TOT, YDEF, and MRACE; MRACE was a significant addition (at the .01 level) to the 3-variable equation including UF-TOT, YDEF, and MAGE. Here again, we find that the continuous variable, MAGE, seems a more powerful proxy for family life cycle variables than the dummy variable YESKID.

Results for the 1973 CPS sample are strikingly different from the other four years. For this year, neither the availability measure nor the income deficit measure are at all significant. Knowing UF-TOT and YDEF for an individual family does not allow us to improve on the group incidence estimate, 9.8 percent, in predicting receipt of public assistance. Nor do these variables distinguish recipients from non-recipients. The family life cycle variables are the only significant ones for this year. Younger husbands, smaller families, and presence of preschool children are each significant factors (at the .01 level) associated with the receipt of public assistance. Aside from these three single-variable equations, the only other significant equation included both YESKID and FAMSIZE (along with the presumably insignificant UF-TOT and YDEF). Why the 1973 CPS results are so different from the other years is not at all clear. Two contributing causes could be: a) the 1973 CPS represents a transition for the survey population, in changing over from the 1960 census base to the 1970 census base; b) the 1973 CPS refers to income during the previous year, and 1972 was a year of transition for the UF program -- several states dropped or added the program

during the year, so that families in our sample might have had access to the program only for part of the year.

The 1973 CPS also marks a change in the significance of the race variable: MRACE is significant for the 1971-72 CPS samples, but insignificant for the 1973-75 CPS samples. There are at least two possible explanations for this pattern of significance. First, the list of AFDC-UF states that comprise our sample population differs between 1971, 1972, and 1973-75 (refer to Table 3.11). The two earlier years include states like Missouri, Maryland, West Virginia and Oregon, not included in the later years. The later years include Massachusetts and Michigan/Wisconsin, not included in the earlier years. Therefore, the composition of the group of AFDC-UF states is more heavily weighted toward urban industrial states in the later years. If urbanization is related to receipt of public assistance, and if low-income blacks were more heavily urbanized than low-income whites in our earlier group of AFDC states, we would expect a racial difference to emerge, reflecting a difference in patterns of urbanization. As the whole sample became more urbanized, we would expect the racial difference to disappear.

A second possible explanation relates to the phenomenon of information dispersion. If in the earlier years, eligible families in the black community were better informed than eligible white families about the availability of AFDC-UF, we would expect them to have higher participation rates. As better information spread through the white community, we would expect the racial difference to disappear. A similar phenomenon seems to have occurred within the regular AFDC program.

Results for the 1974 CPS are more consistent with our general pattern than the 1973 CPS results. The availability measure, UF-TOT, is significant at the .01 level; the addition of the income deficit term, YDEF is also significant at the .01 level. The addition of the family life cycle variables, YESKID or MAGE, to the 2-variable equation are each significant at the .01 level. Finally, the addition of FAMSIZE to a 3-variable equation including UF-TOT, YDEF, and YESKID is significant at the .05 level. Other things equal, greater UF availability, greater income deficit, presence of preschool children, and smaller family size (proxy for younger family) increase the chance that a family will receive public assistance. Alternatively, greater UF availability, greater income deficit, and younger husband (also a proxy for younger family) increase the chance that a family will receive public assistance.

Finally, our results for the 1975 CPS show that single variable equations with YDEF and UF-TOT are each significant at the .05 level, but that a 2-variable equation with UF-TOT and YDEF together is a significant (at the .01 level) improvement over both single-variable equations. The family life cycle variables YESKID and MAGE are each significant at the .01 level. Adding UF-TOT and YDEF to MAGE is significant at the .01 level; adding UF-TOT and YDEF to YESKID is significant at the .05 level.

Sensitivity Analysis

Controlling for UF-availability, factors including the size of the income deficit (YDEF), race (MRACE), and family life cycle variables such as husband's age (MAGE) and presence of children under 6 (YESKID), significantly influenced the probability of receiving public assistance for families in our 1971 CPS sample. In order to see how the dependent variable responded to changes in the independent variables in equation 14 (Table 3.15) benchmark probabilities were calculated separately for blacks and whites, using the mean values for the continuous variables. Table 3.20 presents the benchmark probabilities, and also the calculated probabilities for blacks and for whites assuming varying levels of YDEF (holding MAGE and UF-TOT at their mean); varying levels of MAGE (holding UF-TOT and YDEF at their means); and varying combinations of YDEF and MAGE (holding UF-TOT at its mean). For whites, the effect of varying YDEF was to reduce the benchmark probability by 18.9% if YDEF = 0, and to increase it by 125.8% if YDEF = 8,000.[7] Varying MAGE reduced the

[7]While it may seem odd that the probability of receiving public assistance is greater than zero even when there is no income deficit, at least two reasons may plausibly account for this: 1) it is possible to have no income deficit on an annual basis but still be eligible for public assistance for some months out of the year, depending on the monthly pattern of income; and 2) our expected earnings estimates were based only on personal characteristics and did not account for labor demand conditions in specific occupations and industries - therefore, we may have overestimated expected earnings and underestimated the income deficit.

Table 3.20

Calculated Probabilities of Receiving Public Assistance

1971 CPS

Values of Independent Variables	White		Black		
Equation 14	Probability of Receiving Public Assistance	% Change from Benchmark	Probability of Receiving Public Assistance	% Change from Benchmark	% Increase Between Black & White
Benchmark: UF-TOT, MAGE, and YDEF at their mean values (UF-TOT = .071; MAGE = 36.65; YDEF = $1586)	.0528	-0-	.1059	-0-	100.4%
UF-TOT & MAGE at mean, YDEF = 0	.0429	- 18.9	.0868	- 18.0	102.5
" " YDEF = $1000	.0489	- 7.4	.0984	- 7.0	101.2
" " YDEF = $4000	.0722	36.8	.1418	34.0	96.4
" " YDEF = $8000	.1192	125.8	.2232	110.9	87.2
UF-TOT & YDEF at mean, MAGE = 25	.0801	51.7	.1560	47.4	94.8
" " MAGE = 45	.0389	- 26.3	.0792	- 25.2	103.4
UF-TOT at mean, MAGE = 25 YDEF = $8000	.1745	230.4	.3098	192.7	77.5
UF-TOT at mean, MAGE = 45 YDEF = 0	.0315	- 40.3	.0646	- 41.2	105.0
Equation 11					
Benchmark: UF-TOT, YDEF at their mean values, no children under 6	.0441	-0-	.0817	-0-	85.3
UF-TOT, YDEF at their mean values, presence of children under 6	.0637	44.6	.1161	42.1	82.2

benchmark probability by 26.3% if MAGE = 45, and increased it by 51.7% if MAGE = 25. Finally, the combination of life cycle and income deficit variables showed that the benchmark probability would be reduced by 40.3% for MAGE = 45 and YDEF = 0, while it would increase by over 200% for young families with a large income deficit (MAGE = 25 and YDEF = $8,000). Similar results were obtained for the black families. The calculated probability of public assistance receipt was generally about double that of white families. However, the percentage difference between black and white families was reduced as other variables took on values increasing the probability of public assistance receipt.

To test for the sensitivity of the dependent variable to the presence of preschool children, equation #11 benchmark probabilities were calculated for white and black families with and without preschool children, holding UF-TOT and YDEF at their mean values. For white families, the calculated probability for those with preschool children is 44.6% higher than the benchmark; similarly, for black families it is 42.1% higher. The results for the 1972 CPS sample, reported in Table 3.21, are analogous to those reported for the 1971 CPS sample.

Our best equation for the 1973 CPS included UF-TOT, YDEF, FAMSIZE, and YESKID. Holding UF-TOT at its mean level and computing separate probabilities for those with and without preschool children, the effect of varying YDEF is similar to those reported for the previous years; the effect of varying FAMSIZE is substantially the same as that obtained

Table 3.21

Calculated Probabilities of Receiving Public Assistance

1972 CPS

Values of Independent Variables	White		Black		
Equation 14	Probability of Receiving Public Assistance	% Change from Benchmark	Probability of Receiving Public Assistance	% Change from Benchmark	% Increase Between Black & White
Benchmark: UF-TOT, MAGE, and YDEF at their mean values	.0603	-0-	.1118	-0-	85.4
(UF-TOT = .071; MAGE = 36.57; YDEF = $1392)					
UF-TOT & MAGE at mean, YDEF = 0	.0525	- 12.9	.0981	-12.2	86.7
" " " YDEF = $1000	.0580	- 3.8	.1078	- 3.6	85.8
" " " YDEF = $4000	.0778	29.0	.1419	27.0	82.5
" " " YDEF = $8000	.1511	150.7	.2588	131.6	71.2
UF-TOT & YDEF at mean, MAGE = 25	.0975	61.7	.1749	56.4	79.3
" " " MAGE = 45	.0420	- 30.3	.0792	-29.1	88.5
UF-TOT at mean, MAGE = 25, YDEF = 8000	.1776	194.5	.2975	166.1	67.5
" " MAGE = 45, YDEF = 0	.0365	- 39.4	.0692	-38.1	89.5
Equation 11					
Benchmark: UF-TOT, YDEF at their mean values, no children under 6	.0480	-0-	.0895	-0-	86.2
UF-TOT, YDEF at their mean values, presence of children under 6	.0758	57.8	.1377	53.9	81.7

Table 3.22

Calculated Probabilities of Receiving Public Assistance

1973 CPS

Values of Independent Variables — Equation 12	No Children under 6: Probability of Receiving Public Assistance	No Children under 6: % Change from Benchmark	Children under 6 present: Probability of Receiving Public Assistance	Children under 6 present: % Change from Benchmark	% Increase Between Families with & without Children under 6
Benchmark: UF-TOT, YDEF, and FAMSIZE at their mean values (UF-TOT = .064; YDEF = $1263; FAMSIZE = 5.19)	.0725	-0-	.1038	-0-	43.1
UF-TOT & FAMSIZE at mean, YDEF = 0	.0626	- 13.7	.0899	- 13.4	43.7
" " " YDEF = $1000	.0704	- 3.0	.1008	- 2.9	43.2
" " " YDEF = $4000	.0994	37.0	.1404	35.2	41.3
" " " YDEF = $8000	.1542	112.6	.2126	104.7	37.8
UF-TOT & YDEF at mean, FAMSIZE = 3	.1133	56.1	.1591	53.2	40.4
" " " FAMSIZE = 7	.0495	- 31.7	.0716	- 31.0	44.6
UF-TOT at mean, FAMSIZE = 7, YDEF = 0	.0426	- 41.3	.0618	- 40.5	45.1
" " FAMSIZE = 3, YDEF = 8000	.2295	216.3	.3060	194.7	33.4

Table 3.23

Calculated Probabilities of Receiving Public Assistance

1974 CPS

Values of Independent Variables — Equation 12	No Children under 6: Probability of Receiving Public Assistance	No Children under 6: % Change from Benchmark	Children under 6 Present: Probability of Receiving Public Assistance	Children under 6 Present: % Change from Benchmark	% Increase Between Families with & without Children under 6
Benchmark: UF-TOT, YDEF, & FAMSIZE at their mean values (UF-TOT = .050; YDEF = $1132; FAMSIZE = 5.12)	.0605	-0-	.1037	-0-	71.5
UF-TOT & FAMSIZE at mean, YDEF = 0	.0498	- 17.6	.0862	- 16.9	72.9
" " " YDEF = $1000	.0591	- 2.2	.1015	- 2.1	71.7
" " " YDEF = $4000	.0976	61.4	.1628	57.0	66.8
" " " YDEF = $8000	.1824	201.5	.2862	175.9	57.0
UF-TOT & YDEF at mean, FAMSIZE = 3	.0802	32.6	.1355	30.6	69.0
" " " FAMSIZE = 7	.0469	- 22.5	.0812	- 21.7	73.3
UF-TOT at mean, FAMSIZE = 7, YDEF = 0	.0385	- 36.3	.0672	- 35.2	74.4
" " FAMSIZE = 3, YDEF = $8000	.2319	283.5	.3519	239.2	51.7

from varying MAGE in the 1971 and 1972 samples: FAMSIZE is another proxy for family life cycle, since smaller families are also generally younger families. With all continuous variables evaluated at their mean, the presence of preschool children increases the probability of receiving public assistance by 43.1%. However, as other variables take on values that would increase the probability, the percentage difference between families with and without preschool children is reduced (e.g., it is only 33.4% for 3-person families with an income deficit of $8,000).

The same equation showed a somewhat different pattern of sensitivities for the 1974 CPS. Compared with the 1973 sample, the later year showed less sensitivity to changes in FAMSIZE, but greater sensitivity to changes in YDEF and to the presence of preschool children. Here again, however, as other variables took on values that would increase the probability of receiving public assistance, the percentage difference between families with and without preschool children was reduced. Another significant equation for the 1974 sample included only UF-TOT, YDEF, and MAGE. Results were generally consistent with previous years, though there was somewhat greater sensitivity to MAGE than in 1971 or 1972. The 1975 results showed less sensitivity to YDEF than in previous years, a sensitivity to MAGE at almost the 1971 level, and a sensitivity to YESKID above its 1971-72 level, but not quite as high as its 1974 level.

Table 3.24

Calculated Probabilities of Receiving Public Assistance

1974 CPS

Values of Independent Variables

Equation 10	Probability of Receiving Public Assistance	% Change from Benchmark
Benchmark: UF-TOT, YDEF & MAGE at their mean values		
(UF-TOT = .050; YDEF = $1132; MAGE = 36.66	.0807	-0-
UF-TOT & MAGE at mean, YDEF = 0	.0692	- 14.2%
" " " YDEF = $1000	.0793	- 1.8
" " " YDEF = $4000	.1179	46.1
" " " YDEF = $8000	.1937	140.0
UF-TOT & YDEF at mean, MAGE = 25	.1380	71.0
" " " MAGE = 45	.0540	- 33.0
UF-TOT at mean, MAGE = 25, YDEF = $8000	.3047	277.5
" " MAGE = 45, YDEF = 0	.0462	- 42.8

Table 3.25

Calculated Probabilities of Receiving Public Assistance

1975 CPS

Values of Independent Variables

Equation 10	Probability of Receiving Public Assistance	% Change from Benchmark
Benchmark: UF-TOT, YDEF, and MAGE at their mean values	.0816	-0-
(UF-TOT = .043; YDEF = $2202; MAGE = 36.42)		
UF-TOT & MAGE at mean, YDEF = 0	.0662	- 18.9
" " " YDEF = $1000	.0729	- 10.8
" " " YDEF = $4000	.0966	18.3
" " " YDEF = $8000	.1387	69.9
UF-TOT & YDEF at mean, MAGE = 25	.1165	42.7
" " " MAGE = 45	.0620	- 24.0
UF-TOT at mean, MAGE = 25, YDEF = $8000	.1929	136.2
" " MAGE = 45, YDEF = 0	.0501	- 38.6
EQUATION 8		
Benchmark: UF-TOT, YDEF at their mean values, no children under 6	.0604	-0-
UF-TOT, YDEF at their mean values, presence of children under 6	.1004	66.23

In each of the five years, the probability of receiving public assistance is highly sensitive to changes in our measures of economic need and family life cycle. Reducing the estimated income deficit to zero would reduce the probability by 12-19% while raising the estimated income deficit to $8,000 would increase the probability by 70-200%, ceteris paribus. Reducing husband's mean age by a decade would, ceteris paribus, raise the probability by 47-71%; raising it a decade reduces the probability by 25-33%. Presence of preschool children increases the probability by 33-75%; larger family size reduces the probability by 21-32% while smaller family size increases it by 30-56%. In the two earliest years, the probability was 67-105% higher for blacks, holding all else constant; in the later years, the racial differences were not significant.

Conclusion

We began our study of the AFDC-UF program with the aim of developing a "macro-data" model to explain caseload dynamics. It quickly became apparent that, unlike the situation in the AFDC-R program, where the vast majority of eligibles were already program participants, only a minority of low income intact families were public assistance recipients. Therefore, understanding what factors affected participation rates became a crucial step in the eventual modeling of AFDC-UF caseload dynamics.

Our model for the probability of public assistance receipt focused on a) the role of economic need, measured by the difference between a benchmark income and the family's expected income (YDEF, the family's "income deficit") and b) the role played by life cycle constraints, measured by presence of pre-school children (YESKID), husband's age (MAGE), or family size (FAMSIZE). Controlling for the supply-side factor of UF-availability (UF-TOT, itself significant in 4 of the 5 years), the addition of the income deficit variable, YDEF, was also significant in 4 of the 5 years. One or more of the life cycle variables (YESKID, MAGE, FAMSIZE) was a significant addition (at the .01 level) to the logit equation in each of the five years. Race was significant only in the two earlier years.

Sensitivity analysis showed that participation rates are highly sensitive to the income deficit and life cycle variables. Compared with the benchmark probability based on mean values, participation rates would more than double for those families with young fathers (MAGE = 25) and high income deficits (YDEF = 8000); they would be reduced by about two-fifths for those families with older fathers (MAGE = 45) and no yearly income deficit. These economic and demographic characteristics are important factors affecting the likelihood that a low income intact family will participate in a public assistance program. Further research is necessary to uncover additional factors affecting participation rates.