THE SURVEY OF INCOME AND PROGRAM PARTICIPATION

THE STRUCTURE AND CONSEQUENCES OF ELIGIBILITY RULES FOR A SOCIAL PROGRAM: A STUDY OF THE JOB TRAINING PARTNERSHIP ACT (JTPA)

No. 227

T.J. Devine
J.J. Heckman
University of Chicago

U.S Department of Commerce BUREAU OF THE CENSUS

The Structure and Consequences of Eligibility Rules for a Social Program: A Study of the Job Training Partnership Act (JTPA)

Theresa J. Devine
American Bar Foundation and
University of Chicago

James J. Heckman
University of Chicago and
American Bar Foundation

Current Draft: November 22, 1995
Comments Welcome

ABSTRACT

This paper examines the structure and consequences of eligibility rules for a major social program in the U.S. - the Job Training Partnership Act. We find that temporal and geographic variation in written eligibility rules has little consequence for the size and composition of the eligible population, but stable rules are important. The stable eligibility rules are inequitable because they discriminate on the basis of income sources and family status. We examine whether this inequity is a consequence of efficient screening, given standard objectives for government intervention in human capital markets. Many - but not all - of the JTPA eligibility rules are consistent with an efficient screening strategy.

Theresa Devine is a Visiting Scholar at the American Bar Foundation and Research Associate at the Harris School Center for Social Program Evaluation and Research Affiliate in the Population Research Center of the University of Chicago. James Heckman is Henry Schultz Distinguished Service Professor of Economics and Director of the Harris School Center for Social Program Evaluation at the University of Chicago and a Fellow of the American Bar Foundation. This research was supported by grants from the Russell Sage Foundation, NSF-SBER-91-11455, NSF-SES-90-23-776, NSF-SES-90-103-07, the American Bar Foundation, the Census Research Fellow Program, and NIH Postdoctoral Traineeship Program. We thank Jingjing Hsee for her excellent research assistance and David Hsu and Gerald Marschke for help in an early stage of the project. We also thank Joe Altonji, Jonathan Gruber, Jim Poterba, Kent Smith, and colleagues at the American Bar Foundation, Canadian Economics Association Meetings, Canadian Economic Reform Forum, University of Chicago, University of Illinois, NBER Labor Studies Summer Institute, NBER Public Economics Meeting, Northwestern, Ohio State, Population Association of America Meetings, Princeton, and Rutgers for many useful comments.

1. Introduction

This paper considers the structure and consequences of the eligibility rules for a major social program -- the Job Training Partnership Act (JTPA).[1] The primary goal of the JTPA program is to improve the skills and labor market opportunities of disadvantaged workers. Toward this end, the program subsidizes direct training and job search costs for its participants.[2] With a budget exceeding 4 billion (1995) dollars, JTPA is the largest Federal training program in the United States for the disadvantaged.

Eligibility represents one of four hurdles required for JTPA participation. Like many government programs, a person participates in JTPA if: (1) he or she is *eligible* for the program, (2) he or she is *aware* of the program, (3) he or she *applies* for admission to the program, and (4) he or she is *accepted* into the program. Differences in program participation rates across groups in the population thus result from differences in groups rates of satisfying one or more of these conditions. Concerns about inequity in access to government programs typically depend on the perceived source of the variation. Decisions not to participate by eligible and informed persons typically raise less concern than do biased eligibility rules, differential access to information, or bureaucratic selection procedures. The latter sources of variability pose fundamentally different public policy problems than does variability arising from informed individual choice.

This paper summarizes part of our attempt to decompose demographic differentials in JTPA participation into contributions from the four sources. Elsewhere we examine awareness of JTPA and participation of persons who are both eligible and aware (Heckman and Smith, 1994a revised 1995). The present paper focuses on the operation of JTPA eligibility rules.

JTPA is a not an entitlement program. Consequently, eligibility and acceptance into the program are distinct states even for people who wish to go into it. Eligibility rules place bounds on the choice set available to local administrators. That is, eligibility rules are direct tools available to central policy makers for screening out certain types of persons who might be admitted by local bureaucrats. However, the eligibility rules cannot be used to guarantee admission of anyone into the JTPA program. The JTPA program has performance standards that are also set at the center level. Bonuses associated with these standards reward local bureaucrats who admit certain types of persons into the program. Such standards are one way to counteract local discretion in selecting certain

---

[1]We focus on JTPA programs for adults ages 22 to 54 (Title II-A) and youth ages 16 to 21 (Title II-A initially and Title II-C since the 1992 Amendments). With a budget of 2 out of 3 JTPA dollars, these programs represent the largest component of JTPA (See U.S. GAO (1994) for listings of all federal training programs (including each JTPA program) by targeted group and funding level.) Complete findings from our analysis of JTPA eligibility are presented in Devine and Heckman (1994a). See Appendix A therein for discussion of other JTPA Titles and provisions.

[2]JTPA is not a direct income transfer program. Title II-A and II-C JTPA programs may provide "needs-based" payments for child care, transportation, and other support services. Also, "need-based" payments comparable to stipends may be provided on an individual basis, if such payments would allow participation (S.204(27) of the Act). Unlike JTPA's predecessor CETA, however, stipends are *not* provided automatically and, in practice, funds are rarely budgeted for "needs-based" payments.

persons. The JTPA eligibility rules thus operate to screen out persons that local bureaucrats might otherwise admit, although such control is imperfect.

Legislation is the work of committees and legislators. No single mind crafts the contents of a bill and, even if it did, legislation evolves over time. Once a program is passed by the legislature, rules must be developed for its implementation. In a block grant program like JTPA, decentralized administration adds further rounds of bureaucratic decisionmaking. In the particular case of JTPA, the Department of Labor finances the program and the Employment and Training Administration in the Department of Labor provides program guidelines, but state and local authorities share responsibility for the operation of the program.[3] Among other things, states are responsible for preparation and distribution of written eligibility rules that local administrators use to determine the eligibility status of individual applicants.

These factors create the possibility for inconsistency, inequity, and even perversity in the provisions and implementation of legislation. One interpretation of the evidence presented in this paper is that this possibility is realized in the case of JTPA. However, another interpretation is possible.

The alternative view stresses that measured inequities are a consequence of attempts to target government services efficiently. Lawyers, politicians, and political scientists often stress equity as the major (and perhaps only) criterion for the allocation of government services. In his study of local justice, Elster (1992) considers different norms of equity that are used by governments to distribute scarce resources (also see Young, 1994). This paper emphasizes that program eligibility rules may be an attempt to approximate efficient screening devices for attaining a particular objective. However, efficient rules may be inequitable. Using alternative economic models for government provision of services in human capital markets, we demonstrate that their efficient provision may result in inequitable outcomes. Efficiency in this context is defined as achieving program objectives at the lowest cost, subject to constraints such as keeping recipient or parental utility constant. Equity is defined on the basis of individual or family income.

At present, a person is eligible for JTPA if: (i) family income for the 6 months preceding eligibility determination is beneath a designated threshold, (ii) any member of the person's family receives cash public assistance, or (iii) the person receives Food Stamps or has been determined eligible for Food Stamps in the 6 preceding months. Using data from the Survey of Income and Program Participation (SIPP), we establish the following facts about the eligibility rules:

(1) Under the criterion that a dollar is a dollar, irrespective of the income source, JTPA eligibility rules operate inequitably. The rules discriminate by *source of income*. Excluded from

[3]JTPA programs authorized by Title II-A and II-C may be coordinated with programs that are state-funded or state-federal matched funded (including Title III of JTPA, which is targeted at "Displaced Workers"), but Title II-A and II-C programs are fully federally funded.

family income are unemployment benefits and cash public assistance. A working person earning a low income is therefore less likely to be eligible than a person with the same amount of income originating from unemployment insurance or public assistance. A person in a family in which any member receives any amount of cash public assistance is immediately eligible. The eligibility rules thus provide an incentive for persons who desire JTPA services to choose welfare or unemployment over employment.

(2) The eligibility rules clearly violate equity defined in terms of *individual* characteristics. The eligibility of an individual is based on *family* income and the participation of *family members* in cash public assistance programs.[4] For these rules to be equitable, all families must provide resources to their members in the same way, independent of the source of income. This is contrary to the evidence presented by Thomas (1992) and Lundberg *et al.* (1994). The eligibility rules also define family on the basis of the *usual residence* of the individual. Financial transfers between family members who live apart from each other are excluded from the family incomes of recipients, and the recipients of such transfers are not counted toward the family income thresholds for persons who make such payments. As a consequence of the family basis for determining eligibility, the rules provide incentives to alter residential and family status. These incentives are likely to be most powerful for young adults who have flexibility in establishing family and residential status.

(3) We examine whether the JTPA eligibility rules produce "Ashenfelter's Dip" in earnings. Ashenfelter (1978) first noted the frequently-reported finding that training program *participants* experience a decline in their earnings prior to their participation in the program. We find that the structure of JTPA eligibility rules contributes to Ashenfelter's Dip for adult males, but most eligible persons do not experience a decline in their earnings prior to eligibility. For eligible youth, we observe a dip in *family income*, but no pronounced dip in their own earnings. Thus, the Ashenfelter's Dip that is observed for participants is not simply the consequence of JTPA eligibility rules, and factors other than eligibility are at work in determining which eligibles enter the program.

(4) We examine the relationship between *poverty* and *eligibility*. The two are not equivalent. Although most of the poor are eligible, not all of the eligibles are poor. To the extent that non-poor eligibles represent more promising applicants from the perspective of performance-rated administrators, the broader application of the eligibility rules serves to limit JTPA opportunities for the poor.

(5) Using estimates of earnings gains from JTPA participation based on data from the National JTPA Study, we measure the success of the program by considering escape from eligibility after participation. We find that less than 8 percent of all eligible persons would become ineligible if *all* eligibles were to participate in the program. This finding reveals the ineffectiveness of the current JTPA program.

---

[4]Note also that although the Food Stamps eligibility criterion is stated in terms of *individual* Food Stamps receipt and eligibility, a person's eligibility for the Food Stamps program depends on *household* income, assets, and need levels. Thus, eligibility by this criterion depends indirectly on family characteristics.

(6) We consider how well eligibility for JTPA can be studied using data from annual surveys like the March Current Population Survey (CPS). Data from the March CPS and similar sources are too crude to determine eligibility precisely. It is important to determine the degree of inaccuracy of estimates of eligibility based on such data, since many government agencies monitor eligibility for JTPA using widely-available CPS data. We find that approximations to eligibility based on the CPS are quite good.

(7) We find that state-to-state variation in JTPA eligibility rules has little effect on the size or composition of the JTPA-eligible population. The same is true for recently legislated changes in JTPA eligibility rules that have been the topic of much concern. It is the stable features of the eligibility rules -- such as the family basis and the exclusion of certain income -- that play the major role in screening persons out of JTPA.

The paper is organized in the following way. We discuss major aspects of the JTPA eligibility rules in Section 2. In Section 3, we present an economic model of efficient targeting of government training to consider whether eligibility rules and screening criteria can be justified. In Section 4, we discuss the SIPP data. In Sections 5 through 8, we present empirical evidence on eligibility rules and their consequences for major demographic groups. Section 5 presents evidence on the consequences of geographic and temporal variation in eligibility rules. Section 6 examines relatively stable aspects of the rules that determine the eligible population. The stable aspects include income exclusions, participation in welfare programs as an automatic eligibility criterion, the family basis of the rules, and the 6-month window used for income measurement. Section 7 presents findings on the relationship between poverty and JTPA eligibility. Section 8 presents evidence that "Ashenfelter's Dip" in earnings is not a consequence of program eligibility rules. Section 9 presents estimates of the impact of JTPA participation on the subsequent eligibility of participants. Section 10 examines the suitability of CPS-type data for determining eligibility for JTPA. Section 11 summarizes our findings.

2. Eligibility for JTPA[5]

An individual is eligible for programs authorized by Title II of JTPA if he or she is "*economically disadvantaged*." According to the Job Training Partnership Act of 1982, as amended, an individual is economically disadvantaged if he or she is:

> (i) in a family that has had income in the 6 months preceding the eligibility determination date (excluding cash public assistance, unemployment insurance, and child support payments) which is less than the higher of: (a) the poverty threshold issued by Office of Management and Budget, or (b) 70 percent of the Department of Labor Lower Living Standard, given family size and geographic location,

[5]Descriptions of state-level rules are based on written eligibility rules and additional information obtained in a survey of several states. Specifically, we obtained complete past and present documentation for Illinois, Indiana, North Carolina, Pennsylvania, Rhode Island, and Texas, and miscellaneous information for other states.

(ii) in a family that receives cash public assistance, or

(iii) receives Food Stamps or has been determined eligible to receive Food Stamps in the 6 months preceding the eligibility determination date.[6]

A crucial feature of this eligibility definition is that both the cash public assistance and low family income criteria are based directly on *family* characteristics (versus individual characteristics), but the 1982 Act and Department of Labor rules did not define the concept of a family. JTPA was among the major *block grant* programs introduced by the Reagan administration, and determining this aspect of the eligibility rules was among the responsibilities left to the states. In Spring 1989, the Department of Labor circulated technical memoranda which *suggested* that states define a person's family as

> *all persons currently living with the person who are related by blood, marriage, or decree of the courts.*

This definition -- termed the *"extended family"* definition in this paper -- was used by most states prior to 1989, and it was adopted by virtually all states in 1989.

Prior to 1993, the major departures from this basic definition took the form of *"family of one"* provisions. With only one exception, the pre-Amendment rules for all of the states we survey include an explicit provision that allows a *non-dependent* family member to be treated as a family of one when determining low income eligibility *if* this makes the person eligible.[7] States used various methods to measure dependence, including dependency status as recorded on federal tax returns or state-determined ratios of individual income to various poverty thresholds.

---

[6]There are special Title II-A and II-C eligibility criteria for persons who are disabled, homeless, foster children, at least age 55, or enrolled in secondary school. See Appendix A of Devine and Heckman (1994a) for discussion. Below we discuss the "10%" rule that allows more general exceptions to this definition.

[7]Throughout the paper, *pre-Amendment rules* refers to rules in effect prior to implementation of the 1992 Amendments. Although the Act has been amended more than once since its passage in 1982, the 1992 Amendments changed the eligibility rules.

The 1992 JTPA Amendments further limited state discretion in determining eligibility. In particular, family is defined in the amended Act as

> *Two or more persons related by blood, marriage, or decree of a court, who are living in a single residence, and are included in one or more of the following categories: A. A husband, wife, and dependent children. B. A parent or guardian and dependent children. C. A husband and wife.*

Anyone else represents a *family of one*. This more restricted definition is termed the *"nuclear family"* definition in this paper.

These clarifications eliminated some but not all of the ambiguity in the definition of family. First, states are still free to define *dependence*. The Amendments use the term in the family definition, but provide no precise definition. In our survey of state rules, we found that most states dropped their "family of one" provisions in 1993, but adopted measures of dependence like their pre-Amendment measures.

The original Act, Amendments, and Department of Labor rules are also silent on the measurement of income and family size when there is a change in family structure during the 6 months preceding eligibility determination. In our survey of states' rules for the periods preceding and following implementation of the 1992 Amendments, we find that states use a variety of methods for dealing with changes in family size and composition. Some state rules require that 6-month family income be measured as the past incomes of members of an applicant's family at the time of eligibility determination (*current family's income*). Other states use the one-month incomes of an applicant's past families for each of the 6 months preceding the application date (*past families' income*). Some states that use *past families' income* define family size as the *maximum past family size* during the preceding 6-month period for the purpose of determining the appropriate income cutoff level. Other states use *current family size*, which may be quite different from the sizes of the past families for which income is supposedly measured. One state provides *no* guidance to local training centers on how to handle changes in family size and composition. More than one local staff person provided us with rules for family measurement that differed sharply from the written state eligibility rules. Overall, the past and present ambiguity in the definition of family might seem to give local program administrators considerable discretion in assessing eligibility.

The 1992 Amendments also broadened eligibility based on the receipt of Food Stamps. Prior to the Amendments, current receipt of Food Stamps by an individual was sufficient for JTPA eligibility in most states. At present, receipt of Food Stamps at any time during the 6 months preceding the date of eligibility determination is sufficient.

Finally, the initial Act directed states to define family income so as to be consistent with income definitions used for other need-based programs. Prior to the Amendments, there was some variation across states in the types of income counted. For example, some states excluded Social Security income when measuring 6-month income, while others included this income. The income

rules have since been tightened. The Department of Labor eligibility manual includes a list of income sources that should be counted, and Social Security is on that list.[8] Generally, state eligibility rules list (i) all sources of income that should definitely be excluded, and (ii) all sources of income that should definitely be included. The table below presents a partition of major income sources into included and excluded sources based on the current rules for the state of Pennsylvania. In practice, these lists are exhaustive.[9]

The ambiguities described above give power to state and local authorities over the interpretation of the rules provided directly by the Act. Additional discretionary power is granted to state and local administrators through the so-called "10%" rule. Up to 10 percent of Title II-A and Title II-C clients need not be economically disadvantaged if they face one or more serious "barriers to employment." The Act provides examples, such as "displaced homemakers" and persons with limited proficiency in the English language, but these "barriers" are often determined by local authorities.

The potential for state-to-state variation in the definitions of family, income, and employment barriers might suggest that a national study of JTPA eligibility is impossible. However, our examination of the data reveals that most states essentially use the same definitions for income and family. A possible source of difficulty is the margin of bureaucratic freedom provided by the 10% rule, which we cannot evaluate due to the lack of precise definitions and data limitations. However, evidence from the Job Training Quarterly Study (U.S. Department of Labor, 1993a) suggests that most admitted under the 10% rule are actually economically disadvantaged.

The rationale for the JTPA eligibility rules is not clear. Perhaps most striking is the exclusion of some income transfers from family income when measuring eligibility. In part the rules reflect the historical origins of the JTPA program. Early manpower programs instituted in the Kennedy era (MDTA) were targeted at the unemployed. Later programs (CETA) were refocused toward the poor during the War on Poverty and its aftermath. At present, the partition of income sources makes unemployment insurance recipients and welfare program participants more likely to be eligible for JTPA than individuals who face the same (or worse) labor market opportunities but choose to work at low wages. Use of the *family* as the unit of eligibility determination is also not clearly justified. It is based on an archaic notion of the family as a stable behavioral unit, despite considerable evidence on family instability, and it is an automatic source of inequity in access to JTPA if different families

---

[8]According to the final rules for implementation of the 1992 Amendments, states may exclude a maximum of 25 percent of Social Security income received by those ages 55 or more when determining their own eligibility, but not when determining the eligibility status of other family members.

[9]Other states use essentially the same partition. Note that the Pennsylvania rules do not mention Foster Care payments, GI Education benefits, Employer and Union Temporary Sickness Policy Payments, Payments from Sickness, Accident and Disability Insurance (purchased by respondent), and State Temporary Disability. In other state rules (e.g., Indiana), GI Education benefits and Foster Care payments are listed explicitly as excluded income. In our empirical analysis, we exclude income from these sources, but our decision is inconsequential. Almost no one in our sample receives income from these sources and the amounts from these sources are generally low when received.

divide family income in different ways. Given the evidence of Thomas (1992) and Lundberg *et al.* (1994) that the recipient of family earnings and income affects the pattern of expenditures on family members, so that the simple pooling model of family income of Becker (1991) is at odds with the data, linking the eligibility of a child to the circumstances of his or her family represents a potentially serious source of inequity.[10]

[10]In general, the appropriate treatment of family in government programs is a complicated issue. Kaplow (1994), for example, provides a theoretical analysis of equity aspects of family treatment for the purpose of income taxation. His tax analysis suggests that assumptions about income sharing, economies of scale, decisionmaking power, and preferences all affect the equity of policy designs.

Included Income	***Excluded Income***
Earnings from Wage-and-Salary Employment (before deductions), Self-Employment (after expenses), and Incidental or Casual Work	Unemployment Compensation Severance Pay Child Support Payments
Social Security Railroad Retirement Veteran's Compensation and Pensions Worker's Compensation Company and Union Pensions Federal, State, and Local Civil Service and Civilian Employee Pensions U.S. Military Retirement Pay National Guard or Reserve Payments Other Regular Payments for Retirement, Disability, and Survivorship	Aid to Families with Dependent Children (AFDC) General Assistance or General Relief Indian, Cuban, or Refugee Assistance Supplemental Security Income (SSI) Capital Gains Assets drawn down (such as withdrawals from a bank, the sale of property, a house, or a car)
Strike Benefits Alimony	Tax refunds Gifts Loans
Periodic receipts from Estates and Trusts Income from Paid-Up Life Insurance Interest from Certificates of Deposit or other Savings Certificates, Money Market Funds, U.S. Government Securities, and other Government and Corporate Bonds Dividends from Stocks or Mutual Fund Shares Net Income from Rental Property Interest Income from Mortgages Held Income from Royalties Interest from Regular or Passbook Savings Accounts in Bank, Savings and Loans, and Credit Unions Income from other Financial Investments	Lump-sum Inheritances One-time Insurance Payments Compensation for Injury Noncash Benefits (including non-wage employment benefits and in-kind transfers such as Food Stamps, Women, Infants, and Children Nutrition Program (WIC), School Meals, and Public Housing Vouchers and Subsidies)
Net Gambling and Lottery Winnings College or University Grants, Fellowships, and Assistantships	

Another source of arbitrariness is the definition of residence used to determine membership in a family. This is most apparent in the statutory exclusion of child support payments from JTPA-counted income. It is also apparent in the calculation of family size based on usual residence. Since persons may change family status via residence, the rules may operate to drive persons seeking JTPA training to attach themselves to low income units. For most people, the easiest way to achieve eligibility through this route is to live alone.

Below we consider the quantitative importance of various features of the eligibility rules in terms of their impact on excluding persons from the eligible population. Before doing this, however, we first use economic theory in the next section to answer the question: Can the design of JTPA eligibility rules be justified as part of a general strategy of devising optimal rules for determining participation in the program?

3. A Model of Optimal Program Provision[11]

In order to understand the economic rationale for the JTPA eligibility rules, it is helpful to step back and consider the broader question of the optimal design of program screening and targeting rules. We consider three sorts of models that are commonly used to justify government intervention in human capital markets: (A) Paternalistic models in which persons are perceived to make the wrong choices. There is no market failure in these models, but government intervention is sometimes thought to be justified. (B) Models in which agents do not have access to perfect credit markets, but governments can open such markets for them. (C) Models in which parents control investment resources of their children and make decisions that run counter to market efficiency. The final model (C) is just a version of the second (B). If children have access to capital markets and make optimal decisions, there is no scope for government intervention.

Conditioning access to a human capital investment program only on individual or family income levels is, in general, an inefficient approach to achieving policy objectives. Optimal policies are conditioned on additional characteristics of persons and families. Various bureaucratic screening rules -- like the JTPA eligibility criteria described above -- may be interpreted as devices for revealing these characteristics and, thus, as mechanisms for efficient targeting of program services. One major consequence of the design of an efficient targeting rule is that the rule may be inequitable in terms of measured income.

To simplify the analysis, we consider only simple strategies that operate on prices of goods and services. Specifically, we restrict attention to prices that are uniform across units for an individual, but may differ per unit across persons. Cash transfers are generally inefficient relative to price subsidies in achieving program objectives.

Throughout this section, we use the paradigm of parent and child, but "parent" really stands

---

[11] LeGrand (1975), Laffont (1989), and others consider optimal pricing schemes for public goods that resemble the schemes proposed in this section. Our analysis does not postulate a social welfare function, while their analysis does. Our analysis is positive and interpretive, while their analysis is normative.

for whomever controls resources in the appropriate decision unit, and "child" stands for any other agent in the decision unit whose human capital investment behavior we seek to influence. For specificity, however, we pursue the parent-child framework and present it in a two-period overlapping-generations framework.

Persons have two periods in their life: one as a child and one as a parent. We focus on the case of one-parent one-child households and assume that consumption is collective. Thus, in each period, both persons in the two-person household have the same consumption, irrespective of their status as parent or child. Earnings of the parent in period j+1, denoted e_{j+1}, is a consequence of investment in period j, x_j:

(1) $$e_{j+1} = \nu_j f(x_j),$$

where ν_j is a period j specific shock to the human capital production function f, which is assumed to be strictly concave with f(0) = 0.

Parental preferences are

(2) $$U^p(c_j, \theta e_{j+1}),$$

where c_j is period j communal consumption, e_{j+1} is the earnings of the child in the next period, and θ is a parameter indicating how strongly the parent values the future earnings potential of the child. $U^K(c_j)$ is the period j utility of the child from common consumption c_j.

The total resources available to the family in period j are e_j -- the outcome of period j-1 investment by the parent's parent. These resources can be divided between investment x_j and consumption:

$$e_j = p_x x_j + c_j,$$

where p_x is the price of investment goods. Finally, suppose that the social rate of transformation of current goods into next period goods is 1+*r*. This rate of transformation provides a benchmark against which one can measure the returns to investments actually undertaken by persons and families.

The wealth-maximizing amount of investment -- which is socially optimal from the point of view of the child with access to credit at real interest rate r -- solves

$$\underset{x_j}{Max} \ \frac{e_{j+1}}{1+r} - p_x x_j \ .$$

Using (1), we obtain the first-order condition

$$\frac{\nu_j \ f'(x_j)}{1 + r} - p_x = 0$$

which can be written as

$$f'(x_j) = \frac{p_x(1+r)}{\nu_j} \quad . \tag{3}$$

If ν_j is interpreted as a productivity parameter, then the investment level that solves (3) is optimal. Alternatively, in a *paternalistic* model, ν_j can be interpreted as a personal discount rate applied to future earnings which can take values that are deemed socially inappropriate. Evidence presented by Becker and Mulligan (1993), for example, suggests that children from poorer families discount future earnings at a higher rate than children from wealthier families. In this case, if ν_j^* is deemed the appropriate discount rate, then even in the presence of perfect capital markets, the optimal policy would a subsidize p_x conditional on ν_j. Specifically, the optimal proportional subsidy for the price of investment good, τ^1, would satisfy

$$1 - \tau^1 = \frac{\nu_j}{\nu_j^*} \ . \tag{4}$$

There might be a threshold in the use of the policy -- for $\nu_j > \nu_j^*$, it may be inappropriate to set $\tau_1 < 0$ on the grounds that excessive investment in human capital should be tolerated. To minimize the costs of providing the subsidy, financing by a lump-sum tax could be assumed.

Note that in terms of the policy objective, an alternative policy of income-conditioned cash transfers would be completely ineffective if ν_j does not depend on income. Even if ν_j depends on income, income *transfers* to alter ν_j are generally inefficient. A price subsidy is the least-cost means to achieving the policy objective, and eligibility rules for the subsidy cast in terms of the characteristics determining ν_j constitute the optimal policy.[12] Only if income is the sole determinant of ν_j would screening solely on the basis of income be an optimal policy. In general, ν_j -- and, consequently, the optimal subsidy parameter τ^1 -- will depend on income and preferences.

A second model often invoked to justify government intervention in human capital markets assumes that the parent makes human capital decisions for the child. The parent is assumed to maximize (2) subject to (1). In this case, the parent takes e_j (the endowment determined by his or her parent) as given, and controls both c_j and x_j. Substituting the budget constraint into (2) and maximizing with respect to x_j produces the first-order optimality condition:

$$f'(x_j) = \left(\frac{p_x}{\nu_j}\right)\theta\left(\frac{U_2^P}{U_1^P}\right) \quad . \tag{5}$$

Again, an optimal policy response is to subsidize investment and use a lump sum tax to finance the program. If (3) is the appropriate social optimality condition, the appropriate proportional subsidy for p_x satisfies

[12] A nonlinear pricing schedule would achieve the same objective at lower cost, but for simplicity we ignore such strategies.

$$1 - \tau^2 = (1 + r)\frac{U_1^P}{\theta U_2^P} .$$

In this model, the optimal subsidy depends on family income, family altruism preferences (θ), and all of the other ingredients that determine $U_1^P/\theta U_2^P$. Thus, the optimal eligibility rules will generally depend on factors other than income. Also, as above, overinvestment in child human capital (when $\theta U_2^P/U_1^P < 1+r$) might be treated as a beneficial distortion and not a suitable target for policy, i.e., τ_2 might be bounded below by zero.

A third model is based on the premise that the wrong preferences may control family resources. Evidence supporting this modeling approach is provided by Thomas (1992) and Lundberg *et al.* (1994). They find that transfers to fathers and transfers to mothers have different effects on the welfare of children. We capture this idea and derive an optimal policy in the following stylized model.

The preferences of children -- which have been neglected to this point -- consist of the sum of two preference functions corresponding to childhood and adult phases of their lives. Thus, for a person who is a child in generation j, with preference function U^K in childhood and preference function U^P in adulthood, we have

(6) $$U^K(c_j) + U^P(c_{j+1}, \theta e_{j+1}) \quad j = ,...,0,1,2,...,\infty.$$

If children could determine x_j, the optimality equation for investment in j would be determined by substituting the budget constraint into (6) and using (1) to solve out for e_{j+1}. Differentiating and rearranging terms, assuming that x_{j+1} is determined by the children of generation j+1, we obtain the sequence of first-order conditions

(7) $$f'(x_j) = \left(\frac{p_x}{\nu_j}\right)\left(\frac{U_1^K}{U_1^P}\right) \quad j = ...,0,1,2,....$$

which, in general, produce a different benchmark investment level than (3) and a different value of x_{j+1} than is produced from (5).

In general, parental altruism determines child investment in a different way than what emerges from (5). In a child-centered model it is now the altruism parameter of the child when he or she becomes a parent that indirectly affects the marginal rate of transformation between current and future consumption (through U_1^P). If the family -- or the child -- can lend and borrow at transformation rate $1+r$, then $U_1^K/U_1^P = 1+r$, and optimality condition (7) is the same as optimality condition (3). If, however, credit markets do not function, and policy makers take (7) as the appropriate benchmark, the optimal subsidy of p_x to the family to induce (7) is defined by

$$1 - \tau^3 = \frac{U_1^K/U_1^P}{\theta U_2^P/U_1^P} = \frac{U_1^K}{\theta U_2^P}.$$

Again, the optimal subsidy depends on many factors besides income. Again, if income or altruism

levels are sufficiently high, a person may be deemed ineligible.

JTPA versus Optimal Programs

The optimal programs implied by these models are broadly consistent with the structure of JTPA. The optimal program -- like JTPA -- is not a direct cash transfer program. Instead, the optimal program provides a *price subsidy* for the investment good. Given program goals, it is more efficient to subsidize p_x (or offer persons a price schedule that is equivalent to subsidizing p_x) than to provide cash transfers. This point is transparent in the first model. If ν_j is income invariant, no cash transfer can induce optimal behavior. In all cases, a price subsidy produces the optimal level of investment at lower cost than an income subsidy because it operates directly on relative prices. Thus, necessary tax revenues and associated costs of taxation are lower with a subsidy program.

In all three models, the optimal program is a *targeted* program, which is also the case for JTPA. Specifically, the appropriate cut-off levels for subsidies in these models are determined by preference parameters and income levels that set $\tau^q = 0$ for $q = 1,2,3$.[13] Of course, preference parameters are not directly observable in practice, so alternative means for program targeting must be developed. For example, if income sources reveal family and individual preference and productivity parameters, the threshold level of eligible income can be varied with income source. This provides one interpretation of the statutory exclusion of recent public assistance income -- but not earnings or Social Security income -- from family income when determining JTPA eligibility. The public assistance exclusion might be interpreted as a rough approximation to targeting on the basis of rates of time preference that are deemed inappropriate, since high discount rates are often perceived as a central feature of a welfare culture. (See, e.g., Banfield, 1970.) Similar reasoning can be applied to the use of welfare recipiency as a distinct and automatic eligibility criterion for JTPA. These exclusions and the exclusion of unemployment insurance benefits might also serve as devices for screening based on access to financial capital markets.

Perhaps most important, the models suggest that some combination of written eligibility rules and bureaucratic discretion represents an optimal policy. Bureaucratic discretion -- which is a key feature of the JTPA program -- enables screening on criteria relevant to the optimal subsidy that

[13]In his analysis of income redistribution programs, Akerlof (1978) demonstrates that targeted cash transfer programs have a relative advantage over general negative income tax programs. His argument is that targeted programs require less revenue and less required revenue means a reduction in deadweight losses associated with income taxation. Akerlof also notes that such costs should be considered when comparing general negative income tax programs to targeted job training programs, assuming that both programs have comparable direct impacts on the income levels of those whom the programs are intended to benefit. The models we consider are focused on increased investment in human capital as a policy objective (as opposed to income redistribution as direct objective). Nonetheless, the targeting in the optimal programs implied by our models is consistent with Akerlof's reasoning. The use of a price subsidy to increase investment (versus a cash transfer) should result in yet lower program costs. Heckman (1974) discusses how tying a child care subsidy to work effort sorts persons out by preferences for work and effectively price discriminates in an efficient way that reduces the net cost of keeping a group of persons at a constant level of utility.

might not be summarized easily in written rules.[14] The 10% rule provides local administrators with some freedom to go beyond the bounds set by the basic eligibility criteria. More generally, the non-entitlement character of JTPA allows local administrators to use discretion when selecting participants from the set of eligibles who apply. In part, this is done directly through qualifying exams administered to applicants. In part, this is done indirectly through application procedures (e.g., requiring repeated office visits and redundant paperwork), the variety of services offered by a training center (generally and to a particular applicant), and the level of the subsidy offered. Individual-specific payments for child care and commuting costs or the amount and quality of training offered to an individual can be interpreted as tailoring the effective price of investment for an individual, *i.e.*, the level of subsidy offered to an individual. Information on family consumption decisions might also be used to infer unobserved preference and human capital production parameters. Inequity -- in terms of income -- may be a consequence of optimal screening rules.

Although many features of the JTPA eligibility criteria can be justified on efficiency grounds, we do not claim that all of the rules represent optimal screening devices, given the policy objectives considered here. In particular, if a prospective participant cannot influence family decisions, efficient targeting does not appear to be achieved by linking individual eligibility to family income. It might be argued that family capital markets operate more efficiently than general capital markets, perhaps due to information and enforcement advantages. However, as our models indicate, parental preferences and parental control over investment decisions may offset the potential capital market advantage for families. To some extent, the link to family might be circumvented via bureaucratic discretion in the use of the 10% rule. Regardless, the basic link between the individual and the family in the written rules needs to be justified on grounds other than efficient screening, given the human capital investment objective for JTPA.

Adding to the puzzle about the family basis of the rules is the asymmetric treatment of child support and other inter-household transfers when determining eligibility (i.e., the exclusion of such income). Such income exclusions represent a potential source of inequity.

---

[14]Nichols and Zeckhauser (1982) examine the issue of targeting when intended beneficiaries are not easily identified due to unobservable characteristics, as in the situation considered here. They note that the use of alternative screening devices will involve losses due to impostures (i.e., moral hazard), so that the challenge of optimal policy design is to come up with screening devices that impose greater costs on impostures than intended beneficiaries -- even if the intended beneficiaries must also lose to become eligible. The use of bureaucratic discretion in JTPA might be regarded as an attempt to offset such trade-offs. Available evidence suggests that this is a challenge. For example, Parsons (1994 and papers cited therein) reports error rates of about 20 percent in both acceptance decisions and rejection decisions in the Social Security Disability Insurance program.

Of course, the eligibility rules for JTPA also reflect secondary policy objectives, i.e., objectives attached to the Act (or its predecessors) to secure passage. The most obvious example is reduction in welfare program participation. A review of the debate leading to initial passage of the Act in 1982 reveals that the program proposed by the Reagan administration restricted eligibility to welfare recipients and school dropouts. Although the broader eligibility criteria of the House and Senate bills were ultimately adopted, the initial Act stated explicitly that success of the program should be measured, in part, by reduction in welfare recipiency (Section 106) -- and the 1992 Amendments actually amended the stated purpose of JTPA to incorporate this goal directly.[15] The Act was also passed during a period of double-digit unemployment rates, and the House and Senate debates over JTPA referred to this fact repeatedly. The combination of concern about unemployment rates and the desire to eliminate automatic stipends from JTPA to avoid participation to receive stipends provides another explanation for the exclusion of unemployment insurance income when determining JTPA eligibility.

JTPA is unusual in that local administrators have discretion in admitting persons into the program and, at the same time, they are held accountable for participant performance. The original legislation requires that states evaluate local programs on the basis of trainee placement and earnings, relative to "performance standards" that are set by the state for the local program in accordance with federal guidelines. The statutory exclusion of unemployment benefits from income when determining JTPA eligibility might be interpreted as a way to improve performance on the standards. Since previous employment and current job search may reveal applicants who are more likely to complete training and secure employment, the exclusion of unemployment insurance might serve to screen more motivated persons into the pool of eligibles.

Giving discretion to local bureaucrats enables them to screen out participants who might be unsuitable investments. It also allows them to use private information about parental and personal characteristics to devise optimal subsidy schemes for prospective trainees. At the same time, discretion creates the opportunity for bureaucrats to indulge their personal preferences in ways that might not be compatible with program goals. The eligibility criteria bound the discretionary powers of local bureaucrats by screening out certain persons. Performance standards further bound their discretionary powers by providing incentives to screen in certain types of persons.[16]

Our theoretical framework clarifies the concept of "local justice" described by Elster (1992).

---

[15]The "Statement of Purpose" of the Act initially read: "It is the purpose of this Act to establish programs to prepare youth and unskilled adults for entry into the labor force and to afford training to those economically disadvantaged individuals and other individuals facing serious barriers to employment, who are in special need of such training to obtain productive employment." (Section 2, Public Law 97-300, 1982)

The 1992 Amendments modified this statement, so that it now reads: "It is the purpose of this Act to establish programs to prepare youth and adults facing serious barriers to employment for participation in the labor force by providing job training and other services that will result in increased employment and earnings, increased educational and occupations skills, and decreased welfare dependency, thereby improving the quality of the workforce and enhancing the productivity and competitiveness of the Nation." (Section 2, Public Law 102-367, 1982)

[16]Performance standards are based on earnings and employment outcomes, as well as demographic criteria such as the educational attainment or ages of participants.

We distinguish between particular policy objectives -- which we take as external to the analysis -- from efficient ways of achieving those objectives. By combining both the choice of an objective and the mechanism by which it is achieved, Elster combines and confuses equity and efficiency issues in his analysis. Many of the allocation systems considered in his analysis under the rubric of "justice" might be better thought of as efficient mechanisms for achieving a clearly formulated social policy.

4. Data

Our empirical analysis uses data from the Survey of Income and Program Participation (SIPP), a continuing multi-panel household survey of the non-institutional population of the United States that has been conducted by the Census Bureau since 1984. For three reasons, these data are useful for studying eligibility for JTPA. First, SIPP interviews are conducted on a rotation group basis at four-month intervals, so levels of recall error can be expected to be lower than those found in annual surveys. Second, the designated SIPP sample is large and representative of all U.S. households, and interviews are conducted for all household members aged 15 years or more. This allows us to study eligibility for all demographic groups. Third, and most important for our purposes, SIPP collects detailed data on monthly earnings and income by source, social welfare program participation, and family composition for each individual sample member. Eligibility can be measured more accurately with data from SIPP than with data from any other survey for the U.S.

We analyze data for the 1986 Panel of SIPP. For this Panel, three rotation groups were interviewed seven times and one rotation group was interviewed six times between February 1986 and April 1988. Thus, data for at least one rotation group are available for all months between October 1985 and March 1988, and data for the full Panel cover the 1986 and 1987 calendar years. We use the available monthly data to determine eligibility in each of the seventh through twenty-eighth survey months for all persons in the initial Panel who are between ages 16 to 54 in the eligibility determination month and in-sample and interviewed for the preceding 6 months. (Recall that 6 months of earnings and Food Stamps receipt data are required to establish eligibility.) We then use either a pooled sample of all person-months, which amounts to 290,890 person-months for 16,309 individuals, or subsamples of person-months for initial Panel members who are in the sample in specific calendar months or longer intervals.[17]

5. JTPA Eligibility Rules: The Empirical Importance of Variation Across Time and Space

---

[17]The SIPP public use files have incomplete geographic identification data. First, aggregated states of residence are reported for 4.4 percent of our sample that lives in sparsely-populated states. Second, some metro residents are labeled non-metro residents in less densely populated states. Since it impossible to assign the precise Lower Living Standard Index for these people, we use a regional value instead. Fortunately, our evidence on the importance of geographic variation for eligibility status indicates that the effect of these geographic data constraints should be minor.

Overall, our findings are insensitive to standard sources of concern about longitudinal data. For checks on seam effects, see Appendix B in Devine and Heckman, 1994a; for additional results, see Devine and Heckman, 1994b. For checks on attrition effects and weighting, see Appendix C in Devine and Heckman, 1994a. For checks on imputation effects, see Appendix D in Devine and Heckman, 1994a.

The variation across time and space in eligibility rules described in Section 2 does not necessarily translate into substantial differences in the size and characteristics of the population eligible for JTPA. This is the important issue. To investigate this question, we use the alternative definitions of family, methods for measuring family income and family size, and different Food Stamps rules that appear in state-level rules to construct the set of nine basic JTPA eligibility definitions shown in Table 1.[18] Definitions E, F, and I, which use the *nuclear* family definition and the 6-month Food Stamp rule, are representative of the eligibility rules now in place. Between 1989 and the Amendments of 1992, the definitions in use were A, B, and G, which all use the *extended* family definition. Prior to 1989, when states were allowed greater discretion, definitions comparable to A through D, G, and H may have been in use.

The last column of Table 1 presents eligibility rates estimated for the full sample of person-months under the alternative definitions. Overall, these numbers suggest that some aspects of the eligibility rules are more important than others, but the estimates under any rule hover around 15 percent. Comparing the eligibility rates for definitions A versus B, C versus D, and E versus F, we see that the use of *maximum past family size during the previous 6 months*, instead of *current family size*, increases the number of eligibles because it tends to increase income thresholds. Similarly, the shift to the more generous 6-month Food Stamp rule following the 1992 Amendments increases the number of eligible persons. This is evident in the differences between the eligibility rates for definitions C versus E, D versus F, and H versus I. The same holds for the choice of *current family income* over *past family income*, as seen in the higher eligibility rates for definitions G versus A, H versus C, and I versus E. None of these differences in eligibility rates is very large. Note the very limited effect of the legislated shift from the *extended* family definition to the *nuclear* family definition. Overall, the estimated eligibility rates vary from a low of 14.63 to a high of 15.52 -- a range of less than 1 percentage point.

Table 2 presents a summary of eligibility rates by major demographic characteristics. Here we observe some sharp differences between demographic groups under each definition. The eligibility rate for females is about 50 percent higher than the eligibility rate for males. Non-Hispanic whites appear the least likely among race and ethnic groups to be eligible, while non-Hispanic blacks appear most likely. Not surprising, eligibility rates decrease with age, at least through age 35, and with successive levels of educational attainment. Currently married workers appear least likely to be eligible, while those who have been married previously (i.e., the widowed, divorced, or separated) appear most likely. We also observe differences across groups in terms of their sensitivity to specific aspects of the rules, but the basic pattern of demographic variation is essentially the same across all definitions.

Table 3 presents logit results for eligibility status under definitions A, B, F, and G for the

[18]Given limited variation in states' treatment of Social Security income prior to the Amendments, we treat the inclusion of this income as a stable feature of the eligibility rules. We consider the importance of this treatment below in Section 6.

sample of person-months for July 1986.[19] Focusing on the derivative of the probability of eligibility averaged over persons, we see patterns of demographic variation and limited sensitivity to changes in the rules that are similar to those that appear in Table 2.

Of particular interest are changes in eligibility resulting from the 1992 Amendments. As shown in Table 4, a comparison of eligibility status under rules for the periods before and after the 1992 Amendments (definitions B and F) indicates that 5.83 percent of those who were eligible in the pre-Amendment regime (B) would not be eligible in the post-Amendment regime (F). This is due to the switch from the *extended* to *nuclear* definition of the family. On the other hand, 8.35 percent of those who are eligible under definition F would not have been eligible under definition B. This is due in part to the more generous Food Stamps rule and in part to the change in family definitions. Comparisons of alternative pairs of definitions produce similarly small numbers.

In Tables 1 to 4, *dependency* status is ignored. As discussed in Section 2, pre-Amendment rules had provisions for *non-dependent* family members and the currently-used nuclear family definition uses the term *dependent* explicitly. As a check on the importance of dependence, we explored the sensitivity of the estimated eligibility rates to the 50-percent poverty threshold measure used by Pennsylvania and other states. Under this definition, a person is non-dependent if his or her cash 6-month income from *all* sources exceeds 50 percent of the official poverty line for 6 months. Although this measure probably makes more people non-dependent than alternative dependence measures, its application has negligible effects. Under pre-Amendment rules, less than 2 percent of our sample becomes non-dependent, and almost none of these persons have individual incomes low enough to be eligible for JTPA. Even fewer persons become non-dependent when the nuclear family definition is used, and just a small number of these persons have a change in eligibility status. Not surprising, almost no one has a change in eligibility status when these non-dependents are excluded from their families.

Finally, only three percent of JTPA eligibles participate in the program at any time (U.S. Department of Labor, 1993a). Thus, although small numbers of persons appear to be affected by the changes in rules examined above, an important question about the alternative rules is whether changes in them affect persons who are most likely to participate. To examine this question, we calculate participation probabilities for our SIPP sample of definition B eligibles using parameter estimates from participation logits fit by Heckman and Smith (1994a) to data from the National JTPA Study.[20]

---

[19]As a check on the effects of attrition on our findings, we estimated the same model using separate samples of person-months for November 1986, March 1987, and July 1987. The results, presented in Appendix C of Devine and Heckman (1994a) show some evidence of variation across months -- in part due to seasonality and in part due to attrition. The magnitude of differences is generally negligible, however, and the same holds when weights are used and when we incorporate attrition directly into the likelihood function.

[20]The National JTPA Study was a large-scale social experiment funded by the Department of Labor. The study excluded youth enrolled in elementary and secondary school, so we also exclude them from our sample in this simulation. The participation logits were fit to data for male youth, male adults, female youth, and female adults in the National JTPA Study sample, and the explanatory variables were age, race and hispanic origin, education, marital status, current and recent post-secondary school enrollment, and current and recent labor force status. In these logits, it is assumed that definition B was

Overall, these estimates indicate that those who become ineligible tend to be those persons with low participation probabilities.

Although recent changes in eligibility rules have generated considerable discussion, our evidence indicates that they have not changed eligibility rates very much. Similarly, although the decentralized administration of JTPA has resulted in some variation in rules across states, we find that the variation across states allowed by past and present federal rules is of little consequence. We now consider the impact of eligibility rules that have been uniform over time and across states.

6. The Relative Importance of Stable Eligibility Criteria

This section considers the importance of the stable aspects of the eligibility rules--that is, criteria that are unambiguous, that have not been subject to change over time, and that do not exhibit major variation across states. These rules are very important in determining who is eligible for JTPA.

Welfare Program Participation

A central feature of the JTPA eligibility rules is their reliance on two major avenues to eligibility: (i) low 6-month family income, or (ii) participation in a welfare program (either cash public assistance or Food Stamps). Although the second of these criteria is redundant for the majority of persons eligible for JTPA, it still contributes to eligibility in an important way. As shown in Table 5, about one-eighth of all eligible persons do not satisfy the low-income criterion, but do satisfy the welfare receipt criterion.[21] As important is the number in the column labeled *Only* under the *Low Family Income* heading. About two-fifths of all eligible persons are eligible *only* under the low family income criterion. This evidence suggests that about three-fifths of the eligible population would not be affected by changes in either the JTPA income cutoff levels or income exclusions alone, given no change in the eligibility criteria for Food Stamps or cash public assistance programs. However, the evidence also suggests that a reduction in the JTPA income cutoff or changes in the JTPA income exclusions would exclude at least some members of the large segment of the JTPA-eligible population who either fail to qualify or choose not to participate in Food Stamp or cash public assistance programs.

Looking across demographic groups, we observe substantial variation in satisfaction of the welfare criterion for eligibility. One factor that contributes to this variation is targeting of public assistance programs. However, this cannot explain all of the demographic variation that appears in Table 5. One possible explanation for this variation is differences in the low end of the income distribution. Non-Hispanic black eligibles and Asian/other non-white eligibles have substantially lower JTPA-counted incomes than either Hispanics or non-Hispanic white eligibles. The same is true for females compared to males (particularly among adults), eligibles with less versus more education,

---

the eligibility definition in use in 1987-88, the time of the experiment, at the experimental sites. For a complete description of the National JTPA Study and the logit estimates used here, see Heckman and Smith (1994a).

[21]The results under other definitions vary between approximately one-sixth and one-eighth under alternative eligibility definitions. See Devine and Heckman (1994a) for complete detail.

and unmarried eligibles relative to the married. Of course, JTPA-counted income levels reflect labor market activity, since earnings are included. However, JTPA-counted income also reflects program participation, since public assistance and unemployment insurance income is excluded. This program participation appears to be quite important in determining the variation with race and ethnicity. Table 6 presents a summary of welfare participation rates for the full sample by race and ethnicity and JTPA-counted income level. Specifically, cash income -- excluding unemployment benefits, child support, cash public assistance, and other income excluded during JTPA eligibility determination -- is measured relative to the appropriate income cutoff under definition F, given family size and geographic location. These data indicate that participation in welfare programs varies significantly across race and ethnic groups at all family income levels. Blacks generally have the highest welfare program participation rates, and Asians and other non-Hispanic non-whites follow close behind. Hispanics have relatively low participation rates at all positive income levels, and whites generally fall between groups of Asians and other non-whites and Hispanics. Disaggregating by age, the pattern observed in the aggregate holds for all groups, but it is especially strong for adults.

Table 7 presents coefficient estimates of logit probabilities of eligibility under the low family income criterion, eligibility under the welfare program participation criterion, and eligibility under either of the two.[22] Focusing on the derivatives, we observe similar estimates for gender, age, and educational attainment across criteria. However, the magnitude of differences with marital status is much greater in the case of income eligibility, and the difference in results for race and ethnicity are even more striking. In the results for eligibility due to low income, we observe very similar estimates for all minorities, relative to non-Hispanic whites. In the results for eligibility due to welfare program participation, however, we observe a relatively small effect for Hispanic status.

As a consequence of ties between program participation and program eligibility rules across social programs, groups that have relatively high propensities to participate in welfare programs have greater access to additional social programs than groups with low propensities to participate in welfare programs.[23]

Exclusion versus Inclusion of Income from Selected Income Transfer Programs

A second important aspect of the JTPA eligibility rules is their exclusion of unemployment benefits and cash public assistance payments and their inclusion of Social Security benefits when

---

[22]The results presented here use only definition F, but results using other definitions are essentially the same.

[23]At present, JTPA administrators may also select cash welfare recipients over other applicants due to a 1992 Amendment which requires that 65 percent of all JTPA participants be "hard-to-serve." This group includes: cash welfare recipients, persons with deficient basic skills (below 8th grade level, based on test scores or comparable criteria), youth who are one or more grades behind in school, homeless persons, run-away youth, pregnant or parenting youth, school dropouts, disabled persons, and members of a locally-designated/state-approved category (which cannot simply be the unemployed). Prior to the 1992 Amendments, a similar rule required that Title II-A spending on youth reflect the youth proportion of the local eligible population (so that, for the U.S. as a whole, 40 percent would be spent on eligible youth), and that AFDC and dropouts also be served on an "equitable basis." In future research, we will examine the effects of these additional requirements.

determining eligibility under the low family income criterion. Relative to the overall population, the numbers of recipients of unemployment benefits, cash public assistance, and Social Security payments are relatively small, so we would not expect to see large effects at the aggregate level for either the full sample or the demographic sub-samples. In turn, we consider eligibility rates for recipients of these transfers and their family members with and without transfer income counted.[24]

Table 8.A presents a summary of the effects of including unemployment insurance benefits in family income when determining the eligibility status of recipients and members of their families. Overall, including unemployment benefit income changes the eligibility status of about one-fourth of recipients and family members. As expected, given greater male participation in the unemployment insurance program, the effect on male eligibility is considerably larger than the effect on female eligibility. The effect on female youth eligibility rates is very small.

Table 8.B presents the same type of empirical analysis for cash public assistance (AFDC, SSI, and General Assistance) for members of families with such income. The effects of including versus excluding cash public assistance are less dramatic than the effects of including versus excluding unemployment insurance, but they are still sizeable. Overall, about 10 percent of those satisfying the low income eligibility criterion would not be income eligible if cash public assistance was counted. In proportionate terms, the effects are greater for adult males, but this reflects the relatively small number of adult males in families receiving cash public assistance. In absolute terms, adult females would experience the greatest change in income eligibility. The results for eligibility by any criterion after counting public assistance are also of interest. In the first columns of Table 8.B, the cash public assistance income that we count is received during the 6 months *preceding* eligibility determination. In contrast, the cash public assistance receipt criterion is based on *receipt at the time of eligibility determination*. In addition, receipt of Food Stamps -- either in the past 6 months or at the time of eligibility determination -- is sufficient. The consequences of this difference in measurement are striking. For the full sample and for each demographic group, almost none (less than 1 percent) of the eligibles would be ineligible if cash public assistance income were counted, but the current public assistance and Food Stamp receipt criteria were kept in place.

In contrast to cash public assistance payments and unemployment insurance benefits, Social Security payments are included when family income is calculated for JTPA.[25] The effects of this feature of the eligibility rules appear in Table 8.C. Given our focus on the eligibility of persons ages 16 to 54, the results are striking. Income eligibility rates nearly double for adults and increase by more than 50 percent for youth if Social Security benefits are *excluded* from income when determining eligibility for recipients and family members. Moreover, relatively few of those who would become eligible after exclusion of Social Security satisfy either the cash public assistance or Food Stamp receipt criteria. As shown in the righthand columns of Table 8.C, the net effect of

[24]Results for other eligibility definitions are essentially the same as those presented here. See Devine and Heckman (1994a).

[25]The Social Security income considered here includes old age, survivor, and disability income received by sample members and their families. Note that our sample is not affected by the optional 25 percent Social Security exclusion now available for those at least age 55.

excluding Social Security income would be dramatic for families with this income.

Family versus Individual Characteristics

A third key aspect of JTPA eligibility rules is the use of the *family*, as opposed to the *individual*, as the unit for which income and cash public assistance program participation is measured. Table 9 presents a comparison of eligibility rates using rules based on *nuclear family* characteristics (as above) and *individual* characteristics (i.e., individual income measured against the cutoff for a family of one and individual receipt of cash public assistance). The contrast is striking. On the one hand, 11.3 percent of those persons eligible using a family-based definition would not be eligible under the individual-based definition. On the other hand, the overall eligibility rate would more than double with a shift to an individual-based definition, and over 62 percent of those eligible under the individual-based definition would not be eligible under the family-based definition.[26] Tables 9.B and 9.C suggest that the overall eligibility numbers in Table 9.A primarily reflect changes in eligibility due to low income.

Turning to Table 10.A, which presents low income eligibility rates by major demographic characteristics, a shift to an individual-based definition would affect all demographic groups. However, it would have particularly strong effects for females relative to males, youth relative to adults, white and Asian/Other non-Hispanic nonwhites relative to non-Hispanic blacks and Hispanics, those with 8 to 15 years of education relative those with more or less education, and those who are either married or have never been married relative to the previously married. The numbers for the age and gender partition are most startling. A shift to individual-based rules would increase the eligibility rate for adult males by about 20 percent. It would increase the eligibility rate for adult females by more than 150 percent. It would increase the eligibility rates for male and female youth by more than 250 percent. Many youth have no income of their own.

[26]The comparable numbers are 16 percent and 65 percent when the extended family definition B is used as the base case.

About one out of four persons eligible under the family-based welfare receipt criterion would not be eligible if receipt by other family members is ignored. As shown in Table 10.B, this shift would have greater effects on blacks and Hispanics relative to whites and Asian/other nonwhites, youth relative to adults, those with less than 12 years of education relative to those with more, and the currently unmarried relative to the currently married.

The *individual* definition used in Tables 9 and 10 represents an extreme contrast to the family-based definitions. Intermediate definitions based on alternative assumptions about income sharing rules within families are also instructive. One obvious alternative is a *per capita* income approach, i.e., where equal shares of family income are assumed to be available to all family members. Eligibility by the low income criterion based on this *per capita* income rule are shown in the third column of Table 10.A, again using the family of one income threshold. This change also produces an increase in the size of the eligible population eligible on the basis of individual income, relative to eligibility based on family income. Note, however, that a shift to a *per capita* income measure produces a very different set of increases in group-level eligibility rates than the shift to the *individual* definition. Not surprising, given standard patterns of income receipt within families (earnings receipt, in particular), changes are smaller for all age-gender groups except adult males. The *per capita* income measure also produces relatively high income eligibility rates for those with relatively low educational attainment and the previously married relative to the never married and the currently married. Most striking are the results for race and ethnicity. For whites and Asian/other nonwhites, the changes in income eligibility with a shift to the *per capita* measure are less than half the increases observed for the shift to the *individual* measure. For blacks and Hispanics, the changes in income eligibility are actually slightly greater. Thus, the *per capita* rule yields the largest differentials in income eligibility between blacks and Hispanics, on the one hand, and whites and Asian/other non-whites on the other.

Table 11 presents logit results for the July 1986 sample of person-months for eligibility based on family, individual, and per capita eligibility rules. Overall, the pattern of variation in the derivatives of the probability of eligibility is the same as the pattern in the means.

A third alternative to the basic family definition is a *weighted per capita* definition. The last column of Table 10.A presents income eligibility rates based on equivalent income scales of 0.8 for children under 18 and 1 for adults and the threshold for a family of one. Generally, the results are quite similar to the *per capita* eligibility rates. As expected, the *weighted per capita* eligibility rates are slightly higher for youth and slightly lower for adults than the *per capita* eligibility rates.

These alternative individual-based eligibility estimates are informative. In all three cases, members of all major demographic groups are more likely to be eligible than they are under the currently-used nuclear family definition.[27] The differences between the family-based and the alternative eligibility rates arise from two sources. First, the income thresholds used to determine family-based eligibility are based on assumptions about economies of scale for families of two or

[27]Similar results are obtained when the extended family definition B is used as a base.

more. In metro areas in the Northeast in 1986, for example, the marginal increments in income thresholds were $2680 for a first person, $1140 for a second, $1425 for a third, $1230 for a fourth, $1125 for a fifth, and then a constant $1335 for additional persons. Thus, the threshold for a family of one was greater than the marginal increments allowed for an additional family member starting at any family size.[28] Second, the differences reflect variation in individual contributions to family income. Implicit in the family-based definition is an assumption of complete sharing of income among family members, regardless of income sources. Implicit in our individual-based definition is an assumption of no income sharing within families. The per capita and weighted per capita estimates illustrate how less extreme assumptions would operate.

In the previous section, we examine geographic and temporal variation in the JTPA definition of family. One aspect of this definition that has remained stable is its *"usual residence"* basis. A child who is temporarily away from home while attending school is supposed to be counted as a member of his or her parents' family. The same holds for others who are away from home temporarily for work or other reasons. If family members live apart *permanently*, however, they are treated as members of separate family units when eligibility is determined.

Table 12 presents a comparison of eligibility rates based on income for persons living *with* versus *apart from parents* during the 6-month period used for eligibility determination. The numbers for those between the ages of 19 and 27 (when large fractions live in each of the two arrangements) highlight the importance of the *residence* aspect of the JTPA family definition. Of course, the pattern in Tables 12 reflects joint decisions about work and living arrangements, given opportunities faced. In part, the relatively low individual incomes (and, consequently, high individual eligibility rates) of those who live with their parents reflect labor supply decisions, given resources available when living with parents versus elsewhere. In part, the discrepancies between those living with versus apart from parents reflect differences in labor market opportunities. Following the JTPA rules, we treat these decisions as exogenous.

Adding to the potential importance of the residence basis of the family definition is the treatment of inter-household transfers between family members. The Act states explicitly that *child support* should be *excluded* when measuring income to determine eligibility, and state-level rules generally treat other cash transfers between family members as gifts that should also be excluded. Regularity of receipt does not matter. Dependents living outside a person's household are also ignored when measuring family size to determine the low income threshold for eligibility. When we examine the treatment of transfers with our data, we find that relatively few persons report receipt of financial transfers. However, such transfers are very important for recipients. Including money transfers from friends and relatives would make nearly one-third of the low-income eligibles in families with this transfer income ineligible by the low-income criterion. For child support, the proportion is one-fifth. Effects on overall eligibility are smaller, which suggests that this transfer

[28]Table 30 below provides additional detail on income thresholds.

income may be excluded when determining eligibility for other public assistance programs.[29]

In sum, the evidence presented here indicates the importance of the family basis of the JTPA eligibility rules. Implicit in the rules -- in the use of family income, the structure of the income thresholds, and the exclusion of inter-household transfers -- are assumptions about income sharing within families that may not hold for all families. Our estimates suggest that deviations from these assumptions have potentially important implications for equity in the provision of government services.[30] The data clarify how the rules used for division of income within families represent a crucial determinant of the equity of the program eligibility rules.

The 6-Month Window for Income Measurement

When determining eligibility by the low family income criterion, JTPA uses income received from selected sources during the *6 months* preceding eligibility determination. Table 13 presents evidence on the importance of this choice.

Most eligible persons are eligible under all window definitions, and most who are eligible under just one window are eligible under the 3-month definition. Overall, the data suggest that the use of a 6-month window serves primarily as a means for excluding persons with declines in incomes that are very sharp and very short in duration (particularly among adult males).

7. JTPA Eligibility versus Poverty Status

Table 14 presents a comparison between poverty status based on the official Census definition of poverty and JTPA eligibility under definition F.[31] As above, the sample is restricted to person-months for those ages 16 to 54. In addition, since poverty measurement under the official Census definition requires a 12-month income observation, we require that a person be in-sample and have interviews conducted for all 12 months preceding the month of eligibility and poverty status determination. We restrict the sample to SIPP reference months 13 and following.

Focusing first on the last column, we see that about 90 percent of *the poor* are eligible for JTPA. Also, although poor females are slightly more likely to be eligible than poor males, the

---

[29]Jencks and Edin (1990) present evidence that suggests that adult female welfare recipients generally cover expenditures using a variety of sources other than formal labor market earnings and cash and in-kind transfers. They report that *casual* child support (i.e., not court-ordered) is not uncommon, and it is quite possible that this income is reported in SIPP as child support or cash from friends and relatives, but not reported to AFDC and other program administrators.

[30]Rosenzweig and Wolpin (1993, forthcoming a and b) use data for young adults from the National Longitudinal Surveys to examine relationships between government income transfers and intra-family transfers (in the form of inter-household financial transfers and co-residence), and they find evidence of some substitution between transfer sources.

[31]Findings for other JTPA eligibility definitions are essentially the same as those presented in Table 14. See Appendix G of Devine and Heckman (1994a).

difference is small. The same holds for different marital status groups. On the other hand, there is a substantial difference between non-hispanic whites and other race and ethnicity groups. Much larger fractions of the poor in the non-white groups are eligible for JTPA. There is also variation with age (a decline followed by a rise) and educational attainment (a decrease through the sharp drop at 16 years and then a sharp increase at 17 or more years).

More striking is the evidence on the reverse comparison shown in the second column. Just 61 percent of all eligible persons would be classified as poor under the standard federal poverty definition. Looking across demographic groups, we find little variation with age, but there is substantial variation along all other characteristics. Eligible non-hispanic whites appear much less likely to be poor than eligible members of the other race and ethnic groups -- particularly non-hispanic blacks. There is also a steep decline in the likelihood of being poor with educational attainment, and a sharp difference between eligibles who have been married previously and eligibles who are either currently married or never been married. An important difference also appears between males and females, with eligible females more likely to be poor than their male counterparts.

What are the sources of these differences between eligibility and poverty status? Poverty status is based on quite different criteria than the criteria that determine JTPA eligibility under past and present rules. First, the definition of *family* used for the measurement of poverty is the *extended* family definition, which is the definition that was used for JTPA eligibility before 1993 but differs from the *nuclear* family definition now in effect. Second, poverty thresholds are based on family size at the time of the March CPS, which serves as the primary source of data for the official poverty statistics, while JTPA uses either family size at the time of application or the maximum family size in the 6 months preceding eligibility determination. As shown in Section 5, neither of these aspects of the eligibility rules has a large effect on estimates of the size and characteristics of the JTPA-eligible population. As shown in Table 15, findings for eligibility under definition G -- based on the income of current extended family members and current family size -- are very similar.

A third difference in measurement methods is that poverty status is based on cash income from *all* sources, while unemployment benefits, child support payments, and cash public assistance are all excluded from income when determining JTPA eligibility by the low family income criterion. Counting income only for the sources counted by JTPA, about one-fourth of the eligibles who are not poor under the standard poverty definition would be poor under the revised definition (9.31 of the 38.83 percent of the nonpoor eligible population under definition F). The overall population receives less than 10 percent of its family income from the sources excluded by JTPA, while the eligible population receives over 35 percent of its income from these sources, and the percentage is considerably higher for many demographic groups. For eligible non-Hispanic blacks, in particular, it is close to 50 percent.

A fourth difference is that poverty status is based on 12-month income, versus the 6-month JTPA measure. Results for poverty measurement based on a 6-month window appear in Table 15

and they are somewhat surprising. About one-sixth of the non-poor eligibles (7.03 of 38.83 percent under definition F) are poor using the 6-month window.

A fifth difference is income threshold levels. JTPA eligibility is based on the maximum of two thresholds, given family size: the Office of Management and Budget poverty guidelines (OMB) and 70 percent of the Lower Living Standard (LLS). The OMB poverty guidelines are derived from the Census poverty thresholds, but the OMB guidelines do not depend on family age composition, they increase with family size for all sizes, and they increase by a constant amount (versus the puzzling nonlinear change in the Census thresholds). We checked the importance of these factors by calculating poverty status using the OMB thresholds and found them to be inconsequential. The LLS thresholds also vary geographically and typically exceed the OMB thresholds for families of two or more, so the LLS thresholds are actually used to determine the income eligibility of most persons. However, this difference also has little effect.

In addition to these differences in the direct measurement of family income and family income cutoffs, another factor that might cause a difference between poverty and eligibility status is the use of welfare program participation as an automatic eligibility criterion for JTPA. About one-eighth of the eligible population is eligible on the basis of participation in welfare but not on the basis of family income.[32] This second avenue to JTPA eligibility is potentially important for two reasons. On the one hand, eligibility for both cash public assistance and Food Stamps depends, in part, on the value of assets. Thus, longer-term income profiles can have an indirect effect on eligibility for these public assistance programs. On the other hand, eligibility for public assistance is based on income only in the month of application. As shown in Table 15, this is not very important. About one-seventh of those who are not poor by either the 6-month or 12-month measures would be categorized as poor on the basis of their one-month family incomes from sources counted by JTPA (3.20 of 22.49 percent under definition F). This fraction would be lower yet using total income.

The eligibles who are not poor under any of the poverty definitions considered here can be attributed to a combination of higher Lower Living Standard thresholds, higher income eligibility thresholds used for some welfare programs, and different definitions of family and household units across government programs, relative to our poverty measures. Proper measurement of poverty remains an unsettled issue, as indicated by the recent large-scale study by the National Research Council (Citro and Michael, 1995). Nevertheless, the wedge between the JTPA definition of economically disadvantaged and the alternative poverty measures has serious implications. To the extent that non-poor eligibles are more promising applicants for JTPA administrators who are resource-constrained and performance-rated, the broader scope of the eligibility rules may serve to limit access to JTPA services for poor persons.

8. Is "Ashenfelter's Dip" Solely a Consequence of the Eligibility Rules?

[32]This estimate of one-eighth corresponds to definition F, but estimates under other definitions are similar. See Devine and Heckman (1994a).

Orley Ashenfelter (1978) first noted that participants in a government training program experience a decline in their earnings just prior to entry into the program. Subsequent research (Ashenfelter and Card, 1985, and studies cited by them) has documented this "dip" for several other government training programs. Ashenfelter's observation has important practical consequences. If the decline in participant earnings is a transient phenomenon, i.e., truly a "dip," then widely-used before-after comparisons of earnings *overstate* the earnings impact of program participation. If the decline in earnings persists in the post-enrollment period, then the before-after comparisons *understate* the earnings impact of the program. Here we consider whether the pre-program decline in earnings is a consequence of the program eligibility rules. Is a dip observed primarily because the eligibility rules disproportionately select persons who experience temporary income losses? It may be that those with temporary income losses apply to JTPA in greater numbers -- in response to the reduced opportunity cost of training. Acceptance of unemployed persons may also be more likely. Administrators may expect program completion and job placement to be more likely for the recently employed. (Heckman and Smith, 1994, discuss these issues in greater detail).

Figure 1 presents the own labor market earnings of *eligibles* prior to and following the month of eligibility determination (denoted month "t" on the graph). For adults, a clear dip in earnings prior to the month of measured eligibility is evident. The pattern is especially strong for adult males, while a dampened form of the dip appears for adult females.

In the samples used to estimate the earnings profiles shown in Figure 1, virtually no one participates in the JTPA program.[33] However, adult earnings recover because the rules for eligibility operate to include persons who suffer adverse economic circumstances temporarily during the period used for income measurement. Thus, given the 6-month window used for eligibility determination, using earnings levels three or four months prior to eligibility determination as a no treatment benchmark level will lead to a large estimated program effect if a before-after estimator is used and eligibility rules drive program participation.

The following theorem is instructive for determining how eligibility rules sample the eligible population:

> *Theorem 1: If earnings are covariance stationary and positively correlated and the conditional expectation of earnings is linear in cumulative earnings used to determine eligibility, then the trough in mean pre-program earnings among eligibles, if it exists, comes in the middle of the interval used to determine eligibility.* ■
> *Proof: See Appendix E of Devine and Heckman (1994a).*

The mean earnings pattern for eligible adult males fits the prediction of this theorem. For adult females, the dip does not occur precisely in the center of the 6-month period used for eligibility determination, but it comes close. This shifting of the trough suggests that other criteria besides

[33]About 3 percent of all eligibles participate in any program year (U.S. Department of Labor, 1993a).

income eligibility determine program eligibility--a point documented above.[34]

For youth, there is little evidence of a dip in own earnings in the period preceding eligibility determination. This would be expected, given the Theorem, because earnings processes of youth are not stationary and their eligibility is determined by criteria other than earnings histories (especially for youth living with relatives). Family earnings and not own earnings are most relevant for this group.

Figure 2 presents mean *family income* from sources counted by JTPA in the months preceding and following the month of JTPA eligibility determination. Although the dip in family income is most pronounced for adult males, a large dip in family income appears for adult females, and the dips in family income for male and female youth are even larger than the dip in family income for adult females. Indeed the patterns for youth are almost identical to the pattern for adult males. Figure 3 presents family labor market earnings *net of own labor market earnings*. This is the most informative about the relative importance of own earnings in the determination of eligibility status for different demographic groups. For adult males, there is almost no dip in the earnings of other family members, while the dips that appear for adult females and particularly male and female youth are dramatic. Moreover, the dips for youth tend to be centered in the middle of the 6-month period used for eligibility determination.

Table 16 presents evidence on the relationship between eligibility status and own labor market activity.[35] For all four demographic groups, eligibility rates are lowest for those who are employed in regular jobs and work the entire 6 months preceding eligibility determination. For all four demographic groups, eligibility rates are also highest for those who do not work at all but spend at least part of the 6 months on layoff or looking for work. Not surprising, these contrasts are sharpest for adults -- particularly adult males. Most striking in Table 16, however, is the evidence presented in the middle column. For the full sample, we see that more than half of all eligibles work all or part of the 6 months preceding eligibility determination. Turning attention to the grouped data, we see that almost two-thirds of adult male eligibles work at least part of the 6 months preceding determination of eligibility, and over one-fourth work the entire 6 months. Since a dip in own earnings requires earnings, this relatively large representation of the employed among adult male eligibles helps explain the relative depth of their earnings dip.

9. Participation Effects on Eligibility Status

JTPA eligibility rules are supposed to identify the "economically disadvantaged." Thus, one obvious measure of program success for JTPA would be movement of participants out of eligibility.

---

[34]Heckman and Smith (1994a) find that adults who experience declines in their earnings are more likely to participate in JTPA than those with long term low earnings, and this exacerbates the dip observed here for eligible adults.

[35]A person is categorized as working the entire 6 months if he or she held a regular job for the entire 6 months and reported no absence without pay.

In this section, we present evidence on this measure of success.

We first ask the question: What percentage of persons eligible due to low family income would no longer satisfy the low family income criterion if *all* eligible persons participated in JTPA (i.e., all members of every eligible person's family) and received the JTPA earnings gains that were received by participants in the National JTPA Study? We ignore any general equilibrium effects arising from changes in the level of participation in the program, but our results can be viewed as suggestive. Assuming *universal participation* clearly overstates the effect of JTPA. Our second question is more conservative. We ask: What percentage of persons eligible due to low family income would no longer satisfy the low family income criterion if they alone participated in JTPA (i.e., just the individual and no other family members participated)?[36] We call this the case of *individual participation*.

Our estimates of earnings gains are taken from Heckman and Smith (1994b). Specifically, we use their estimates of earnings gains distributions for the four major demographic groups (male youth, female youth, male adults, and female adults) which are based on the assumption that *ranks* within *pre*-participation and *post*-participation earnings distributions are perfectly correlated (i.e., that those in the Xth percentile of the pre-participation earnings distribution for the demographic group are in the Xth percentile of the post-participation earnings distribution for the demographic group).[37]

Table 17 presents the basic results under Definition G.[38] The results are striking. After universal participation, the full sample low income eligibility rate would only drop to 12.99 from 14.09 percent. For the case of individual participation, as expected, the drop would be even smaller. As shown in Table 18, just 7.78 percent of the eligibles would be ineligible after universal participation. Just 5.86 percent would be ineligible after individual participation. Looking at the results for alternative demographic groups in Table 17, we observe some variation. Adult females appear to benefit most, which is consistent with most evidence on training, but no group would experience a large drop in its eligibility rate after completing the program.

10. Determining Eligibility using CPS-Type Data

Data from the Income Supplement to the March CPS are sometimes used to measure the size and characteristics of the population eligible for JTPA services (Rupp and Sandell, 1988; U.S.

---

[36]Note that we focus here on eligibility by the low family income criterion alone. To the extent that the earnings gains might make people ineligible for food stamps and cash public assistance, our estimated contribution of JTPA participation to reducing eligibility will be biased downward.

[37]Alternative assumptions are obviously possible. See Heckman and Smith (1994b) on the implications of adopting such alternatives. The assumption that we use already generalizes the traditional procedure which assumes that participation has the same effect for everyone (Heckman, 1990).

[38]This exercise becomes complicated quickly with changing families during the 6-month income measurement period. Complete results for definition G are presented because it is relatively straightforward, but checks on these results showed little sensitivity to this choice.

Department of Labor, 1993a). In this section, we examine the potential accuracy of such estimates.

The Income Supplement to the March CPS collects fairly detailed data on income and social welfare program participation for the calendar year preceding the March interviews. However, only *total* amounts of income received from alternative sources and *total* months of participation in different programs during the previous calendar year are reported in the March CPS. The timing of income receipt and program participation are not reported. Also relevant for eligibility measurement, changes in family size and composition during the reference calendar year and between the end of the reference year and the March interview date are not recorded.

These limits mean that March CPS data (or similar annual data) cannot be used to measure JTPA eligibility precisely. Here we ask whether estimates of the size and demographic characteristics of the JTPA eligible population based on such data are reasonably accurate.

To answer to this question, we compare estimates based on CPS-type data constructed from the detailed SIPP data and estimates based directly on the detailed SIPP data. Specifically, we aggregate family incomes to the 12-month level and then measure eligibility by the low family income criteria under two alternative assumptions about the timing of income receipt: (i) all of a family's 12-month income is received in the 6 months preceding eligibility determination, which represents a lower bound on eligibility, and (ii) one-half of 12-month income is received in the 6-months before eligibility determination. Assumption (ii) would be consistent with a smooth income flow during the year, for example. Of course, we could also use available information about total weeks worked during the year, but these basic assumptions represent a good starting point.[39]

As above, person-months serve as our unit of observation in this analysis, but eligibility is determined only for SIPP reference months 13 to 28 because we use 12-month income intervals as an approximation to the 12-month CPS reference period. Also, since the March CPS collects data on family structure only at the time of the March interview date, we only consider eligibility rules based on *current family* characteristics. Given the evidence reported in earlier sections, this does not seem reason for great concern.

Tables 19 and 20 summarize our findings. Using the assumption that one-half of 12-month income is received in the 6 months preceding eligibility determination, we obtain estimates of the size and demographic composition of the population eligible by the low income criterion using CPS-type data that are nearly identical to those obtained with the more detailed SIPP data. Just 2.54 percent of the sample is classified differently. Logit analysis of the March 1987 subsample (not shown here) also shows almost no difference in demographic variation between survey designs.[40]

Another aspect of the March CPS that one might expect to play a role is the two-month lag between the *calendar* year reference period for reporting income and the March interview. When we

---

[39]Rupp and Sandell (1988) use available labor market data when they use the March CPS to study JTPA eligibility.

[40]These logit results and additional checks are presented in Devine and Heckman (1994a).

simulate this lag by using data for months t-14 to t-3 to calculate eligibility by the income criterion in month t, we again find that the CPS-type and SIPP estimates are essentially the same.

Eligibility based on the cash public assistance and Food Stamp criteria cannot be estimated so easily using the CPS-type data. Interpreting our eligibility estimates as pertaining to eligibility in month 13 (i.e., January of the March CPS survey year), we can use data available on months of Food Stamp receipt during the 12-month period to determine eligibility by virtue of receiving Food Stamps sometime in the previous period. If a person received Food Stamps in more than 6 months during the 12 month period, we know for sure that he or she received Food Stamps in the last 6 months of the year and, therefore, that he or she is eligible. Since current Food Stamp receipt also counts, we could interpret such an estimate based on the previous year as a lower bound. Alternatively, if a person received Food Stamps in at least one month, there is some chance that it was during the last 6 months. Using the same reasoning, we would have an upper bound estimate for past Food Stamp receipt if we count all persons with one or more months of Food Stamp receipt.

Similar reasoning can be used for estimating eligibility using the cash public assistance criterion, although this is a bit more complicated due to the fact that only current receipt of public assistance by the person or another family member counts. In addition, we cannot observe all current family members during the 6 months preceding the eligibility determination date, so observation of cash public assistance receipt in prior periods is incomplete.

Aware of these constraints, we performed some simple calculations. In addition to the 12.45 percent of persons eligible by virtue of the low family income criterion based on the CPS-type income for the current extended family, 2.79 percent of the sample does not satisfy the low income criterion, but does satisfy either (i) the cash public assistance criterion, defined here as one or more months of receipt by the individual or a member of the individual's current family (when observed) during the preceding 12-month period, or (ii) the Food Stamps criterion, defined here as one or months of receipt by the individual during the 12-month period. Thus, an estimate of the total eligibility rate for definition G using the CPS-type data is 15.24 percent, as compared to 15.08 under definition G using the current-month observations on Food Stamp and cash public assistance receipt for the full SIPP sample (i.e., reference period months 7+). The results are similar across samples.

11. Conclusion

In this paper, we have examined the design and consequences of the eligibility rules for programs authorized by the Job Training Partnership Act -- a major social program in the United States. Several striking findings emerge from our analysis.

We find that variation in written eligibility rules over time and across states which appears important is, in fact, not very important. The eligibility status of relatively few persons is affected by such variation -- and those who are most likely to participate are the least affected.

On the other hand, aspects of the eligibility rules that have remained stable over time and do not vary across states are quite effective in screening persons into and out of the pool of eligibles. These aspects include: (i) the determination of eligibility on the basis of *family* characteristics and income, instead of *individual* characteristics and income, (ii) *excluding* unemployment benefits, cash public assistance, and child support payments from income when determining eligibility on the basis of recent family income, (iii) *including* Social Security benefits from income when determining eligibility on the basis of recent family income, and (iv) the use of *welfare program participation* (current cash public assistance receipt and current and past Food Stamp receipt) as a sufficient condition for eligibility. Changing these criteria would have important effects on the size and composition of the eligible population.

Although most of those who satisfy the federal definition of being "poor" are eligible for JTPA, many of the eligibles do not satisfy the federal definition of poverty or any one of several alternative definitions. We also find that eligibility rules do not explain Ashenfelter's Dip in own earnings for any group. The eligibility rules produce a decline in the income of the family, but the rules do not explain the pattern of individual earnings observed for participants. Using estimated earnings gains from the National JTPA Study and escape from eligibility as a measure of potential program success, we find that very few persons would lose their eligibility status if *all* eligibles participated in the program.

We examine how well data from the March CPS can be used to measure eligibility and find that estimates based on very simple assumptions about the timing of income receipt produce reliable estimates of eligibility.

Throughout the paper, we attempt to evaluate the eligibility rules in terms of their implications for equity and efficiency in the provision of a public service. In general, the eligibility rules appear to produce outcomes that are inequitable when standard income-based measures of equity are used. This inequity can be justified. We consider a variety of economic models often used to evaluate and justify government intervention in human capital markets. We find that many (though not all) of the eligibility rules and, in fact, the general design of the JTPA program can be interpreted as a method for achieving efficient targeting of human capital services.

Finally, we have focused on one major social program -- JTPA. However, our evidence on the consequences of specific eligibility rules is more general and applies to the design of all targeted social programs. Given the current desire to reform social programs in the U.S. and the current interest in shifting more toward block-grant programs like JTPA, our evidence informs debate about the consequences of program redesign.

References

Akerlof, George A. "The Economics of 'Tagging' as Applied to the Optimal Income Tax, Welfare Programs, and Manpower Planning" *American Economic Review*, vol. 68, no. 1, March 1978, 8-19.

Ashenfelter, Orley, "Estimating the Effect of Training Programs on Earnings," *Review of Economics and Statistics*, vol. 60, 1978, 47-57.

Ashenfelter, Orley, and David Card, "Using the Longitudinal Structure of Earnings to Estimate the Effect of Training Programs," *Review of Economics and Statistics*, vol. 67, 1985, 648-660.

Banfield, Edward C., *The Unheavenly City*, Boston: Little-Brown, 1970.

Becker, Gary, *A Treatise on the Family*, Cambridge, Mass: Harvard University Press, 1991.

Becker, G. and Casey Mulligan, "On The Endogenous Determination of Time Preference," unpublished manuscript, University of Chicago, 1994.

Brodkin, Evelyn Z., *The False Promise of Administrative Reform: Implementing Quality Control in Welfare*, Philadelphia: Temple University Press, 1986.

Citro, Constance and Robert T. Michael, *Measuring Poverty: A New Approach*, Washington, D.C.: National Academy Press, 1995.

Devine, Theresa J. and James J. Heckman, "The Consequences of Eligibility Rules for a Social Program: A Study of the Job Training Partnership Act (JTPA)," Final Report, Center for Social Program Evaluation, Harris School of Public Policy, University of Chicago, 1994a.

Devine, Theresa J. and James J. Heckman, "Evidence on the Seam Pattern in SIPP Earnings Data," Working Paper, Center for Social Program Evaluation, Harris School of Public Policy, University of Chicago, 1994b.

Elster, Jon, *Local Justice: How Institutions Allocate Scarce Goods and Necessary Burdens*, New York: Russell Sage Foundation, 1992.

Heckman, James J., "Effects of Child Care Programs on Women's Work Effort", *Journal of Political Economy*, vol. 82, 136-63, 1974.

Heckman, James J., "Randomization and Social Program Evaluation," in C. Manski and I. Garfinkel, *Evaluating Welfare and Training Programs*, Cambridge: MIT Press, 1992.

Heckman, James J., and Jeffrey A. Smith, "Ashenfelter's Dip and the Determinants of Participation in a Social Program: Separating the Impact of Administrative Rules and Individual Behavior," Technical Report 4, Harris School JTPA Project, University of Chicago, 1994a.

Heckman, James J., and Jeffrey A. Smith, "Estimating the Distribution of Impacts from a Social Program," Working Paper, Harris School JTPA Project, University of Chicago, 1994b.

Jencks, Christopher, and Kathryn Edin, "The Real Welfare Problem," *American Prospect*, vol. 1, 1990, 31-50.

Kaplow, Louis, "Optimal Distribution and the Family," Working Paper, Harvard Law School, 1994.

Laffont, Jean-Jacques, *Fundamentals of Public Economics*, Cambridge, Massachusetts: MIT Press, Second Edition, 1989.

LeGrand, Julian, "Public Price Discrimination and Aid To Low Income Groups", *Economica*, vol. 42, 1975, 32-42.

Lundberg, Shelley, Robert A. Pollak, and T.J. Wales, "Do Husbands and Wives Pool Their Resources? Evidence from the U.K. Child Benefit," Discussion Series Paper 94-06, Institute for Economic Research, University of Washington.

National Commission for Employment Policy, *Training Hispanics: Implications for the JTPA System*, Report Number 27, January 1990.

Nichols, Albert L. and Richard J. Zeckhauser, "Targeting Transfers through Restrictions on Recipients," *American Economic Review*, vol. 72, no. 2, May 1982, 372-377.

Parsons, Donald O., "Imperfect 'Tagging' in Social Insurance Programs," Working Paper, The Ohio State University, 1994.

Romero, Fred and Judith Gonzales, *Falling through the Cracks: Hispanic Underrepresentation in the Job Training Partnership Act*, National Council of La Raza, 1989.

Rosenzweig, Mark R. and Kenneth I. Wolpin, "Intergenerational Support and the Life-Cycle Incomes of Young Men and Their Parents: Human Capital Investments, Coresidence, and Intergenerational Financial Transfers," *Journal of Labor Economics*, vol. 11, no. 1, part 1, 1993, 84-112.

Rosenzweig, Mark R. and Kenneth I. Wolpin, "Inequality among Young Adult Siblings, Public Assistance Programs, and Intergenerational Living Arrangements," *Journal of Human Resources*, forthcoming(a).

Rosenzweig, Mark R. and Kenneth I. Wolpin, "Parental and Public Transfers to Young Women," *American Economic Review*, forthcoming(b).

Rupp, Kalman, and Steven H. Sandell, "Who is Served in JTPA Programs: Patterns of Participation and Intergroup Equity," Working Paper, WESTAT, Inc., 1988.

Thomas, Duncan, "Intra-Household Resource Allocation: An Inferential Approach," *Journal of Human Resources*, vol. 25, no. 4, Fall 1990, 635-664.

U.S. Department of Labor, *Job Training Quarterly Survey: JTPA Title IIA and III Enrollments and Terminations During Program Year 1991 (July 1991-June 1992)*, Employment and Training Administration, 1993a.

U.S. Department of Labor, *JTPA Title II Eligibility Documentation: A Technical Assistance and Training Series*, Employment and Training Administration, 1993b.

U.S. Government Accounting Office, *Multiple Employment Programs: Conflicting Requirements Hamper Delivery of Services*, Report to the Chairman, Subcommittee on Employment and Productivity, Committee on Labor and Human Resources, U.S. Senate, Report Number GAO/HEHS-94-78, 1994.

Young, Peyton, *Equity in Theory and Practice*, Princeton: Princeton University Press, 1994.

Table 1. Eligibility Definitions

Eligibility Definition	*Basic Family Definition*	*Family Measure for*			*Food Stamp Rule*	*Percent Eligible*
		6-Month Family Income	*Size for Income Cutoff*	*Cash Welfare Receipt*		
A	Extended	Past Families	Current Size	Current	Current Receipt	14.63
B	Extended	Past Families	Maximum Size in Past 6 Mos.	Current	Current Receipt	14.89
C	Nuclear	Past Families	Current Size	Current	Current Receipt	14.64
D	Nuclear	Past Families	Maximum Size in Past 6 Mos.	Current	Current Receipt	14.82
E	Nuclear	Past Families	Current Size	Current	Receipt in Past 6 Mos.	15.14
F	Nuclear	Past Families	Maximum Size in Past 6 Mos.	Current	Receipt in Past 6 Mos.	15.30
G	Extended	Current Family	Current Size	Current	Current Receipt	15.08
H	Nuclear	Current Family	Current Size	Current	Current Receipt	15.03
I	Nuclear	Current Family	Current Size	Current	Receipt in Past 6 Mos.	15.52

Table 2. Eligibility Rates for Demographic Groups under Alternative Eligibility Definitions

	Percent Eligible under Definition:								
	A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*
Full Sample	14.63	14.89	14.64	14.82	15.14	15.30	15.08	15.03	15.52
Male	11.67	11.89	11.52	11.70	11.95	12.10	12.01	11.83	12.23
Female	17.36	17.65	17.52	17.70	18.08	18.24	17.91	17.97	18.54
White	10.33	10.51	10.41	10.56	10.82	10.96	10.74	10.80	11.21
Black	38.69	39.13	38.04	38.31	39.18	39.36	39.07	38.37	39.48
Hispanic	32.16	33.00	32.24	32.66	32.92	33.33	33.00	32.62	33.38
Asian/Other	21.26	21.51	21.11	21.23	21.47	21.54	22.06	21.35	21.64
Ages 16-21	19.00	19.62	20.09	20.63	20.90	21.38	20.33	21.25	22.03
Ages 22-24	18.90	19.16	19.79	19.97	20.33	20.47	20.09	20.78	21.32
Ages 25-34	14.99	15.16	15.26	15.35	15.74	15.81	15.20	15.41	15.90
Ages 35-44	11.87	12.01	11.44	11.52	11.80	11.89	12.02	11.56	11.91
Ages 45-54	12.02	12.26	10.83	11.00	11.25	11.38	12.19	11.01	11.41
Years of Education:									
0 to 8	39.75	40.45	39.29	39.69	40.08	40.40	40.22	39.73	40.44
9 to 11	29.47	29.98	29.68	30.04	30.62	30.92	30.14	30.12	31.06
12	14.19	14.47	14.16	14.36	14.77	14.95	14.73	14.65	15.24
13 to 15	8.50	8.63	8.67	8.76	8.97	9.05	8.86	8.97	9.27
16	4.07	4.13	3.97	4.03	4.06	4.12	4.44	4.35	4.45
17 or more	3.80	3.83	3.66	3.69	3.71	3.73	3.87	3.73	3.78
Never Married	19.60	19.96	20.15	20.48	20.74	21.03	20.59	21.04	21.58
Married	9.27	9.38	9.04	9.07	9.45	9.47	9.31	9.03	9.47
Widow/Div/Separated	29.01	29.73	28.81	29.40	29.54	30.04	30.16	29.89	30.49
Male Youth	16.79	17.39	16.92	17.47	17.71	18.19	17.87	17.88	18.62
Female Youth	21.14	21.78	23.17	23.69	23.99	24.48	22.71	24.51	25.33
Male Adults	10.63	10.77	10.42	10.52	10.77	10.86	10.82	10.60	10.93
Female Adults	16.63	16.86	16.43	16.56	16.95	17.04	16.99	16.72	17.24

Table 3. Eligibility Logit Results in July 1986: Full Sample
N = 14746

	Definition A			Definition B			Definition F			Definition G		
	Coeff	Std Error	Deriv	Coeff	Std Error	Deriv	Coeff	Std Errror	Deriv	Coeff	Std Error	Deriv
Constant	-2.252	0.085	-0.249	-2.251	0.085	-0.249	-2.239	0.084	-0.256	-2.222	0.084	-0.248
Black	1.287	0.072	0.142	1.260	0.072	0.140	1.238	0.071	0.141	1.263	0.072	0.141
Hispanic	0.909	0.079	0.100	0.937	0.079	0.104	0.929	0.078	0.106	0.926	0.078	0.103
Asian, Other	0.965	0.133	0.107	0.961	0.133	0.107	0.903	0.134	0.103	0.887	0.134	0.099
Female	0.392	0.051	0.043	0.386	0.051	0.043	0.421	0.050	0.048	0.390	0.051	0.044
Age 16 to 18	-1.058	0.105	-0.117	-1.064	0.105	-0.118	-0.970	0.102	-0.111	-1.006	0.104	-0.112
Age 19 to 21	-0.238	0.099	-0.026	-0.259	0.099	-0.029	-0.105	0.095	-0.012	-0.164	0.098	-0.018
Age 22 to 24	-0.034	0.090	-0.004	-0.045	0.090	-0.005	0.048	0.088	0.006	0.025	0.089	0.003
Age 35 to 44	-0.370	0.071	-0.041	-0.391	0.071	-0.043	-0.466	0.071	-0.053	-0.381	0.071	-0.043
Age 45 to 54	-0.645	0.082	-0.071	-0.648	0.082	-0.072	-0.743	0.082	-0.085	-0.622	0.081	-0.070
0 to 8 Years Ed.	1.359	0.094	0.150	1.360	0.094	0.151	1.369	0.093	0.156	1.315	0.094	0.147
9 to 11 Years Ed.	0.970	0.067	0.107	0.989	0.067	0.110	1.007	0.066	0.115	0.958	0.067	0.107
13 to 15 Years Ed.	-0.625	0.075	-0.069	-0.626	0.075	-0.069	-0.614	0.073	-0.070	-0.664	0.075	-0.074
16 Years Ed.	-1.214	0.126	-0.134	-1.203	0.126	-0.133	-1.304	0.128	-0.149	-1.125	0.121	-0.126
17 or more Years Ed.	-1.278	0.146	-0.141	-1.280	0.146	-0.142	-1.302	0.146	-0.149	-1.312	0.148	-0.147
Never Married	0.711	0.071	0.079	0.715	0.071	0.079	0.718	0.070	0.082	0.736	0.070	0.082
Widow, Div, Sep	1.157	0.071	0.128	1.184	0.071	0.131	1.230	0.071	0.140	1.237	0.071	0.138
Midwest	0.018	0.076	0.002	0.020	0.076	0.002	0.029	0.076	0.003	-0.039	0.076	-0.004
Northeast	-0.105	0.080	-0.012	-0.089	0.080	-0.010	-0.110	0.080	-0.013	-0.144	0.080	-0.016
South	-0.210	0.072	-0.023	-0.192	0.072	-0.021	-0.114	0.071	-0.013	-0.242	0.071	-0.027
Eligible	15.665%			15.774%			16.574%			15.957%		

Table 4. Eligibility Rates Before and After the 1992 Amendments Definitions B and F

	Post-Amendments (F) *Not Eligible* *[% of row]*	*Post-Amendments (F)* *Eligible* *[% of row]*	*Row Sum*
Pre-Amendments (B) *Not Eligible (% of column)*	83.84 [98.50] (98.98)	1.28 [1.50] (8.35)	85.11
Pre-Amendments (B) *Eligible (% of column)*	0.87 [5.83] (1.02)	14.02 [94.17] (91.65)	14.89
Column Sum	84.70	15.30	100.00

Table 5. JTPA Eligibility by Specific Criteria under Definition F

	Percent of Definition F Eligible Sample with Criteria Satisfied:								
	Low Family Income					*Not Low Family Income*			
	Total with Low Family Income	*Only*	*& Food Stamps*	*& Cash Public Assist*	*& Food Stamps & Cash Public Assist*	*Total without Low Family Income*	*Food Stamps*	*Cash Public Assist*	*Food Stamps & Cash Public Assist*
All	87.88	42.86	17.67	5.82	21.54	12.12	5.49	5.86	0.77
Males	86.47	50.47	17.58	5.89	12.53	13.53	5.96	6.79	0.78
Females	88.75	38.21	17.72	5.78	27.04	11.25	5.19	5.29	0.77
White	86.35	48.01	17.23	4.89	16.23	13.65	6.26	6.72	0.67
Black	87.82	24.85	21.16	8.81	32.99	12.18	5.42	5.90	0.86
Hispanic	92.41	48.78	14.79	6.21	22.63	7.59	3.22	3.46	0.92
Asian/Other	92.88	42.65	16.35	1.35	32.53	7.12	3.41	2.53	1.18
Ages 16-21	88.29	44.35	16.85	6.03	21.06	11.71	5.94	4.97	0.80
Ages 22-24	87.37	45.98	13.90	7.30	20.20	12.63	4.35	7.40	0.88
Ages 25-34	89.22	42.02	18.46	5.86	22.88	10.78	5.49	4.57	0.72
Ages 35-44	88.64	40.71	19.70	4.16	24.08	11.36	5.52	4.93	0.91
Ages 45-54	83.30	42.87	17.34	6.65	16.45	16.70	5.63	10.52	0.55
Years of Ed:									
0 to 8	91.33	38.71	22.13	4.84	25.66	8.67	3.60	4.61	0.45
9 to 11	89.83	34.35	19.77	7.05	28.67	10.17	5.26	4.29	0.62
12	85.25	42.30	18.14	6.06	18.74	14.75	6.71	7.03	1.01
13 to 15	85.90	56.48	11.06	4.41	13.96	14.10	5.28	8.25	0.56
16	89.19	75.36	6.20	3.18	4.45	10.81	4.45	3.97	2.38
17 or more	92.67	79.70	6.24	1.09	5.64	7.33	2.08	5.25	0.00
Never Married	86.98	41.27	12.99	8.20	24.53	13.02	4.58	7.64	0.80
Married	86.69	47.04	23.88	3.37	12.40	13.31	7.31	5.57	0.42
Widow/Div/Sep	91.56	39.03	16.40	5.30	30.85	8.44	4.22	2.91	1.30

Table 6. Comparison of Welfare Participation Rates by Income Level and Race and Ethnicity: Full Sample

JTPA-Counted Family Income (Y) as Proportion of Threshold (T) for Low Family Income Eligibility	*Percent Eligible by Receipt of Food Stamps or Family Receipt of Cash Public Assistance*				*P-Value for Hypothesis of Equal Eligibility Rates Chi-Square Test*					
	White	*Black*	*Asian & Other*	*Hispanic*	*White vs. Black*	*White vs. Hispanic*	*White vs. Asian & Other*	*Black vs. Hispanic*	*Black vs. Asian & Other*	*Hispanic vs. Asian & Other*
$Y \leq 0.25T$	52.33	69.32	55.92	61.63	0.000	0.000	0.057	0.000	0.000	0.005
$0.25T < Y \leq 0.50T$	43.34	68.19	67.28	40.31	0.000	0.089	0.000	0.000	0.791	0.000
$0.50T < Y \leq 0.75T$	34.46	58.39	56.79	24.40	0.000	0.000	0.000	0.000	0.616	0.000
$0.75T < Y \leq 1.00T$	22.19	34.38	30.07	21.41	0.000	0.487	0.001	0.000	0.148	0.001
$1.00T < Y \leq 1.25T$	8.92	18.07	11.95	9.02	0.000	0.890	0.076	0.000	0.011	0.113
$1.25T < Y \leq 1.50T$	3.23	11.62	4.66	3.72	0.000	0.295	0.143	0.000	0.000	0.408
$1.50T < Y \leq 1.75T$	2.13	4.98	3.44	1.41	0.000	0.060	0.132	0.000	0.257	0.015
$1.75T < Y \leq 2.00T$	1.20	1.80	0.00	0.93	0.039	0.376	0.010	0.041	0.002	0.025
$Y > 2.00T$	0.23	0.78	0.35	0.41	0.000	0.001	0.081	0.002	0.002	0.590

Note that the income and threshold definitions used here are those used under Definition F, which uses the nuclear family definition, incomes of families during the 6-month interval, the maximum family size during the 6-month income interval, and receipt of food stamps either currently or within the past 6 months. Also note that all persons with family incomes less than or equal to the low family income threshold are eligible, whether or not they receive food stamps or cash public assistance.

Table 7. Logit Results for Alternative Eligibility Criteria under Definition F

	Eligibility under Definition F			*Cash Public Assistance/Food Stamp Receipt (Definition F)*			*Low Family 6-Month Income (Definition F)*		
	Coeff	*Asymptotic t*	*Derivative*	*Coeff*	*Asymptotic t*	*Derivative*	*Coeff*	*Asymptotic t*	*Derivative*
Intercept	-2.239	27.355	-0.256	-3.195	29.317	-0.223	-2.343	27.578	-0.246
Black	1.238	16.950	0.141	1.401	16.625	0.098	1.212	16.228	0.127
Hispanic	0.929	12.063	0.106	0.526	5.392	0.037	0.970	12.393	0.102
Asian/Other	0.903	6.753	0.103	0.978	5.824	0.068	0.974	7.181	0.102
Female	0.421	8.368	0.048	0.669	9.947	0.047	0.421	8.030	0.044
Age 16 to 18	-0.971	9.661	-0.111	-1.045	8.568	-0.073	-0.881	8.511	-0.093
Age 19 to 21	-0.105	1.114	-0.012	-0.307	2.572	-0.021	-0.101	1.025	-0.011
Age 22 to 24	0.048	0.559	0.006	-0.118	1.038	-0.008	0.037	0.417	0.004
Age 35 to 44	-0.466	6.618	-0.053	-0.275	3.084	-0.019	-0.503	6.876	-0.053
Age 45 to 54	-0.743	9.026	-0.085	-0.758	7.276	-0.053	-0.816	9.356	-0.086
0-8 Yrs Educ	1.369	15.197	0.156	1.259	11.770	0.088	1.402	15.140	0.147
9-11 Yrs Educ	1.007	15.399	0.115	1.049	13.633	0.073	0.993	14.685	0.104
13-15 Yrs Educ	-0.614	8.476	-0.070	-0.964	8.918	-0.067	-0.547	7.198	-0.058
16 Yrs Educ	-1.304	10.263	-0.149	-2.114	8.655	-0.147	-1.207	9.110	-0.127
17+ Yrs Educ	-1.302	8.821	-0.149	-2.249	7.547	-0.157	-1.216	7.852	-0.128
Never Married	0.718	10.594	0.082	0.748	8.806	0.052	0.655	9.294	0.069
Widow/Div/Sep	1.230	17.285	0.140	1.098	12.421	0.077	1.267	17.308	0.133
Midwest	0.029	0.384	0.003	0.189	1.935	0.013	-0.016	0.211	-0.002
Northeast	-0.110	1.398	-0.013	0.039	0.379	0.003	-0.176	2.162	-0.019
South	-0.114	1.625	-0.013	-0.014	0.146	-0.001	-0.201	2.769	-0.021
Mean Predicted Probability	0.1657			0.090			0.148		
Log Likelihood	5475.1			3611.6			5126.7		
Number of: Person-Months Individuals	14,746								

Table 8.A. Definition F Eligibility Rates for Unemployment Benefit Recipients and their Family Members

	Percent Eligible by Low Family Income Criterion with Unemployment Benefits:			*Percent Eligible by Any Criteria with Unemployment Benefits:*		
	Excluded (Basic F Income Eligibility)	*Either Excluded or Included*	*Excluded Only (Percent of F Income Eligibles)*	*Excluded (Basic F Income, PA, or FS Eligibility)*	*Excluded or Included*	*Excluded Only (Percent of F Eligibles)*
Full Sample N=21,026	22.47	15.83	6.64 (29.54)	24.38	18.45	5.93 (24.32)
Male Youth N=1,978	17.04	11.63	5.41 (31.75)	18.86	14.00	4.85 (25.74)
Female Youth N=1,747	32.91	27.02	5.90 (17.91)	34.75	29.99	4.75 (13.67)
Male Adults N=8,317	20.57	13.83	6.75 (32.79)	22.26	16.22	6.04 (27.12)
Female Adults N=8,607	24.07	17.18	6.89 (28.63)	26.02	19.94	6.08 (23.38)

Table 8.B. Definition F Low Income Eligibility Rates for Cash Public Assistance Recipients and their Family Members

	Percent Eligible by Low Family Income Criterion with Public Assistance:			*Percent Eligible by Any Criterion with Public Assistance:*		
	Excluded (Basic F Income Eligibility)	*Either Excluded or Included*	*Excluded Only (Percent of F Income Eligibles)*	*Excluded (Basic F Income, PA, or FS Eligibility)*	*Either Excluded or Included*	*Excluded Only (Percent of F Eligibles)*
Full Sample N=16,844	77.68	69.81	7.87 (10.13)	95.99	95.61	0.38 (0.40)
Male Youth N=1,397	74.80	67.36	7.44 (9.95)	94.49	94.27	0.21 (0.23)
Female Youth N=2,259	82.51	74.37	8.15 (9.87)	97.61	97.48	0.13 (0.14)
Male Adults N=3,707	65.28	54.28	11.01 (16.86)	93.04	92.39	0.65 (0.70)
Female Adults N=9,481	81.80	75.16	6.63 (8.11)	96.97	96.61	0.36 (0.37)

Table 8.C. Definition F Eligibility Rates for Social Security Recipients and their Family Members

	Percent Eligible by Low Family Income Criterion with Social Security:			*Percent Eligible by Any Criteria with Social Security:*		
	Included (Basic F Income Eligibility)	*Included or Excluded (Expanded F Income Eligibles)*	*Excluded Only (Percent of Expanded F Income Eligibles)*	*Included (Basic F Income, PA, or FS Eligibility)*	*Included or Excluded (Expanded F Eligibles)*	*Excluded Only (Percent of Expanded F Eligibles)*
Full Sample N=17,953	17.09	34.14	17.04 (49.93)	23.68	38.23	14.55 (38.06)
Male Youth N=1,925	18.39	32.99	14.60 (44.25)	25.25	37.61	12.36 (32.87)
Female Youth N=1,750	30.29	48.23	17.94 (37.20)	35.94	50.23	14.29 (28.44)
Male Adults N=6,782	12.87	29.43	16.56 (56.26)	19.79	33.65	13.86 (41.19)
Female Adults N=7,496	17.50	35.41	17.90 (50.57)	23.93	39.73	15.80 (39.76)

Table 9.A. Comparison of Nuclear Family and Individual Eligibility Rates (Definition F)
Main entry is percentage of sample

	Individual Not Eligible [% of row]	*Individual Eligible [% of row]*	*Row Sum*
Nuclear Family Not Eligible (% of column)	62.29 [73.54] (97.30)	22.41 [26.46] (62.29)	84.70
Nuclear Family Eligible (% of column)	1.73 [11.30] (2.70)	13.57 [88.70] (37.71)	15.30
Column Sum	64.02	35.98	100.00

Table 9.B. Nuclear Family versus Individual Low Income Eligibility (Definition F)
Main entry is percentage of sample

	Individual Not Eligible [% of row]	*Individual Eligible [% of row]*	*Row Sum*
Nuclear Family Not Eligible (% of column)	63.28 [73.11] (96.73)	23.28 [26.89] (67.31)	86.56
Nuclear Family Eligible (% of column)	2.14 [15.90] (3.27)	11.31 [84.10] (32.69)	13.44
Column Sum	65.42	34.58	100.00

Table 9.C. Nuclear Family versus Individual Welfare Receipt Eligibility (Definition F)
Main entry is percentage of sample

	Individual Not Eligible [% of row]	*Individual Eligible [% of row]*	*Row Sum*
Nuclear Family Not Eligible (% of column)	91.26 [100.00] (97.65)	0 [0] (0)	91.26
Nuclear Family Eligible (% of column)	2.20 [25.18] (2.35)	6.54 [74.82] (100.00)	8.74
Column Sum	93.46	6.54	100.00

Table 10.A. Low Income Eligibility Rates under Alternative Family Income Sharing Rules

	Percent Eligible by Low Income Criterion using:			
	Nuclear Family Income (Definition F)	*Individual Income*	*Nuclear Family Per Capita Income*	*Nuclear Family Weighted Per Capita Income*
Full Sample	13.44	34.58	24.00	22.14
Male	10.47	21.89	20.45	18.79
Female	16.18	46.25	27.27	25.22
White	9.46	32.24	18.89	17.12
Black	34.57	47.20	48.91	46.56
Hispanic	30.80	43.56	50.00	47.58
Asian/Other	20.01	41.05	29.27	27.86
Ages 16-21	18.88	76.66	30.85	31.58
Ages 22-24	17.89	36.38	27.24	25.69
Ages 25-34	14.10	27.41	26.42	23.29
Ages 35-44	10.54	22.18	21.43	18.57
Ages 45-54	9.48	25.55	15.82	15.07
Years of Education:				
0 to 8	36.90	51.63	54.50	53.22
9 to 11	27.78	66.08	43.47	43.20
12	12.74	32.92	24.87	22.08
13 to 15	7.78	29.18	16.50	14.25
16	3.68	16.51	7.91	6.76
17 or more	3.46	10.94	6.51	5.46
Never Married	18.29	53.21	25.99	26.28
Married	8.21	26.69	20.90	17.95
Wid/Div/Sep	27.51	24.74	34.74	32.72
Male Youth	15.74	73.61	27.55	28.37
Female Youth	21.92	79.62	34.06	34.70
Male Adults	9.39	11.36	19.01	16.84
Female Adults	15.09	39.87	25.97	23.41

Table 10.B. Welfare Receipt Eligibility Rates using Individual and Nuclear Family Rules

	Percent Eligible by Public Assistance or Food Stamps Criteria using:	
	Nuclear Family	*Individual*
Full Sample	8.74	6.54
Male	6.00	4.05
Female	11.27	8.83
White	5.70	4.03
Black	29.58	23.71
Hispanic	17.07	13.08
Asian/Other	12.35	10.36
Ages 16-21	11.90	8.54
Ages 22-24	11.06	7.88
Ages 25-34	9.16	7.24
Ages 35-44	7.05	5.47
Ages 45-54	6.50	4.44
Years of Education:		
0 to 8	24.76	20.70
9 to 11	20.30	16.33
12	8.62	5.95
13 to 15	3.94	2.62
16	1.02	0.55
17 or more	0.76	0.47
Never Married	12.35	9.38
Married	5.02	3.37
Wid/Div/Sep	18.32	15.34
Male Youth	9.89	6.75
Female Youth	13.84	10.28
Male Adults	5.20	3.50
Female Adults	10.77	8.55

Note: The difference between definitions is based on individual versus family receipt of cash public assistance. Both definitions use *individual* Food Stamp receipt.

Table 11. Logit Results for Family versus Individual Eligibility Definitions: July 1986 Sample

	Family (Definition F)			*Per Capita*			*Individual*		
	Coeff	*Asymptotic t*	*Derivative*	*Coeff*	*Asymptotic t*	*Derivative*	*Coeff*	*Asymptotic t*	*Derivative*
Intercept	-2.239	27.355	-0.256	-1.058	15.837	-0.169	-1.693	23.387	-0.283
Black	1.238	16.950	0.141	1.179	17.302	0.188	0.401	5.629	0.067
Hispanic	0.929	12.063	0.106	0.977	13.863	0.156	0.187	2.424	0.031
Asian/Other	0.903	6.753	0.103	0.695	5.704	0.111	0.628	5.375	0.105
Female	0.421	8.368	0.048	0.299	7.123	0.048	1.434	32.101	0.240
Age 16 to 18	-0.971	9.661	-0.111	-0.441	4.791	-0.071	2.967	23.575	0.496
Age 19 to 21	-0.105	1.114	-0.012	-0.010	0.116	-0.002	1.157	14.874	0.193
Age 22 to 24	0.048	0.559	0.006	-0.087	1.106	-0.014	0.268	3.713	0.045
Age 35 to 44	-0.466	6.618	-0.053	-0.422	7.538	-0.067	-0.279	5.066	-0.047
Age 45 to 54	-0.743	9.026	-0.085	-1.133	16.178	-0.181	-0.273	4.389	-0.046
0-8 Yrs Educ	1.369	15.197	0.156	1.241	14.376	0.198	0.993	10.864	0.166
9-11 Yrs Educ	1.007	15.399	0.115	0.896	15.167	0.143	0.927	14.684	0.155
13-15 Yrs Educ	-0.614	8.476	-0.070	-0.573	9.986	-0.092	-0.144	2.741	-0.024
16 Yrs Educ	-1.304	10.263	-0.149	-1.365	13.945	-0.218	-0.663	8.669	-0.111
17+ Yrs Educ	-1.302	8.821	-0.149	-1.571	13.196	-0.251	-1.025	10.884	-0.171
Never Married	0.718	10.594	0.082	-0.182	2.953	-0.029	0.183	3.083	0.031
Widow/Div/Sep	1.230	17.285	0.140	0.569	8.870	0.091	-0.309	4.699	-0.052
Midwest	0.029	0.384	0.003	0.032	0.510	0.005	0.045	0.736	0.008
Northeast	-0.110	1.398	-0.013	-0.132	1.979	-0.021	-0.074	1.133	-0.012
South	-0.114	1.625	-0.013	-0.019	0.313	-0.003	-0.039	0.656	-0.006
Mean Predicted Probability	0.1657			0.260			0.371		
Log Likelihood	5475.1			7199.2			7428.5		
Number of: Person-Months	14,746								

Table 12. Low Income Eligibility Status by Residential Status

	Males								*Females*							
	Living Apart from Parent(s)				*Living With Parent(s)*				*Living Apart from Parent(s)*				*Living With Parent(s)*			
	Percent of Group	*Percent Eligible Counting Income of*			*Percent of Group*	*Percent Eligible Counting Income of*			*Percent of Group*	*Percent Eligible Counting Income of*			*Percent of Group*	*Percent Eligible Counting Income of*		
		Nuclear Family	*Indiv*	*Nuclear Per Capita*		*Nuclear Family*	*Indiv*	*Nuclear Per Capita*		*Nuclear Family*	*Indiv*	*Nuclear Per Capita*		*Nuclear Family*	*Indiv*	*Nuclear Per Capita*
Full Sample	76.02	10.11	9.78	19.89	23.98	11.60	60.29	22.24	80.09	15.70	40.55	26.58	19.91	18.13	69.19	30.01
Age 16-18	5.59	70.48	78.10	73.33	94.41	14.52	92.22	29.32	8.80	62.67	85.42	71.82	91.20	17.14	95.41	32.23
Age 19-21	24.52	28.84	31.77	35.37	75.48	8.29	57.45	17.94	35.93	36.56	53.97	43.79	64.07	15.05	68.21	25.73
Age 22-24	54.79	19.10	19.03	26.38	45.21	8.50	34.83	14.80	67.48	22.48	43.75	34.79	32.52	18.13	48.96	28.19
Age 25-27	77.43	12.35	11.37	23.31	22.57	12.61	30.40	16.99	86.12	20.15	43.29	32.76	13.88	20.57	36.54	28.94
Age 28-30	87.93	10.35	7.91	21.44	12.07	11.49	32.37	22.36	91.67	16.42	41.15	30.30	8.33	24.94	40.45	35.17
Age 31-40	94.41	8.24	7.23	20.51	5.59	11.69	27.58	19.51	95.10	13.69	38.35	26.97	4.90	32.28	43.88	41.82
Age 41-54	96.87	7.31	8.11	14.57	3.13	14.41	29.06	27.13	96.25	11.31	38.52	18.25	3.75	12.03	29.99	19.43

Note: Eligibility by the low income criteria counting income of the Nuclear Family is the same as Definition F low income eligibility status, which is based on income of families during the preceding 6 months and maximum family size during the preceding 6 months. Nuclear Per Capita low income eligibility status is also based on incomes of families during the preceding 6 months, but "per capita" income for each of the 6 months is the sum of incomes for family members for the month divided by family size for the month and eligibility is based on the sum of the 6 per capita incomes and family size equal to one. Individual income is simply the sum of the individual's incomes in the 6 preceding months and family size is equal to one for eligibility determination. Residential status is based on reported residence either with or apart from a parent or legal guardian in the month of eligibility determination. A student who is neither married nor in nursing training and living away from the parental home is (in principle) counted as living in the parental home if the parent(s) maintain "living quarters" for the child. The same holds for persons living apart from the parental home for job-related reasons.

Table 13. Income Eligibility using Alternative Intervals for Income Eligibility (Nuclear Family and Maximum Family Size during Income Interval)

Percent Eligible using:	*Full Sample*	*Male Youth*	*Male Adults*	*Female Youth*	*Female Adults*
3 Month Income	13.52	16.18	9.50	21.61	15.15
6 Month Income	13.14	15.53	9.06	21.53	14.81
9 Month Income	13.04	15.50	8.89	21.49	14.74
At Least 1 Window	15.38	18.47	11.06	24.63	16.97
Only 3 Month Income	1.37	1.76	1.28	1.78	1.31
Only 6 Month Income	0.22	0.21	0.21	0.35	0.20
Only 9 Month Income	0.72	0.94	0.60	1.14	0.71
3 & 6 Month Income	0.75	0.99	0.69	1.01	0.72
3 & 9 Month Income	0.15	0.23	0.12	0.18	0.14
6 & 9 Month Income	0.92	1.14	0.75	1.53	0.91
3, 6, & 9 Month Income (Percent of Total Eligibles under 1+ Window)	11.25 (73.15)	13.19 (71.41)	7.42 (67.09)	18.64 (75.68)	12.98 (76.49)

Note: Sample is restricted to 243,591 person months for survey months 10 and following which satisfy age 16-54 restriction and in-sample and interview restrictions for 9 months preceding month of eligibility determination. Note that the 6-month window case is the same as the income eligibility definitions used in definitions D, E, and F above.

Table 14. Poverty and JTPA Eligibility
JTPA Eligibility under Definition F
Poverty Definition: 12-Month All Cash Income against Census Poverty Thresholds

	% Eligible	*% of Eligible who are Poor*	*% Poor*	*% of Poor who are Eligible*
Full Sample	14.89	61.17	10.14	89.87
Male	11.67	57.15	7.55	88.33
Female	17.84	63.58	12.50	90.72
White	10.60	56.87	6.97	86.45
Black	39.56	70.58	29.49	94.69
Hispanic	32.51	62.28	21.74	93.14
Asian/Other	20.87	67.05	14.58	95.97
Ages 16-21	20.87	58.00	13.75	88.02
Ages 22-24	20.15	60.98	14.70	83.58
Ages 25-34	15.24	62.91	10.46	91.64
Ages 35-44	11.80	61.90	7.93	92.14
Ages 45-54	11.02	61.56	7.45	91.01
Years of Education:				
0 to 8	40.37	70.74	30.38	93.99
9 to 11	30.10	66.62	21.49	93.30
12	14.61	57.67	9.47	88.95
13 to 15	8.82	54.81	5.70	84.80
16	4.01	42.16	2.52	67.22
17 or more	3.62	46.33	2.12	79.12
Never Married	20.70	59.24	13.96	87.85
Married	9.03	57.29	5.65	91.46
Widow/Div/Sep	29.62	71.05	23.08	91.17
Male Youth	17.75	56.85	11.73	87.05
Female Youth	23.90	58.83	15.72	89.45
Male Adults	10.44	57.25	6.71	89.13
Female Adults	16.70	64.86	11.90	91.04

Table 15. The Poverty Composition of the Eligible Population using Alternative Poverty and Eligibility Definitions (All entries are percentages of person-month sample) (Line numbers refer to level of measurement)

	Eligibility Definition	
	F	*G*
Percent of Eligibles who are:		
1. Not Poor by 12-Month Total Income	38.83	36.39
2. Poor by 12-Month JTPA-Counted Income	9.31	9.73
3. Poor by 6-Month JTPA-Counted Income	8.30	8.68
4. Poor by 1-Month JTPA-Counted Income	6.54	6.77
4. Not Poor by 1-Month JTPA-Counted Income	1.75	1.91
3. Not Poor by 6-Month JTPA-Counted Income	1.01	1.04
4. Poor by 1-Month JTPA-Counted Income	0.40	0.45
4. Not Poor by 1-Month JTPA-Counted Income	0.61	0.60
2. Not Poor by 12-Month JTPA-Counted Income	29.52	26.76
3. Poor by 6-Month JTPA-Counted Income	7.03	7.61
4. Poor by 1-Month JTPA-Counted Income	3.92	4.19
4. Not Poor by 1-Month JTPA-Counted Income	3.11	3.42
3. Not Poor by 6-Month JTPA-Counted Income	22.49	19.15
4. Poor by 1-Month JTPA-Counted Income	3.20	3.04
4. Not Poor by 1-Month JTPA-Counted Income	19.29	16.11
1. Poor by 12-Month Total Income	61.17	63.51
3. Poor by 6-Month JTPA-Counted Income	58.95	61.95
4. Poor by 1-Month JTPA-Counted Income	51.25	52.96
4. Not Poor by 1-Month JTPA-Counted Income	7.70	8.99
3. Not Poor by 6-Month JTPA-Counted Income	2.22	1.56
4. Poor by 1-Month JTPA-Counted Income	0.77	0.65
4. Not Poor by 1-Month JTPA-Counted Income	1.45	0.92

Note: Based on data for reference months 13 and following for initial Panel members between the ages of 16 and 54 who are in the sample and interviewed for the month of eligibility determination and each of the previous 12 months. Census poverty thresholds, which reflect family size and age composition are used to determine poverty in all cases. For the case of 6-month JTPA income, one-half of the threshold value is used. For the case of 1-month JTPA income, one-twelfth of the threshold value is used. The current extended family, is used for poverty measurement for both comparisons, but used only for eligibility determination under definition G. Definition F uses the nuclear family definition. Note that all persons poor by 12-month total income are necessarily poor by 12-month JTPA-counted income.

Table 16. Work Experience and Eligibility (Definition F)

Work Experience in 6 Months Preceding Eligibility Determination	*Percent of Group*	*Percent of Group Eligibles*	*Eligibility Rate*
Full Sample			
Worked Entire 6 Months	59.19	21.57	5.58
Worked Part of 6 Months	21.61	30.11	21.32
No Work - Looking or Layoff	4.14	15.91	58.79
Out of Labor Force 6 Months	15.09	32.41	32.84
Male Youth			
Worked Entire 6 Months	28.34	12.66	8.13
Worked Part of 6 Months	39.92	33.64	15.33
No Work - Looking or Layoff	9.40	21.03	40.67
Out of Labor Force 6 Months	22.34	32.68	26.61
Female Youth			
Worked Entire 6 Months	27.51	12.78	11.37
Worked Part of 6 Months	37.65	32.52	21.14
No Work - Looking or Layoff	7.75	16.45	51.93
Out of Labor Force 6 Months	27.09	38.25	34.56
Male Adults			
Worked Entire 6 Months	77.68	29.31	4.10
Worked Part of 6 Months	15.64	35.41	24.59
No Work - Looking or Layoff	2.63	17.18	70.88
Out of Labor Force 6 Months	4.04	18.11	48.63
Female Adults			
Worked Entire 6 Months	54.06	21.26	6.70
Worked Part of 6 Months	20.58	25.67	21.27
No Work - Looking or Layoff	3.84	14.01	62.13
Out of Labor Force 6 Months	21.52	39.05	30.92

Table 17. Low Income Eligibility Rates with Predicted Earnings Gains from Participation

	Percent with Low Family Income under Definition G:		
	Before Participation	*After Universal Participation*	*After Individual Participation*
Full Sample	14.09	12.99	13.27
Male	11.37	10.50	10.87
Female	16.65	15.34	15.52
White	10.12	9.37	9.56
Black	32.93	30.98	31.51
Hispanic	31.05	28.12	28.45
Asian/Other	20.98	17.95	19.35
Ages 16-21	17.92	16.88	17.92
Ages 22-24	18.02	16.71	17.22
Ages 25-34	15.17	13.66	13.94
Ages 35-44	11.11	10.36	10.26
Ages 45-54	10.76	9.94	9.86
Years of Ed:			
0 to 8	35.15	33.25	32.49
9 to 11	28.13	26.43	27.12
12	13.27	12.05	12.39
13 to 15	8.53	7.81	8.06
16	4.49	3.72	3.85
17 or more	3.62	3.39	3.39
Never Married	18.04	16.99	17.50
Married	9.30	8.28	8.51
Wid/Div/Sep	28.10	26.50	26.32
Male Youth	14.31	13.36	14.31
Female Youth	10.76	9.90	10.15
Male Adults	21.40	20.26	21.40
Female Adults	15.68	14.34	14.32

Table 18.A. Definition G Low Income Eligibility Before and After Universal Participation: Full Sample
Main Entry is Percent of Month 7 Sample
N=15,137

	After Participation Not Eligible [% of row]	*After Participation Eligible [% of row]*	*Row Sum*
Before Participation Not Eligible (% of column)	85.91 [100.00] (98.74)	0.00 [0.00] (0.00)	85.91
Before Participation Eligible (% of column)	1.10 [7.78] (1.26)	12.99 [92.22] (100.00)	14.09
Column Sum	87.01	12.99	100.00

Table 18.B Definition G Low Income Eligibility Before and After Individual Participation: Full Sample
Main Entry is Percent of Month 7 Sample
N=15,137

	After Participation Not Eligible [% of row]	*After Participation Eligible [% of row]*	*Row Sum*
Before Participation Not Eligible (% of column)	85.91 [100.00] (99.05)	0.00 [0.00] (0.00)	85.91
Before Participation Eligible (% of column)	0.83 [5.86] (0.95)	13.27 [94.14] (100.00)	14.09
Column Sum	86.73	13.27	100.00

Table 19. Eligibility by Low Income Criterion using CPS-Type versus SIPP Data: Months 13+ Sample

	Percent Eligible by Low Income Criteria					
	CPS-Type Data				*SIPP Data*	
	Assuming All of 12-Month Income is Received in 6-month Interval		*Assuming One-half of 12-Month Income is Received in 6-month Interval*		*Reported Income Received in 6-Month Interval*	
	Extended Family Definition G	*Nuclear Family Definition H*	*Extended Family Definition G*	*Nuclear Family Definition H*	*Extended Family Definition G*	*Nuclear Family Definition H*
Full Sample	6.41	7.17	12.45	13.21	12.41	13.12
Males	4.33	4.82	9.50	10.02	9.55	10.06
Females	8.31	9.31	15.15	16.13	15.02	15.92
White	4.06	4.60	8.65	9.30	8.71	9.29
Black	21.00	23.45	33.33	35.19	33.32	34.78
Hispanic	14.11	16.07	29.50	30.44	28.26	29.54
Asian/Other	12.67	11.60	19.19	19.43	19.05	19.75
Ages 16-21	9.02	11.28	17.30	19.42	16.85	18.90
Ages 22-24	8.70	10.33	17.27	19.17	16.81	18.44
Ages 25-34	6.67	7.34	12.75	13.53	12.63	13.39
Ages 35-44	5.05	5.21	10.05	10.28	10.19	10.43
Ages 45-54	4.60	4.63	8.96	8.70	9.31	9.01
Years of Ed:						
0 to 8	20.83	22.65	36.06	37.73	35.86	37.03
9 to 11	14.82	16.67	26.00	27.49	25.45	26.92
12	5.41	6.07	11.89	12.67	11.85	12.58
13 to 15	3.31	3.78	6.93	7.41	7.06	7.59
16	1.48	1.59	3.44	3.68	3.47	3.67
17 or more	1.62	1.78	2.87	3.05	3.22	3.35
Never Married	9.54	11.61	16.95	18.84	16.69	18.50
Married	2.86	2.92	7.41	7.53	7.53	7.63
Wid/Div/Sep	16.64	17.52	26.92	27.90	26.59	27.50
Male Youth	7.49	9.26	14.85	16.30	14.41	15.75
Female Youth	10.49	13.23	19.67	22.45	19.21	21.97
Male Adults	3.69	3.92	8.42	8.75	8.57	8.91
Female Adults	7.90	8.57	14.30	14.94	14.23	14.78

Note: CPS-type estimates are based on 198,743 person-months for original Panel members in Reference Period Months t=13 to t=28, with 12 month income measured with no lag (i.e., 12-month incomes in months t-12 to t-1 for family members in month t, $13 \leq t \leq 28$, are used to determine eligibility). SIPP estimates are based on incomes in months t-6 to t-1 for family members in month t, $13 \leq t \leq 28$. Note also that both age (16 to 54) and 12-months-in-sample restrictions are imposed for the sample used here.

Table 20. Comparison of Low Income Eligibility using CPS-Type versus SIPP Data for Current Extended Family

	CPS-Type % Not Eligible using 1/2 12-Month Income [% of row]	*CPS-Type % Eligible using 1/2 12-Month Income [% of row]*	*Row Sum*
SIPP % Not Eligible using 6-Month Income (% of column)	86.30 [98.52] (98.57)	1.30 [1.48] (10.40)	87.59
SIPP % Eligible using 6-Month Income (% of column)	1.25 [10.07] (1.43)	11.16 [89.93] (89.60)	12.41
Column Sum	87.55	12.45	100.00

Note: Sample for reference period months 13+, with CPS-Type income of current nuclear family measured with no lag (unlike the March CPS).

Percent classified differently: 2.54

Note: In addition to the 12.45 percent eligible by the low family income using the CPS-Type income of the current extended family, 2.79 percent of the sample does not satisfy the low income cirterion, but does satisfy either (i) the cash public assistance criterion, when defined as one or months of receipt by the individual or a member of the individual's current family (when observed) during the 12-month period, or (ii) the food stamps criterion, when defined as one or months of receipt by the individual during the 12-month period. Thus, a total eligibility rate for definition G using the CPS-type data is 15.24 percent, as compared to 15.08 under definition G using the current-month observations on food stamp and cash public assistance receipt for the full SIPP sample (i.e., reference period months 7+).