

**THE TWICE-POVERTY TRAP:
TAX RATES FACED BY AFDC RECIPIENTS**

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April 1995

The authors are indebted greatly to Otmane Benali, who performed most of the programming for this study; to Gordon Mermin, who both reviewed our work and displayed the results graphically; to Margaret Moore, who expanded TRIM2 capabilities for this effort and led in the initial programming; to Sheila Zedlewski, who has reviewed our work; and to Bill Prosser for his support, guidance, and constant encouragement. Funding for this effort was provided primarily by the Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation.

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ABSTRACT

Recent and current welfare reform efforts have all been designed without benefit of a comprehensive analysis of work disincentives across all major tax and welfare programs. We impute jobs to AFDC recipients at earnings rates up to three times minimum wage. Excluding work expenses, the incremental rates of tax are in excess of 75 percent except when increasing work from nothing to 1/4 time at minimum wage or when, in a full-time job, earnings increase beyond 2 1/2 times minimum wage. The poverty trap -- little or no reward for work -- now extends to twice the poverty level. Very modest amounts of work at very low pay in the informal sector remain a superior economic opportunity and tax shelter for most welfare recipients.

I. INTRODUCTION

Income taxpayers are familiar with the tax rates that they see printed on tax forms, and most workers are aware that they pay Social Security tax. Less obvious are those tax systems that are essentially hidden in a variety of social expenditure programs. These "expenditure taxes" essentially operate as recapture taxes -- removing benefits as income rises. Politically these taxes are often favored because they make both the expenditure and tax systems look smaller. That is, in budget accounting, the taxes do not add to aggregate taxes, but instead are treated as negative expenditures (Steuerle, 1992b).

Such taxes, however, have many of the same perverse features as direct tax rates -- penalizing work and marriage and encouraging a subterranean economy where income is not reported to the government. When "tax" rates are extremely high, they can breed disrespect for government and break down a system of compliance with the laws. Welfare recipients come to view the welfare system as one to be gamed. Indeed, there is substantial evidence that many or most welfare recipients have modest amounts of income not reported to welfare offices (Jencks and Edin, 1990).¹ Social workers in welfare offices become tax collectors -- enforcers of rules implementing income reporting and consequent reductions in benefits -- rather than service workers who aid clients to move beyond welfare. Low-income workers with few or no benefits may believe they are being treated unfairly and sometimes come to view with prejudice or disdain those on welfare who do not work, yet attain nearly comparable standards of living.

Of great concern also are the work and marriage penalties in welfare. The welfare reform literature speaks of a "poverty trap" in which work offers little or no reward. As we shall see below, the more appropriate term today might be the "twice-poverty trap," as work at even two times poverty-level income, or, more precisely, two to three times minimum wage, often yields little reward.²

Although our concern in this paper is with trying to measure comprehensively the extent of these tax rates, the consequence of high tax rates has significant implications for recent attempts to redesign welfare. In much of the 1980s and the early 1990s, many reform efforts attempted to tinker with disregards (earnings that would be disregarded in benefit calculations) and add earned income tax credits to "make work pay." Both Democrats and Republicans began to stress that if one played by the rules, one should be able to get ahead. By the mid-1990s, however, even greater emphasis was placed on work requirements for welfare recipients and on enforcement mechanisms such as "two years and out."

One political difficulty with the earlier reforms was that they could require significant additional funding, for instance, by making benefits (e.g., child credits, health insurance for children) more universally available. In the end, the cheapest way to try to appear to meet the work incentive objective was to increase benefits slightly for those working, but then quickly assess very high tax rates on those reaching only slightly higher income levels. Almost never, however, did policymakers address the consequences or design specific program changes around the incentives of the combined welfare and tax system at different income levels. A second approach -- requiring work or denying benefits to those who do not work -- tries to get around the high tax rate dilemma either by mandating work or by reducing or eliminating benefits that can be phased out. Work enforcement has been favored by scholars such as Mead (1992), while others, such as Bane and Ellwood (1994) imply that pressure to go to work might be combined with other incentives. This study will suggest that the first approach essentially failed to achieve its objective -- that is, high tax rates remained

and work never did really pay very much. The consequences of the second approach -- in reality, approaches that range widely in design -- remain to be seen.

In any case, it is hard to design reform unless one knows where current law starts. Despite the extraordinary importance of tax rates in designing incentives in social expenditure and tax programs, a comprehensive analysis of these tax rates across all major tax and welfare programs has seldom, if ever, been offered. More commonly, hypothetical cases are presented. A primary example is in the so-called "Green Book," an annual publication that provides an overview of entitlement programs (U.S. Congress, Committee on Ways and Means, 1994, p. 335). The example there, typical for this type of presentation, is for a mother with two children in Pennsylvania with child care expenses who receives AFDC and food stamps. The hypothetical household is meant to have an average number of children, live in an average benefit state, and receive a typical package of benefits. Unfortunately, most individuals -- indeed, most AFDC recipients -- are not "average" or "typical." They have different size families, sometimes they are in complex households with more than one adult present, their benefits vary widely by state, they receive different size benefit packages, and many are eligible for AFDC during only part of the year.

A few studies have revealed tax rates on a few programs at a time. For example, direct tax rates are shown in Steuerle and Wilson (1987) and Chernick and Reschovsky (1990); AFDC or AFDC and Food Stamp Program rates in Hutchens (1978) and Fraker, Moffitt, and Wolf (1985). The analyses, however, are not comprehensive across programs. Wilson and Cline (1994) provide one of the more thorough and comprehensive analyses of multiple program effects, even including a state subsidy program for health. They also have developed a Minnesota data base that matches administrative tax return and income transfer records and are able to identify multiple program participation. In their work to date, however, they have measured tax rates by reference to hypothetical examples and are unable to provide population estimates for the U.S.

Expenditure proposals made by both officials and researchers almost consistently contain no examination of their effect on combined tax rate structures. One recent example was provided in the national health reform debate of 1994, where a wide variety of proposed health subsidies were designed with little or no attention to the tax rates faced by individuals. A few commentaries on these tax rates were made, largely using anecdotal examples, rather than population-wide estimates (Steuerle, 1992a; Congressional Budget Office, 1994). Tax rates in earned income tax credit programs have often been examined only after enactment (Yin, et. al, 1994; Holtzblatt, et al., 1994). Another recent proposal has been to provide means-tested "choice" vouchers for education (e.g., Ravitch, 1994), yet, as far as we can tell, no study containing this suggestion provides any examination whatsoever of the tax system imbedded within the proposal and how it interacts with other tax and benefit-reduction programs.

A related body of research tries to examine the effect of tax rates on behavior, with emphasis on labor supply. Typically this literature has relied upon certain features, such as cross-state variation in tax rates and AFDC benefits to estimate whether reported labor supply responds to these differences (Garfinkel and Orr, 1974; Levy, 1979). In a few cases, experiments like a negative income tax have offered the opportunity to examine the impact of a temporary experiment on behavior (Moffitt, 1985). This type of research, however, has been constrained either by a lack of richness in variation or by the temporary nature of the experiment (for reviews of this literature, see Danziger, Haveman, and Plotnick, 1981, and Moffitt, 1992). Summary data for differences in AFDC benefits by states, for instance, cannot substitute well for variation among all individuals and taking

into account all programs combined, while the long-term impact of a program cannot be determined easily by reactions to programs that are temporary.

About two years ago, therefore, we began work on developing the capability to provide comprehensive, population-wide, estimates of the true tax rates faced by individuals participating in most social welfare, as well as tax programs. We sought to develop this capability with respect both to current law and proposed changes in the law. Here we present results, which focus on AFDC households. We believe this is the most comprehensive and up-to-date analysis of tax rates for this population that has ever been produced. Fortunately, a parallel effort by Dickert, Houser, and Scholz, 1994 (see discussion below) offers further opportunity to extend this type of research more into the mainstream of the literature.

II. METHODS

This analysis uses the technique of microsimulation to calculate the effects of increased earnings on a sample of approximately 2,600 AFDC households. The effects are analyzed for all the households, and for subsets defined by demographic and economic characteristics. Microsimulation allows us to model precisely the rules of each tax and transfer program and the interactions among those programs.

The Micro-Simulation Model

The basic data are derived from the March 1992 Current Population Survey (CPS), with demographic information as of March 1992 and income information for calendar year 1991. The CPS, when weighted, is representative of the entire civilian, non-institutionalized population of the United States.

The Urban Institute's TRIM2 microsimulation model (Transfer Income Model, version 2) modifies the initial input data. (For more details on TRIM2, see Giannarelli, 1992.) In particular, TRIM2 corrects for the under-reporting of AFDC and other welfare benefits. In the TRIM2-adjusted data, the average monthly number of AFDC recipients, in weighted terms, equals the actual number of AFDC recipients reported in administrative data. TRIM2's AFDC caseload is also very similar to the actual AFDC caseload in its demographic characteristics -- like age of the family head, number of children, and presence of earnings. (For a comparison of TRIM2 simulations with actual program data, see Appendix Table A1.)

TRIM2, as expanded for this study, simulates the rules of all the major tax and transfer programs, and imputes levels of work expenses. Table 1 lists the major simulation components used in this research. The programs analyzed include: AFDC, Supplemental Security Income (SSI), the Food Stamp Program, public and subsidized housing, Medicaid, Social Security tax,³ federal income tax, and state income tax. The income tax simulations include tax credits, most notably the earned income tax credit (EITC) and the child care tax credit at the federal level and in some states. The transfer programs are modeled on a monthly basis to capture the real-world variations in eligibility and benefits across the months of a year; income tax liabilities are modeled on an annual basis. We also provided an imputation for transportation expenses and child care expenses, based on levels of earnings and observed characteristics. Some may view our imputations of such expenses as modest, as they are based on the experience of most low-income workers who do not, for instance,

employ much formal child-care. Our estimates, therefore, do not count the additional costs to informal care providers such as relatives; in that sense, the net gain from work that we report might be viewed as a maximum or optimistic estimate.

Here we must note the important, parallel, effort by Dickert, Houser, and Scholz (1994). Scholz and colleagues adapted the TRIM2 modeling of program variables to the 1990 Survey of Income and Program Participation (SIPP). Over time this simultaneous research should give each of us an important cross-check and means of comparing data files and results. Although SIPP has a smaller sample size, it has better monthly data for some purposes and had been developed into a more user-friendly file for many researchers -- enhancing the possibility of inducing yet other parallel efforts. Our modeling in this study concentrates on AFDC households and goes beyond the Dickert, Houser, and Scholz study in several ways: adding important in-kind programs such as subsidized housing and Medicaid, taking into account detailed interactions between child care expenses and tax and transfer programs, distinguishing in depth between short- and long-run tax rates, and, because of the inadequacy of strict marginal tax rate comparisons, developing an "incremental" tax rate analysis for households as they move up the income scale. Among other consequences, these additions will reveal a harsher view of the tax rates faced by low-income individuals.

Simulations and Interactions

To "simulate" a program for each household, we essentially take the same steps that a welfare caseworker would perform to determine benefits or that an H&R Block employee would follow to determine a client's tax liability. The simulations are extremely detailed, capturing the actual rules and formulae of each tax and transfer program. In the transfer program simulations, eligibility and benefits vary by unit size and state of residence, among other variables. The simulation of state income taxes incorporates the rules of each individual state, including the low-income tax credits allowed by many states.

Some of the most complex program rules are those concerning deductions from income. Deductions from income affect benefits from AFDC, SSI, and food stamps, as well as the amount of tenant payments in public and subsidized housing. For example, in AFDC, one deduction from earnings is referred to as the "\$30 and 1/3" deduction. For the first four months that a recipient has earnings, the first \$30 of earnings is deducted and one-third of the remainder is deducted. Meanwhile, there is also a standard, monthly, \$90 work expense deduction that is allowed in any month. These deductions allow the recipient to "keep" more earnings, rather than offset AFDC dollar-for-dollar. They also affect tax rates very differently for the first dollars of earnings by an AFDC household and other dollars of earnings. But the 1/3 deduction is allowed for only 4 months, and the \$30 deduction for only 12 months. TRIM2's AFDC simulation operates on a monthly basis that allows accurate modeling of these deductions.⁴

Another complexity is the fact that not all those eligible for a transfer program actually receive benefits from that program. TRIM2's simulations of SSI, AFDC, the Food Stamp Program, and Medicaid include "participation functions" to determine which eligible persons will participate.

A unique strength of microsimulation for this application is its ability to capture not only the rules of a each program, but the interactions among programs. Food Stamp benefits depend partly on AFDC benefits. The amount of rent that a public housing tenant must pay also depends partly on the level of AFDC benefits. The presence of child care expenses affects benefits from AFDC and

the Food Stamp Program, helps to determine the rent payment required of public and other subsidized housing tenants, and can change income tax liability via child care credits and deductions. All these interactions are programmed into the model.

Our analysis of each household begins with a "baseline" TRIM2 simulation of each tax and transfer program. The baseline simulations use the actual earnings reported by the AFDC households. In the baseline simulations of the transfer programs, the participation functions are aligned such that the size and characteristics of each program's simulated caseload are sufficiently similar to the actual caseload.⁵

The program rules used in the simulations are those in effect in 1991, with one exception. Due to already enacted increases in the EITC, we simulated both the 1994 EITC rules and the rules that will be in effect in 1996. Most results reported below are for a fully phased-in 1996 credit.

Both short-run and long-run simulations are performed for this baseline group and for the experiments described below. There are differences in the rules used for two sets of simulations. In the short-run simulations, for example, AFDC recipients who also have earnings may be able to use the "\$30 and 1/3" deduction (if they have not previously exhausted their eligibility for the deduction). In the long run, however, we assume that earnings have been present for more than a year, and the potential AFDC recipient is ineligible for the \$30 and 1/3 deduction. Similarly, in the short-run, former AFDC recipients keep their Medicaid coverage; but in the long run, many will lose this benefit. (Even in the long run, many children who previously received AFDC keep their Medicaid coverage due to special rules for low-income children, and some adults continue to qualify as "medically needy.")

The Experiments

For this study we ran a series of experiments that "assigned" a job to the principal earner of each AFDC family, when that person was within the ages of 19 and 64 and not disabled. This exclusion of disabled persons largely removes the SSI population from the study, although some SSI recipients are present as other members in the households of non-disabled AFDC recipients. The experiments impute earnings to the AFDC family head as follows:

- o 10 hour/week job at the minimum wage (\$4.25 per hour);
- o 20 hour/week job at the minimum wage;
- o 30 hour/week job at the minimum wage;
- o full-time job (40 hours/week) at the minimum wage;
- o full-time job at 150 percent of the minimum wage;
- o full-time job at 200 percent of the minimum wage;
- o full-time job at 250 percent of the minimum wage;
- o full-time job at 300 percent of the minimum wage.

Earnings were added on a month-by-month basis. If an individual already had earnings in a particular month, then additional earnings were added only if necessary to bring the person up to the experimental amount. For those above the experimental amount, of course, there was neither a change in earnings nor a change in net income for the month involved.

Over 2,600 households were assigned new wages in these experiments, providing a large sample for disaggregated analysis. These households represent a population of over 4.2 million households and 17.0 million persons.

For each experiment, we reran the TRIM2 simulations of the tax and transfer programs under the new job assumptions, simulated changes in work expenses, and determined changes in each household's economic circumstances step by step, program by program, as a result of the increased earnings. We reran both the short-run and long-run simulations. For some experiments, we modeled both the 1994 and 1996 EITC rules.

We assumed that the experimental jobs would not provide health insurance as a fringe benefit. Fewer than 25 percent of minimum wage workers have health insurance through their employer, and some of those workers must pay a portion of the premium (Loprest, Winterbottom and Zedlewski, 1994). To the extent that some of the experimental jobs would provide health insurance, our analysis overstates the tax rate as the value of the health insurance should also be added to income received.

The Tax Rates

The following definitions of taxes were applied:

Cumulative tax rate = $1 - \frac{\text{[total change in net income]}}{\text{[total change in earnings]}}$
Incremental tax rate = $1 - \frac{\text{[(incremental change in net income)]}}{\text{(change in earnings in moving from one earnings level to another - e.g., from 1/4 time at minimum wage to 1/2 time at minimum wage)}}$

For our purposes we have followed traditional tax theory and included the employer portions of Social Security taxes as both compensation to the employee and taxes paid by the employee to the government.

Most tax studies emphasize the "marginal tax rate" when examining the effects of incentives. The notion is that "inframarginal rates" are less likely to affect future behavior, and the marginal rate is used as an indication of how much additional income will be achieved with additional work. In truth, the marginal rate serves something like a proxy or instrumental variable for a whole schedule of rates that might affect behavior. Individuals in reality move up and down rate schedules according to the choices they make. In other words, the tax rate and earnings are simultaneously determined.

In the case of welfare recipients, the marginal rate is a particularly weak measure of incentives. Given modest disregards for the first dollars of earnings in welfare programs, for instance, the tax rate is quite small for earning \$1 rather than \$0. Most AFDC recipients report \$0 of earnings, and so face a very low marginal rate for their next (often first) dollar of earnings. This rate, however, tells us little about the incentives they face if they work normal part-time or full-time jobs, where they might move beyond the disregards in welfare programs. Here the marginal rate is a worse proxy than some other rate on the schedule that they face.

The marginal rate can also be astronomically high, as when an individual earns one more dollar and then loses eligibility for Medicaid. This spike in the tax rate schedule is often hidden when looking only at marginal rates. For example, a household moving from \$7,000 to \$7,001 of earnings

might appear to have a marginal rate of, say, 60 percent for that dollar of earnings, when its previous movement from \$6,999 to \$7,000 involved a loss of \$3,000 worth of Medicaid and a marginal rate of 300,000 percent. Therefore, we believe it more relevant to demonstrate the schedule of rates faced by individuals by averaging increases in taxes over discrete increases in earnings. For our purposes here, therefore, we use the incremental tax rate derived above (which, in technical terms, is an "average marginal" rate over earnings ranges involved).

The remainder of this paper describes our analysis of these data.

III. SOME SAMPLE HOUSEHOLDS

This section demonstrates how the calculations in this study affect specific AFDC households; the next section will provide general results for the entire population. Preliminary examination of sample households is instructive for two reasons. First, the calculations illustrate the methodology behind the tax rates presented in our aggregate analysis. Second, they demonstrate in simplified fashion how the tax rates can change with variations in family circumstances and in the experimental level of earnings.

Example 1: A One-Parent Family in a Typical State

Table 2 presents a household from the TRIM2-CPS data with one parent, two children, and no cash income other than AFDC; the family contains no additional individuals, and it lives in Pennsylvania, a state whose AFDC benefits are approximately at the national median. This table shows what happens when the mother begins to work full-time at the minimum wage. The rows of the table define all the items contributing to a family's net economic well-being -- earnings, taxes, cash and in-kind transfer payments, and imputed work expenses. The additional tax rate due to work expenses, of course, is only suggestive; the others, however, fall directly out of the government programs themselves.

When the parent is not working, the family receives \$4,836 in AFDC during the year, \$2,701 in food stamps, and Medicaid benefits valued at \$3,000, for a total of \$10,537 in cash and in-kind benefits. If the parent begins to work full-time at the minimum wage, the family gains \$9,516 in earnings (annual minimum wage plus the employer's contribution to Social Security on behalf of the employee). Under the expanded EITC rules, the family is due \$3,094 in EITC benefits -- a "negative tax" of 32.5 percent. But the family also faces positive taxes. Social Security taxes claim 14.2 percent of the new earnings,⁶ and the family owes a small amount (\$23) of state income taxes. Most importantly, even with certain income disregarded before AFDC begins to phase out, the family still loses all of its AFDC benefits -- a loss equal to a 50.8 percent cumulative tax on the new earnings. The family also loses \$959 in food stamps. Even before consideration of work expenses, the combined tax rate on the new earnings is 43 percent, despite the significant benefits provided by the EITC.

In the long-run, the family's situation worsens in one major respect -- the mother loses her Medicaid coverage. Pennsylvania has a medically-needy program, but the family's income is too high to qualify without very high medical expenses. The children, however, qualify for Medicaid because the family's net income is less than 133 percent of the federal poverty guidelines. Assuming that the insurance value of the mother's Medicaid coverage was \$1,400, the tax rate

imposed by this loss is 14.7 percent.⁷ The cumulative long-run rate, without the addition of work expenses to the analysis, is 58 percent.

The last several rows of the table show the potential effects of work expenses on the cumulative tax rate. Transportation expenses, at approximately \$1 per trip, impose a tax of 4.5 percent. When modest child care costs of \$1,558 per year (about \$130 per month) are assumed, the tax rate initially rises by an additional 16.4 percent.⁸

The direct effects of the child care expenses, however, are mitigated by other indirect effects. Because the transfer programs all allow some form of child care deduction, the losses of AFDC and food stamps are smaller. For example, in the short run, the child care deduction enables this family to keep some AFDC benefits for the first four months of the year (the months when a "1/3 deduction" effectively disregards that portion of earnings). In both the short-run and long-run scenarios, child care expenses result in higher food stamp benefits than the family would otherwise receive. For some other families in our sample, child care expense on net resulted in a negative tax rate when it restored eligibility for Medicaid coverage for one or more members of the family.⁹

When the effects of this family's work expenses are included in the analysis, the cumulative tax rate rises to 54 percent in the short run, and 72 percent in the long run. The mother has earned \$9,516, but her family's economic well-being has increased by only \$4,397 in the short-run scenario and by \$2,709 in the long run.

Not many families fit the neat profile in Table 2. In fact, in a file of over 2600 observations, there were only two Pennsylvania AFDC households with exactly these "prototypical" characteristics. The next two tables, therefore, show the tax rates faced by different types of families: a two-parent rather than one-parent family; a beneficiary in a high-benefit state who also receives a housing subsidy.

Example 2: A Two-Parent Family in a Typical State

According to the most recent published data, 2-parent families receiving unemployed-parent (UP) benefits make up 7 percent of the AFDC caseload (DHHS, 1994).¹⁰ Table 3 examines a family that is identical to the one in Table 2 but is headed by a married couple rather than a single parent. The tax rates imposed by the EITC and Social Security are the same as those seen for the one-parent family in Table 2. But the loss of AFDC benefits by itself imposes a 62.7 percent tax on this two-parent family, compared to the 50.8 percent tax borne by the one-parent family. The two-parent family had higher baseline AFDC benefits and, therefore, a higher cumulative tax rate from losing all benefits. But the tax rate imposed by the Food Stamp Program, 5.2 percent, is lower than the 10.1 percent imposed by that program on the one-parent family. That is, the Food Stamp Program's tax on net income is lower when the AFDC tax reduces net income by a greater amount.

The long-term for this family differs from the short-term mainly because of changes in Medicaid coverage. **Both** adults (but not the children) in the two-parent family lose their Medicaid coverage, which creates a 29 percent tax on the new earnings. The cumulative long-run tax rate without work expenses is 79 percent for the two-parent family, compared to 58 percent for the family in Table 2. The addition of work expenses is less likely to add to the tax rate if the two-parent family, as in this case, incurs no child care expenses when only one of them is presumed to work. Thus, the cumulative tax rates in this example increase only slightly due to transportation expenses -- to 54 percent in the short run and 84 percent in the long run.

Example 3: A Single-Parent Family with Housing Benefits in a High-Benefit State

Table 4 examines another one-parent family that differs from the family in Table 2 in two ways: it lives in California, a state with high AFDC benefits, and it lives in public or subsidized housing. These differences do not alter the tax rates imposed by the EITC and by Social Security. But there are many differences in the figures for the transfer programs. In both the short- and long-run scenarios, the family is able to keep some AFDC benefit; this prevents any loss of Medicaid coverage, even in the long run. But even though the family loses less than 100 percent of its AFDC, the dollar amount of the AFDC loss is greater than the dollar amount lost by the Pennsylvania family. Thus, the tax rates imposed by the loss of AFDC by itself are very high -- 68.2 percent in the short run and 78.8 percent in the long run.

Because the dollar amounts of lost AFDC are so large relative to the level of new earnings, additional losses of food stamps and housing are relatively modest. For example, the family's contribution to an apartment's rent generally is 30 percent of net cash income, as defined by the housing programs. But because the gain in cash income from earnings is largely offset by the loss of AFDC, the increase in the tax rate due to housing is only 7.4 percent in the short run and 4.2 percent in the long run.

Work expenses narrow the gaps between the Pennsylvania and California examples. When the working parent pays for child care, the family benefits from child care deductions in three programs -- AFDC, the Food Stamp Program, and the subsidized housing program. The higher transfer benefits due to these deductions almost offset the entire costs of paying for the child care, in both the short-run and long-run scenarios. Including work expenses, the cumulative tax rates for this family are 64 percent in the short run and 69 percent in the long run.

Tax Rates for One Household at Different Income Levels

So far, this discussion has focused on just the first of our experiments -- assigning a full-time job at the minimum wage. Tables 5A and 5B each follow one family in our TRIM2-CPS data over all eight experiments -- from a 10-hour-per-week job at \$4.25 per hour to a full-time job at \$12.75 per hour. Table 5A uses the short-run assumptions, and Table 5B uses the long-run assumptions. Both tables show two types of tax rates: the tax rate relative to the prior level of earnings, labeled the "incremental tax rate," and the cumulative tax rate relative to the baseline simulation.

In both the short- and long-run, Social Security tax increases at a steady rate with the level of earnings. The EITC increases with earnings over the first four experiments, and then declines due to the phase-out. Starting with wages at 150 percent of minimum wage, the family's income generates federal income tax liability, but at this point it is still more than offset by the EITC credit. At 250 percent of the minimum wage, the positive tax is greater than the credit. The family owes Pennsylvania state income tax in all experiments with a full-time job.

As earnings increase, benefits from each transfer program decline and then fall to zero. AFDC benefits are the first to be lost entirely, followed by food stamps and lastly by housing subsidies. Medicaid is retained by all family members in all the short-run experiments, but is lost at higher earnings levels under the long-run assumptions. In the final long-run experiment, with wages at three times the minimum wage, the family receives no transfer payments or EITC benefit.

Our imputation of work expenses is not refined enough to draw many conclusions about incremental tax rates. For example, here the family was imputed to rely on free or informal care when the mother works part-time, but to pay for child care when the mother worked full-time. Nonetheless, we demonstrate in these example tables (but not in later aggregate tables) how important the interactions can be between child care costs and the deductions and credits in the programs themselves. Thus, three-fourths of the costs of child care are offset by deductions and credits at a 40-hour a week job, but much smaller portions are offset at higher income levels even though a federal child care tax credit remains as income increases. In effect, federal programs will provide very different levels of incentives for finding child care outside the home, depending upon level of income.

Combining all these effects, the short-run incremental tax rates faced by this family -- moving from one level of earnings to the next -- range from 50 percent to over 100 percent. The highest rate, 101 percent, occurs as the family moves from a full-time job at the minimum wage to a job at 150 percent of the minimum wage, or \$6.37 per hour. When the family moves to the next wage level, \$8.50 per hour, the tax rate on the incremental earnings remains almost as high, at 95 percent. What makes these tax rates so high is that the family is simultaneously facing positive tax rates from transfer programs (the Food Stamp Program and subsidized housing) and tax programs (the phase out of the EITC, and the imposition of federal income taxes and state income taxes). The cumulative short-run tax rates -- relative to the family's position with no job -- range from 50 percent to 79 percent. Only when the non-working mother begins to work 10 hours per week at the minimum wage does she keep almost half of additional earnings. Even with a full-time job at twice the minimum wage, only 21 percent of the new earnings translate into higher disposable income.

Tax rates are higher in the long-run primarily because transitional Medicaid coverage is exhausted¹¹, and also due to the loss of the monthly \$30 and 1/3 earnings deduction in the AFDC program. The incremental tax rate rises as high as 129 percent as earnings rise from 150 percent to 200 percent of the minimum wage, partly because of the loss of Medicaid for the children in this income range.

Table 5B points out that for this household, the most rational labor force decision may be to combine part-time work with some transfer benefits (especially Medicaid) rather than to work full-time. The row labeled "cumulative net income" shows the sum of the family's earnings, minus taxes, plus transfer income, minus work expenses. That figure is \$15,137 in the baseline simulation, when the mother does not work at all. It rises as she begins to work, to \$18,122 at 30 hours per week. But the amount then begins to fall. With a full-time job at twice the minimum wage, the family's cumulative net income is only \$16,061, more than \$2,000 lower than with the 30 hour per week job at the minimum wage. Unless the mother can obtain a full-time job at three times the minimum wage, or \$12.75, it may be more rational for her to work only 30 hours per week at the minimum wage. Even at 300 percent of the minimum wage, the cumulative tax rate remains at over 83 percent of total earnings.

IV. TAX RATES FOR THE POPULATION OF AFDC HOUSEHOLDS

The sample households presented above are interesting case studies, but their tax rates do not necessarily represent those of other AFDC households. For example, only 18 percent of our weighted sample consists of single parents and their children on AFDC, with no other persons in the

household, and no cash income during the year other than AFDC. This section, therefore, presents results averaged across all 2,600 AFDC households assigned jobs in our TRIM2-CPS data.

Full-Time Minimum Wage Jobs

Figure 1 shows the cumulative tax rate faced by AFDC households when the head of each family takes a full-time job at the minimum wage. In the short-term -- the first year of having the job -- the average tax rate on the new earnings is 63.7 percent under the EITC rules in effect in 1994, but 8 points lower, or 55.8 percent, under the rules that will apply in 1996. (We demonstrate the EITC effects here mainly to demonstrate the capability to model changes in incentives with program reform.) In the long-term -- more than one year after taking the job -- the average tax rate across these households is 84.4 percent with the 1994 EITC benefits, 76.5 percent using the 1996 EITC rules. The difference between the short-run and long-run rates is due largely to the loss of Medicaid coverage after the period of transitional Medicaid for former AFDC recipients has expired.

Figure 2 provides more details on the components of the 76.5 percent long-run tax rate shown in Figure 1. The bars give the effects of each individual component, while the line charts the cumulative tax rate as additional programs as considered. On average, the expanded EITC provides a negative tax equal to 24.3 percent of the new earnings. Payroll taxes (and to a small extent income taxes) impose a 15.1 percent tax, on average. At this point, before consideration of transfer programs or work expenses, the tax rate is still negative.

AFDC imposes a very high tax rate, on average, of exactly half of the new earnings. That rate might seem low to readers more familiar with AFDC tax rates on an incremental dollar of earnings. For many dollars of earnings, the addition of \$1 reduces AFDC benefits by \$1 -- a marginal tax rate of 100 percent. In our analysis, most households lose all of their AFDC benefits when the AFDC family head begins working full-time at the minimum wage. Since the average initial value of the AFDC benefits was only about \$4,000, the loss of AFDC as a percentage of the new earnings produces an average tax rate of 50 percent.

The Food Stamp Program imposes a much lower tax rate of 5.7 percent. The program essentially taxes increased net income at 30 percent. But increased earnings are offset by lost AFDC benefits and the Food Stamp Program disregards 20 percent of earnings.

The Medicaid program adds a 19.9 percent tax. On average, the value of lost Medicaid coverage equals about a fifth of the new earnings. As suggested by the sample households at full-time minimum wage jobs, in many cases the children retain their Medicaid coverage, and in some cases the adults may also retain coverage.

On average, the increased rental payments required of households in subsidized housing impose a 3.9 percent tax. For the 26 percent of the households who live in subsidized housing, the tax rate imposed by the program is higher. Finally, an average of 5.5 percent of the new earnings here are imputed to be lost to work expenses. This estimate is conservative, as only about 10 percent of the newly-working parents are assumed to turn to paid child care in this experiment.

Variation Across Households

The average rates shown in Figure 2 mask a significant amount of variation in the rates across households. As shown in Figure 3, about one-third of households face long-term tax rates

between 60 and 80 percent, while over half fall between 50 and 90 percent. Approximately one-eighth face rates of less than 50 percent (although usually not much less), while close to one-quarter face tax rates in excess of 100 percent.

Variations in tax rates across different households are explored further in Figures 4 and 5. Figure 4 displays the long-term cumulative tax rate imposed by full-time minimum-wage work by the AFDC family head's initial earnings, before the experiment. In some cases, these initial earnings -- before the addition of imputed earnings due to additional work -- come from months of non-eligibility for AFDC and in other cases from the presence of some earnings during months of eligibility. Households starting with less than \$1,000 in earnings (most of which have no earnings at all) have tax rates of approximately 70 percent, as compared to the average of 76.5 percent for all households (figure 1). Those starting with higher earnings levels experience higher cumulative tax rates on their total additional earnings as they move to full-time minimum wage work. The highest rate shown in the figure, approximately 100 percent, is experienced by households in which the AFDC family head earned \$5,000 to \$6,999 before the experiment. As was shown in Table 5 for a sample household, the incremental tax rates -- moving from one level of earnings to another -- can be much higher than the rates faced by households that start with no earnings.

Figure 5 displays the average tax rates for a group of households that we have labeled a simple-AFDC basic group -- that is, households with only a single parent and no other adults present in the household. The average rate is only slightly lower than in the entire population, including more complex households -- 71.7 percent versus 76.5 percent. Interestingly enough, there is only modest difference in tax rates across low, medium, and high-benefit states.¹² The composition of this tax rate, however, shows more variation. AFDC losses are higher in the high-benefit states, but Medicaid losses are smaller. Thus, states with more generous AFDC programs tend to maintain Medicaid at higher income levels and make it more likely that adults will retain eligibility under the state's medically-needy program. Note that medium-benefit states are caught in between and have the highest cumulative tax rate at minimum wage (but not at all earnings levels).

Tax rates are higher for households with fewer children than for those with more children. A single mother with one child faces an average tax rate of 81.7 percent when she takes a full-time minimum wage job, compared to 70.7 percent for those with two children and 65.2 percent for those with three or more children. The fewer the children, the smaller the level of income needed to exceed the eligibility thresholds for transfer programs. Thus, those with fewer children are more likely to lose various benefits when they take a full-time minimum wage job. These results would reverse themselves at higher levels of income when all benefits are lost.

Population Tax Rates at Different Income Levels

This section so far has discussed the effects of just one experiment -- providing a full-time job paying the minimum wage. Figures 6 and 7 examine the results for all households of the full range of experiments -- from a minimum wage job for 10 hours per week to a full-time job paying three times the minimum wage. Figure 6 shows the cumulative tax rates -- the effect of the experiment relative to the baseline simulation. Figure 7 presents the incremental rates -- the effects of each level of earnings relative to the prior experimental level.

On average, the cumulative tax rates are highest, at 77 percent, in the experiment at 150 percent of the minimum wage. But all the rates are high. The lowest is just below 60 percent, in the

experiment with the 10 hour per-week job. Even at 300 percent of minimum wage, households keep less than 30 percent of total earnings.

Our estimates of the cumulative tax rate due to a half-time job can be compared to those produced by Dickert, Houser and Scholz (1994). Considering just the effects of the cash transfers, food stamps, income taxes and payroll taxes, our estimated tax rate due to a half-time job at the minimum wage is 48 percent. The Dickert, Houser, and Scholz estimates are 53 percent for AFDC recipients, and 55 percent for those with both AFDC and food stamps. We would expect some differences, because Dickert, Houser, and Scholz assigned a job to each person in the household aged 15 or older, while our experiments assign jobs only to the family head.

The incremental rates shown in Figure 7 exclude incremental impacts of work expenses; as indicated, the imputation procedure is not elaborate enough to invite interpretation when moving from one level of hours or wages to another. Even without work expenses, incremental tax rates are about 3/4 of incremental income or higher as income ranges all the way from 1/4 time at minimum wage to 200 percent of the minimum wage. Only when income rises from 0 to 1/4 time at minimum wage, or from 250 percent of minimum wage to 300 percent of minimum wage, are incremental tax rates below 50 percent -- and then just barely. The highest incremental rates -- 85 percent -- are faced when moving from working 30 hours per week to 40 hours per week at the minimum wage.

The composition of the incremental tax rate, of course, changes over these income ranges. AFDC losses are dominant at lower income levels, but initially offset in part by the EITC. Losses of Food Stamps and housing become more significant as AFDC becomes less important. In general, losses of in-kind benefits are especially important between working 1/2 time at minimum wage and working full-time at minimum wage. Federal and state taxes and the phase out of the EITC become more important as income increases. The Medicaid losses come in two spurts -- once when adults become ineligible, and then, at higher income levels, when the children are removed from the rolls.

Figure 8 demonstrates these last calculations more precisely for individuals making the transition from 150 percent to 200 percent of minimum wage. The direct tax systems -- income, social security, and EITC phase-outs -- impose tax rates of almost 45 percent, while losses of Medicaid and housing combine for over 20 percentage points. AFDC and Food Stamps, however, together add less than 10 percentage points to the total.

V. CONCLUSION

This study provides what we believe to be the most comprehensive, as well as up-to-date, estimates ever presented of the tax rates faced by AFDC recipients. We have also shown how this model can be used to analyze the effective tax structures of new proposals, which are usually developed with disregard for the complicated tax system that already exists. The tax rates for AFDC recipients are very high in all income ranges up to 300 percent of minimum wages. In effect, welfare traps extend far beyond poverty levels. Attempts to provide offsetting incentives only moderately change the picture. Small disregards in welfare programs currently override other taxes only modestly, with the largest impact applying only up to about 1/4 time jobs at minimum wage. The EITC also has reduced tax rates more significantly up to about the minimum wage. In terms of incremental tax rates, however, the later phase out of these various benefits was found to increase

tax rates at the same time that direct taxes and Medicaid and housing phase-outs already reduce significantly the rewards from work.

Tax rates on incremental or additional earnings -- even without regard to work expenses -- average 3/4 of income or more across most income ranges affecting low-income persons who decide to work any more than 1/4 time. When work expenses are added, the rates would be higher still. A significant portion of the population faces tax rates of 100 percent or more for work at a full-time minimum wage job or for increasing their work effort beyond some minimal level.

The net impact of this system, in our view, is pernicious. Whatever the ability of statistical techniques to discover changes in work behavior with changes in tax rates, very high rates breed discontent and disrespect for the law, violate basic notions of equity, and go against the work ethics of society. The average tax rate on work at full-time at minimum wage or twice minimum wage is so high, moreover, that the individual merely needs to work a small fraction of that time, or at only \$1 or so an hour, in the informal sector to do better. The informal sector that Jencks and Edin (1990) observe, in effect, is merely the tax shelter market for welfare recipients. Moreover, we have not even discussed effects of these tax rates on marriage, where the combination of a nonworking parent and a working adult into a single household results in the loss of thousands of dollars of total income. Because these high tax rates extend over such a broad range of income, one must question whether some traditional welfare reforms -- those that attempt to provide modest incentives at the bottom, but phase out with high tax rates at slightly higher levels of income -- are really viable reform options for addressing incentives faced by low- and moderate-income individuals.

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ENDNOTES

1. Unfortunately, most economic studies of behavioral responses to tax rates by welfare recipients focuses on **reported** responses. Interestingly, the argument for tax reform at high income levels often focuses on unreported income and the distortions that arise as people move their assets toward tax-preferred form. A similar argument could be made about the shifting of human resources toward less productive behavior when examining tax rates in welfare programs.
2. In 1991, the poverty level for a family of three was \$10,860; an annual minimum wage was \$8,840.
3. We ignore for these purposes the impact of Social Security tax on increasing Social Security benefits down the road. The rewards, of course, are often far into the future and liable to be discounted heavily by those with low income. For many taxpayers, moreover, the design of Social Security is such that an additional month or year of work may add little or nothing to benefits, so the **marginal** tax net of benefit is close to the marginal tax. For example the Social Security benefit formula does not count all years of work. So, at the margin, many years of work yield little or no additional benefit for paying additional Social Security taxes.
4. Several states have obtained waivers to modify the earnings deductions used to calculate AFDC benefits. California and Iowa are two of these states. In California, the time limit on the \$30 and 1/3 deduction has been removed. In Iowa, the \$90 deduction has been replaced by a disregard of 20 percent of earnings, and the \$30 and 1/3 deduction has been replaced by a disregard of 50 percent of earnings; both deductions are available with no time limit. The Administration's 1994 welfare reform proposal included a provision to simplify the system of AFDC earnings deductions, repealing the \$30 and 1/3 deduction at the national level while increasing the work expense deduction to \$120 per month. But states would have been allowed to institute more generous disregards, without going through a waiver process. Our analysis could be extended to examine the implications of these types of changes for the tax rates faced by AFDC families.
5. In the experimental simulations, described below, we held participation decisions constant despite changing levels of potential benefits. If a family received AFDC in the baseline simulation, it continued to participate in the program as long as it was eligible. In the real world, a family might stop participating in a program before benefits fell to zero, if the administrative or other difficulties of participation began to outweigh the benefits.
6. The Social Security tax rate of 15.3 percent applies to each dollar of earnings, but not earnings paid out as employer Social Security tax. The net rate therefore equals $15.3/107.65$.
7. TRIM2 assigns an insurance value to each person's Medicaid coverage based on his or her demographic characteristics and state of residence. The valuations capture variations in Medicaid programs across the states, and variations in the extent to which different types of individuals can be expected to use medical services. In general, insurance values are lower for non-disabled children than for non-disabled adults.
8. Note, however, that our imputation procedure normally attributes no additional child-care costs to the single head of household, based mainly upon data on alternative types of care used

by such households when they work.

9. The income definition used to determine if a family with children is medically-needy is based on the AFDC program's definition of net income, after deductions.

10. The 7 percent figure is for 1992, only the second year in which states were mandated to operate UP programs. Thus, there might be many 2-parent families newly-eligible for AFDC but not yet participating in the program. More recent data might show a higher percentage of the average monthly caseload classified as UP.

11. Medicaid coverage is retained by both the mother and children in the first three experiments, when the family's income qualifies them under Pennsylvania's medically-needy program. In the next two experiments, the income exceeds the medically-needy limit, but the children retain coverage because the family's income is under 133 percent of poverty. When the wage level is at twice the minimum wage, the children also lose their Medicaid coverage.

12. States were divided into three groups--low, medium, or high AFDC benefits--depending on the income level at which a family loses AFDC eligibility.

TABLE 1: ITEMS SIMULATED IN TRIM2 AND USED IN THIS ANALYSIS

Program or expense ¹	Important components	This item affected by	This items affects
Federal income tax	itemized and standard deductions, personal exemptions, tax rate structure		state income tax liability
	tax credits: EITC, child care tax credit, elderly tax credit	child care costs	
Social Security tax	employer's portion		
	employee's portion		
State income tax	each state's filing statuses (combined separate, joint, etc.), deductions, exemptions, tax rates	AGI defined by federal income tax	
	tax credits (low income, child care)	child care costs	
Aid to Families with Dependent Children (AFDC)	state-by-state variation in eligibility benefits	presence of SSI; child care costs	Food Stamps benefit; rent payment in subsidized housing; eligibility for Medicaid
	monthly earnings deductions: \$90 work expense ded.; \$30 for 12 months; 1/3 of remaining earnings for 4 months; \$175 child care ded. (\$200 for child <2)		
Supplemental Security Income	income and assets tests; 1/3 federal benefit reduction if living in home of another person		AFDC eligibility; Food Stamps; rent payment in subsidized housing; Medicaid
	state supplements to the federal guarantees		
Food Stamp Program	income and assets tests	AFDC; SSI; shelter costs; child care costs	
	shelter expense ded.		
	monthly earnings deductions: \$160 child care ded., 20% of earnings		
Medicaid	eligibility based on receipt of AFDC or SSI	AFDC and SSI receipt; ages of children; AFDC-defined net income	
	medically-needy rules		
	rules for low-income children not otherwise eligible: "percent of poverty," "Ribicoff kids"		
Public and other subsidized housing	rent equals 30% net income (after deductions) or 10% gross	AFDC; SSI; child care	Food Stamps
Work expenses	transportation costs (imputed to all workers)	part-time vs. full-time work	
	child care costs (presence of expenses; amount of expenses)	demographic chars., hours of work, income	AFDC; Food Stamps; housing subsidies; income tax

¹ For more details, see Giannarelli (1992).

TABLE 2
WHAT HAPPENS WHEN AN AFDC RECIPIENT IN PENNSYLVANIA
BEGINS WORKING FULL-TIME AT THE MINIMUM WAGE

The specifics:
single mother with 2 children under age 11
no other people in the household
no cash income other than AFDC

Income and Taxes	Base Annual Amount, Income or Tax	SHORT-RUN ASSUMPTIONS			LONG-RUN ASSUMPTIONS		
		After New Wages		Cumulative Tax Rate	After New Wages		Cumulative Tax Rate
		Income or tax Amount	Change in this Amount		Tax Rate From this Tax or Ben.	Change in this Amount	
Earnings	0	8840			8840		
+ Employer's Social Security tax	0	676			676		
= Total Earnings	0	9516	9516	9516	9516	9516	9516
Taxes							
+ Federal EITC ('96 rules)	0	3094	3094	-32.5%	3094	3094	-32.5%
- Federal income tax	0	0	0	0.0%	0	0	0.0%
- Social Security tax--employee	0	676	676	7.1%	676	676	7.1%
- Social Security tax--employer	0	676	676	7.1%	676	676	7.1%
- State income tax	0	23	23	0.2%	23	23	0.2%
Cash and in-kind transfers							
+ AFDC	4836	0	-4836	50.8%	0	-4836	50.8%
+ Food Stamps	2701	1742	-959	10.1%	1742	-959	10.1%
+ Medicaid	3000	3000	0	0.0%	1600	-1400	14.7%
+ Housing subsidies ¹	0	0	0	0.0%	0	0	0.0%
Work expenses							
- Transportation costs	0	424	424	4.5%	424	424	4.5%
- Child care costs: direct effect	0	1560	1560	16.4%	1560	1560	16.4%
+ Child care costs: effect of deductions and credits ²	0	942	942	-9.9%	654	654	-6.9%
= CUMULATIVE NET INCOME	10537	14934	4397	53.8%	13246	2709	71.5%

Source: The Urban Institute, TRIM2 model

¹ The family does not live in public or other subsidized housing. The family pays \$240/month in rent (about 60% of baseline cash income).
² The child care expense deductions in AFDC and the Food Stamp Program would allow 4 months of AFDC in the short run (\$524 total) and \$2,160 in annual food stamps. In the long run, even with child care expenses the family loses all AFDC; the annual food stamp amount is \$2,396. Child care expenses also affect rents for those in subsidized housing. At higher incomes, the expenses may affect income taxes.

TABLE 3
WHAT HAPPENS WHEN THE UNEMPLOYED PARENT IN A MARRIED-COUPLE AFDC FAMILY
BEGINS WORKING FULL-TIME AT THE MINIMUM WAGE

The specifics:
married couple with 2 children under age 11
no other people in the household
no cash income other than AFDC
living in Pennsylvania

Income and Taxes	Base Annual Income or Tax Amount	SHORT-RUN ASSUMPTIONS			LONG-RUN ASSUMPTIONS		
		After New Wages		Cumulative Tax Rate	After New Wages		Cumulative Tax Rate
		Income or tax Amount	Change in this Amount		Tax Rate From this Tax or Ben.	Income or tax Amount	
Earnings	0	8840			8840		
+ Employer's Social Security tax	0	676			676		
= Total Earnings	0	9516	9516		9516	9516	
Taxes							
+ Federal EITC ('96 rules)	0	3094	3094	-32.5%	3094	3094	-32.5%
- Federal income tax	0	0	0	0.0%	0	0	0.0%
- Social Security tax--employee	0	676	676	7.1%	676	676	7.1%
- Social Security tax--employer	0	676	676	7.1%	676	676	7.1%
- State income tax	0	0	0	0.0%	0	0	0.0%
Cash and in-kind transfers							
+ AFDC	5964	0	-5964	62.7%	0	-5964	62.7%
+ Food Stamps	3308	2810	-498	5.2%	2810	-498	5.2%
+ Medicaid	4400	4400	0	0.0%	1600	-2800	29.4%
+ Housing subsidies ¹	0	0	0	0.0%	0	0	0.0%
Work expenses							
- Transportation costs	0	424	424	4.5%	424	424	4.5%
- Child care costs: direct effect ²	0	0	0	0.0%	0	0	0.0%
+ Child care costs: effect of deductions and credits	0	0	0	0.0%	0	0	0.0%
= CUMULATIVE NET INCOME	13672	18043	4371	54.1%	15243	1571	83.5%

Source: The Urban Institute, TRIM2 model

¹ The family does not live in public or other subsidized housing. The family pays \$300/month in rent (about 60% of baseline cash income).
² The family does not need to pay for child care because the parent who is not the principal earner stays home with the children.

TABLE 4
THE EFFECTS OF SUBSIDIZED HOUSING AND MORE GENEROUS AFDC BENEFITS

The specifics:
single mother with 2 children under age 11
no other people in the household
no cash income other than AFDC
living in California

Income and Taxes	Base Annual Amount, Income or Tax	SHORT-RUN ASSUMPTIONS			LONG-RUN ASSUMPTIONS		
		After New Wages		Cumulative Tax Rate	After New Wages		Cumulative Tax Rate
		Income or tax Amount	Change in this Amount		Income or tax Amount	Change in this Amount	
Earnings	0	8840			8840		
+ Employer's Social Security tax	0	676			676		
= Total Earnings	0	9516	9516		9516	9516	
Taxes							
+ Federal EITC ('96 rules)	0	3094	3094	-32.5%	3094	3094	-32.5%
- Federal income tax	0	0	0	0.0%	0	0	0.0%
- Social Security tax--employee	0	676	676	7.1%	676	676	7.1%
- Social Security tax--employer	0	676	676	7.1%	676	676	7.1%
- State income tax	0	0	0	0.0%	0	0	0.0%
Cash and in-kind transfers							
+ AFDC	8328	1839	-6489	68.2%	832	-7496	78.8%
+ Food Stamps	1297	1122	-175	1.8%	1424	127	-1.3%
+ Medicaid ¹	3000	3000	0	0.0%	3000	0	0.0%
+ Housing subsidies ²	6790	6084	-705	7.4%	6386	-403	4.2%
Work expenses							
- Transportation costs	0	424	424	4.5%	424	424	4.5%
- Child care costs: direct effect	0	1560	1560	16.4%	1560	1560	16.4%
+ Child care costs: effect of deductions and credits ³	0	1517	1517	-15.9%	1455	1455	-15.3%
= CUMULATIVE NET INCOME	19414	22835	3421	64.0%	22370	2956	68.9%

Source: The Urban Institute, TRIM2 model

¹ Even in the long run, all family members retain Medicaid coverage under California's medically needy program.

² The family lives in subsidized housing. The full value of the apartment is \$750/month, but the family pays only \$184 in the baseline simulation.

³ The child care expense deductions in the AFDC, food stamp, and housing subsidy calculations result in higher benefits from those programs. In the short run, the AFDC benefit would be \$3,291, the required rent would fall to bring the housing subsidy to \$6,117, and the value of food stamps would increase to \$1,154.

TABLE 5A
 WHAT HAPPENS TO ONE PENNSYLVANIA FAMILY
 UNDER EIGHT DIFFERENT ASSUMPTIONS ABOUT HOURS OF WORK AND THE HOURLY WAGE,
 SHORT-RUN ASSUMPTIONS

The specifics:
 single mother with 2 children under age 11
 no other people in the household
 no cash income other than AFDC

Income and Taxes	Baseline	Job at the minimum wage (\$4.25) Hours per week:				Full-time job at higher wages Wage as percentage of minimum wage:			
		10	20	30	40	150%	200%	250%	300%
Earnings									
+ Employer's Social Security tax	0	2,210	4,420	6,630	8,840	13,260	17,680	22,100	26,520
= Total Earnings	0	169	338	507	676	1,014	1,353	1,691	2,029
	0	2,379	4,758	7,137	9,516	14,274	19,033	23,791	28,549
Taxes									
+ Federal EITC ('96 rules)	0	884	1,768	2,652	3,094	2,428	1,497	566	0
- Federal income tax	0	0	0	0	0	272	935	1,598	2,261
- Social Security tax--employee	0	169	338	507	676	1,014	1,353	1,691	2,029
- Social Security tax--employer	0	169	338	507	676	1,014	1,353	1,691	2,029
- State income tax	0	0	0	0	23	345	460	575	690
Cash and in-kind transfers									
+ AFDC	4,836	4,147	2,177	551	0	0	0	0	0
+ Food Stamps	2,344	2,021	2,081	2,038	1,673	572	0	0	0
+ Medicaid	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
+ Housing subsidies	4,957	4,501	4,429	4,254	3,756	2,430	1,104	192	0
Work expenses									
- Transportation costs	0	276	276	276	424	424	424	424	424
- Child care costs: direct effect	0	0	0	0	1,498	1,498	1,498	1,498	1,498
+ Child care costs: ded. and credits	0	0	0	0	1,145	692	449	652	315
= CUMULATIVE NET INCOME	15,137	16,317	17,261	18,342	18,886	18,828	19,061	20,725	22,934
RELATIVE TO THE PRIOR EARNINGS LEVEL									
Change in earnings		2,379	2,379	2,379	2,379	4,758	4,759	4,758	4,758
Sum of benefit losses, tax increases		1,199	1,435	1,298	1,835	4,816	4,526	3,094	2,549
Incremental tax rate		50.4%	60.3%	54.6%	77.1%	101.2%	95.1%	65.0%	53.6%
RELATIVE TO THE BASELINE									
Change in earnings		2,379	4,758	7,137	9,516	14,274	19,033	23,791	28,549
Sum of benefit losses, tax increases		1,199	2,635	3,932	5,767	10,583	15,110	18,203	20,753
Cumulative tax rate		50.4%	55.4%	55.1%	60.6%	74.1%	79.4%	76.5%	72.7%

Source: The Urban Institute, TRIM2 model

TABLE 5B
 WHAT HAPPENS TO ONE PENNSYLVANIA FAMILY
 UNDER EIGHT DIFFERENT ASSUMPTIONS ABOUT HOURS OF WORK AND THE HOURLY WAGE,
 LONG-RUN ASSUMPTIONS

The specifics:
 single mother with 2 children under age 11
 no other people in the household
 no cash income other than AFDC

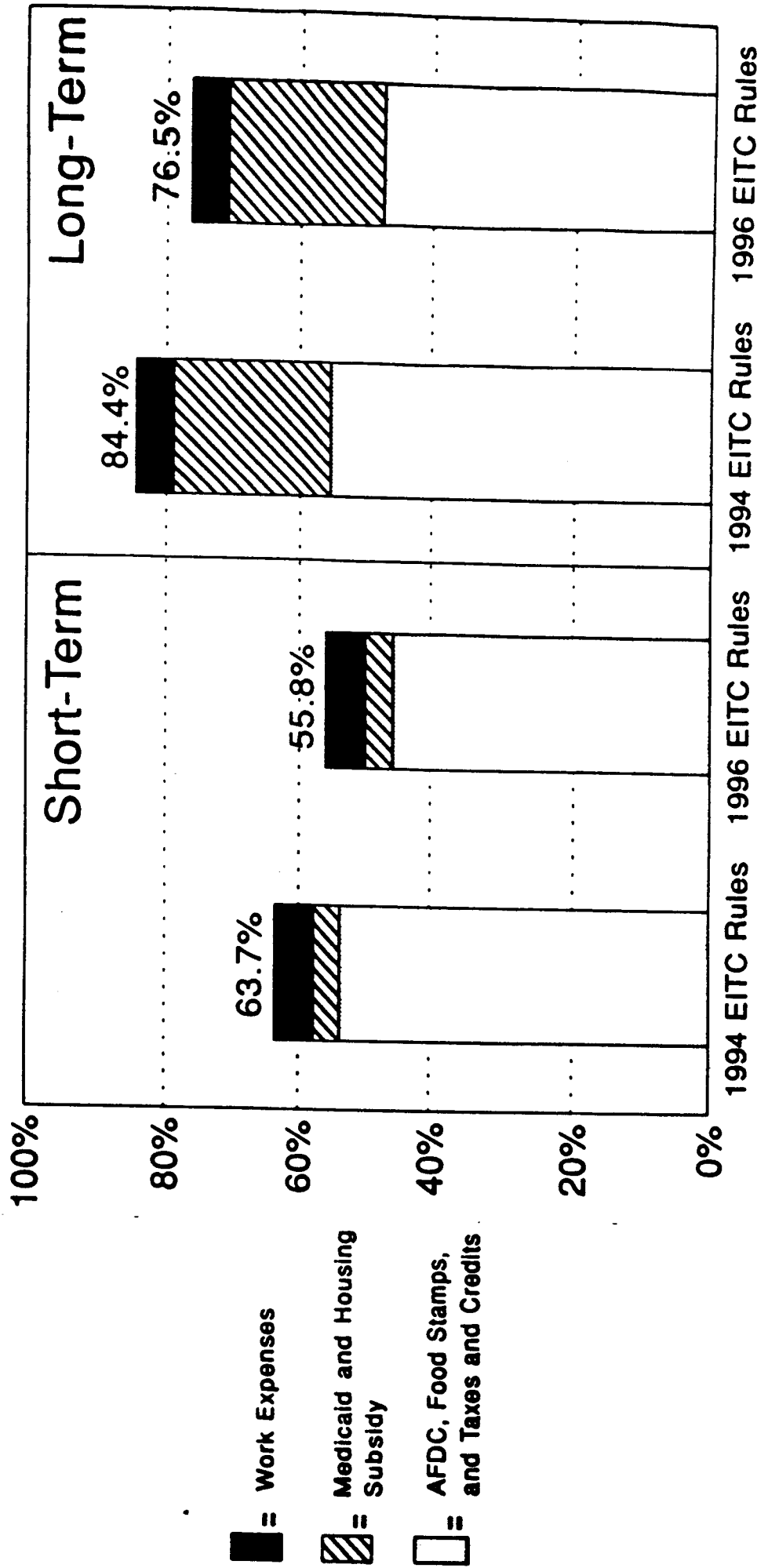
Income and Taxes	Baseline	Job at the minimum wage (\$4.25) Hours per week:				Full-time job at higher wages Wage as percentage of minimum wage:			
		10	20	30	40	150%	200%	250%	300%
Earnings	0	2,210	4,420	6,630	8,840	13,260	17,680	22,100	26,520
+ Employer's Social Security tax	0	169	338	507	676	1,014	1,353	1,691	2,029
= Total Earnings	0	2,379	4,758	7,137	9,516	14,274	19,033	23,791	28,549
Taxes									
+ Federal EITC ('96 rules)	0	884	1,768	2,652	3,094	2,428	1,497	566	0
- Federal income tax	0	0	0	0	0	272	935	1,598	2,261
- Social Security tax--employee	0	169	338	507	676	1,014	1,353	1,691	2,029
- Social Security tax--employer	0	169	338	507	676	1,014	1,353	1,691	2,029
- State income tax	0	0	0	0	23	345	460	575	690
Cash and in-kind transfers									
+ AFDC	4,836	3,706	1,496	0	0	0	0	0	0
+ Food Stamps	2,344	2,153	2,285	2,204	1,673	572	0	0	0
+ Medicaid	3,000	3,000	3,000	3,000	1,600	1,600	0	0	0
+ Housing subsidies	4,957	4,633	4,633	4,419	3,756	2,430	1,104	192	0
Work expenses									
- Transportation costs	0	276	276	276	424	424	424	424	424
- Child care costs: direct effect	0	0	0	0	1,498	1,498	1,498	1,498	1,498
+ Child care costs: ded. and credits	0	0	0	0	1,145	692	449	652	315
= CUMULATIVE NET INCOME	15,137	16,141	16,988	18,122	17,486	17,428	16,061	17,725	19,934
RELATIVE TO THE PRIOR EARNINGS LEVEL									
Change in earnings		2,379	2,379	2,379	2,379	4,758	4,759	4,758	4,758
Sum of benefit losses, tax increases		1,376	1,532	1,246	3,014	4,816	6,126	3,094	2,549
Incremental tax rate		57.8%	64.4%	52.4%	126.7%	101.2%	128.7%	65.0%	53.6%
RELATIVE TO THE BASELINE									
Change in earnings		2,379	4,758	7,137	9,516	14,274	19,033	23,791	28,549
Sum of benefit losses, tax increases		1,376	2,907	4,153	7,167	11,983	18,110	21,203	23,753
Cumulative tax rate		57.8%	61.1%	58.2%	75.3%	84.0%	95.1%	89.1%	83.2%

Source: The Urban Institute, TRIM2 model

Figure 1: Cumulative Tax Rate on Minimum Wage Job

By Short-Term vs. Long-Term Impacts and 1994 vs. 1996 EITC Rules

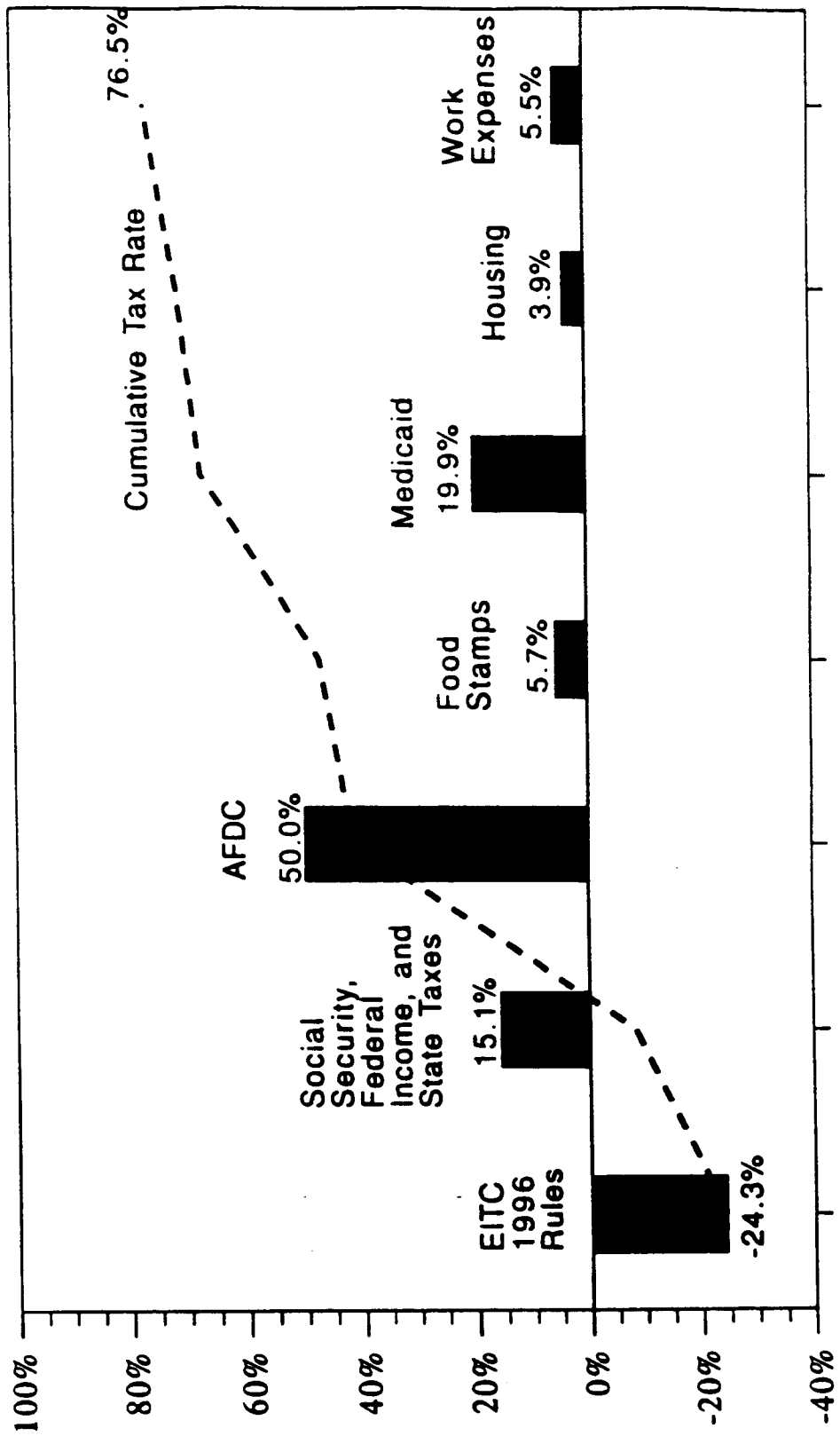
Sample: All AFDC Households



Bars show proportion of income from a transition to full-time, minimum wage work that would be lost due to taxes and changes in benefits from the indicated programs. Sample weighted by (household weight) * (change in earnings). Source: The Urban Institute, TRIM2 model.

Figure 2: Tax Rate on Minimum Wage Job

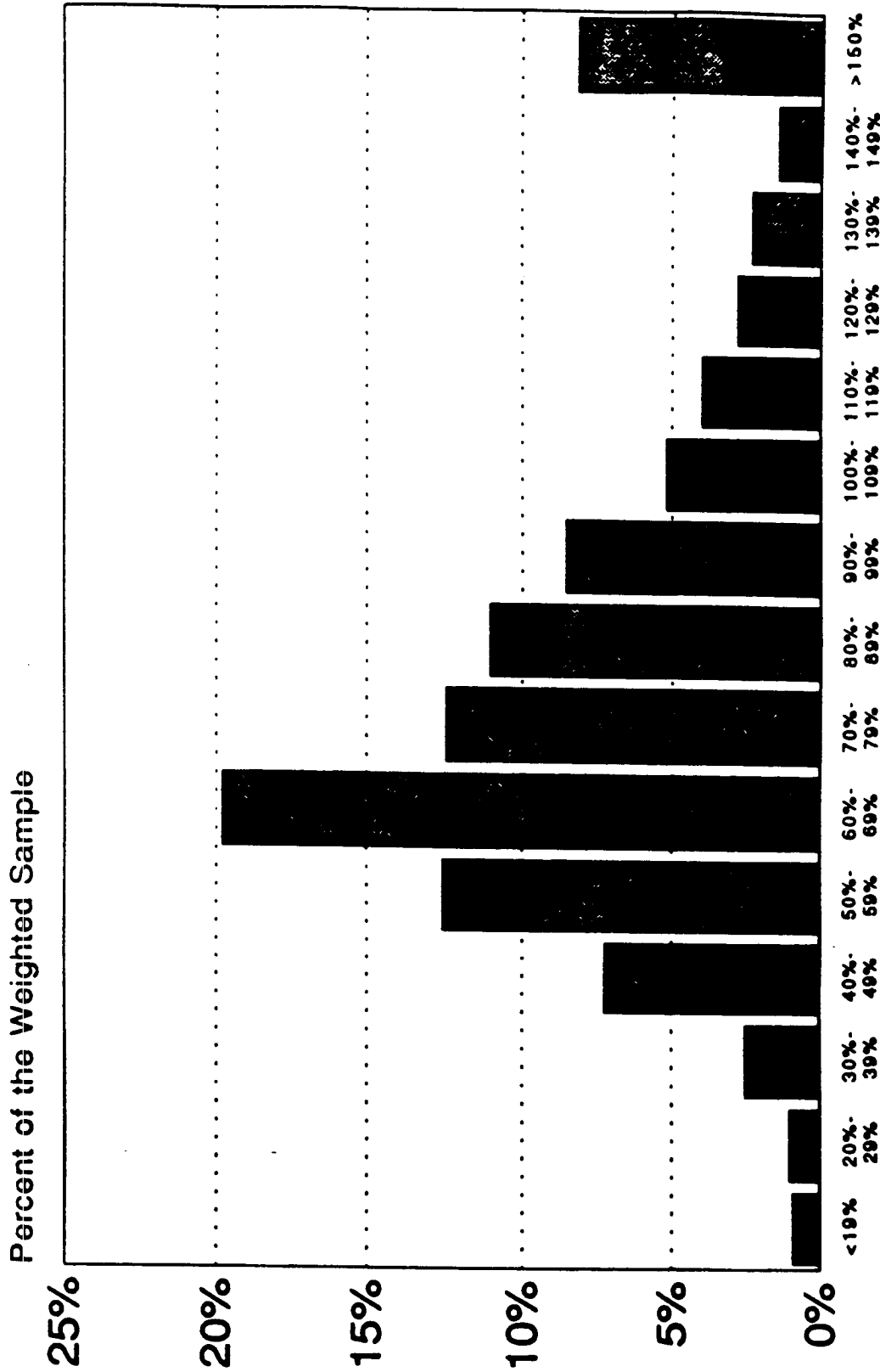
By Source of Income Loss - Long-Term
Sample: All AFDC Households



Bars show proportion of income from a transition to full-time, minimum wage work that would be lost due to taxes and changes in benefits from the indicated programs. Tax credits for workers shown as negative. Sample weighted by (household weight)* (change in earnings). Source: The Urban Institute, TRIM2 model.

Figure 3: Distribution of Tax Rates on Additional Earnings for AFDC Recipients

Sample: All AFDC Households



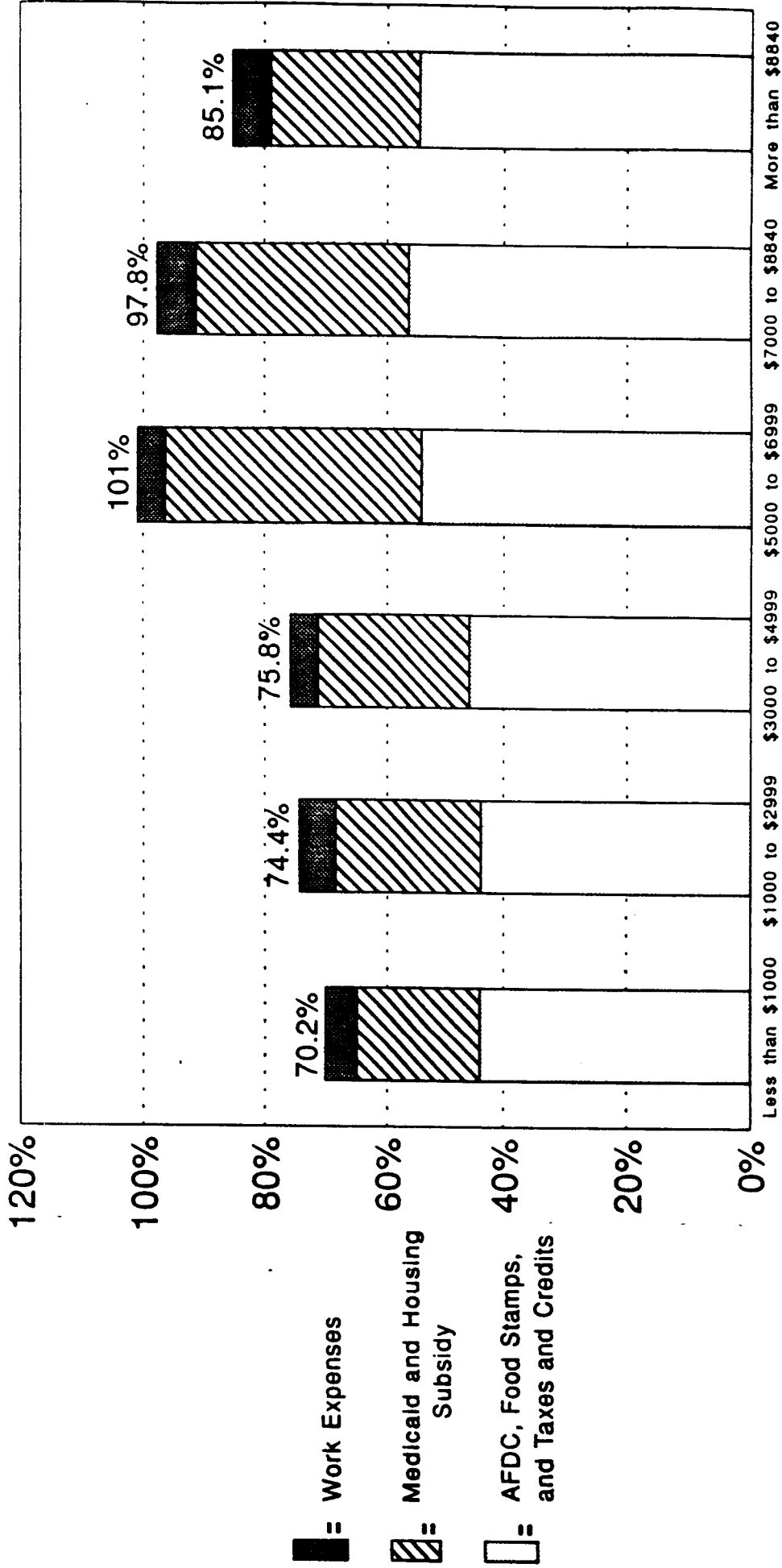
Tax Rate on Additional Earnings

Graph shows the distribution of the proportion of income from a transition to full-time, minimum wage work that would be lost due to taxes and changes in benefits over the long-term under 1996 EITC rules. Sample weighted by household weight. Source: The Urban Institute, TRIM2 model

Figure 4: Cumulative Tax Rate on Minimum Wage Job

By Initial Annual Earnings Before Experiments

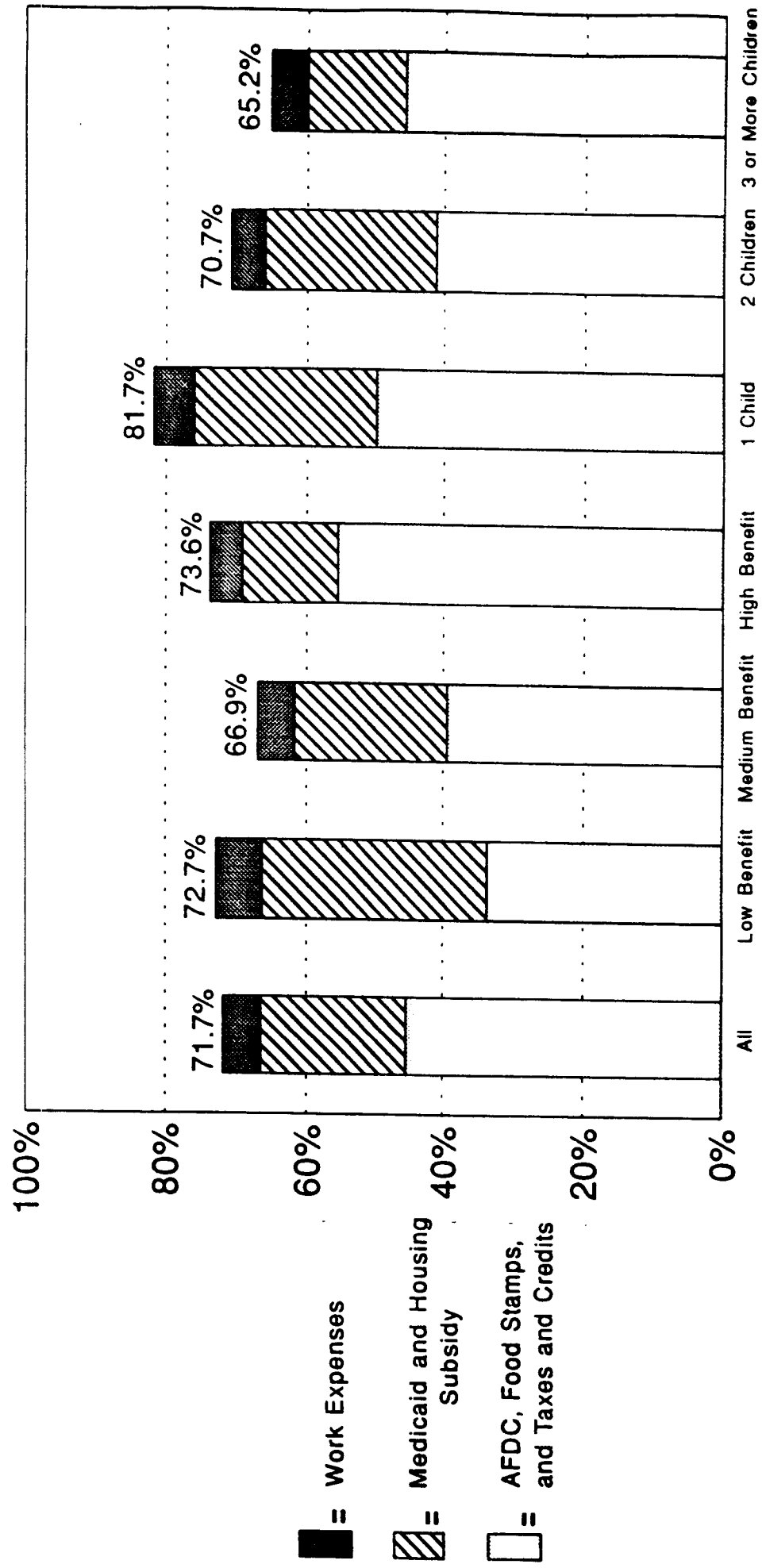
Sample: All AFDC Households



Bars show proportion of income from a transition to full-time, minimum wage work that would be lost due to taxes and changes in benefits from the indicated programs over the long-term under 1996 EITC rules. Bars are grouped by household earnings before the transition. Sample weighted by (household weight) * (change in earnings). Source: The Urban Institute, TRIM2 model.

Figure 5: Cumulative Tax Rate on Minimum Wage Job

By State Benefit Levels and Number of Children - Long-Term
 Sample: Simple AFDC-Basic Households¹



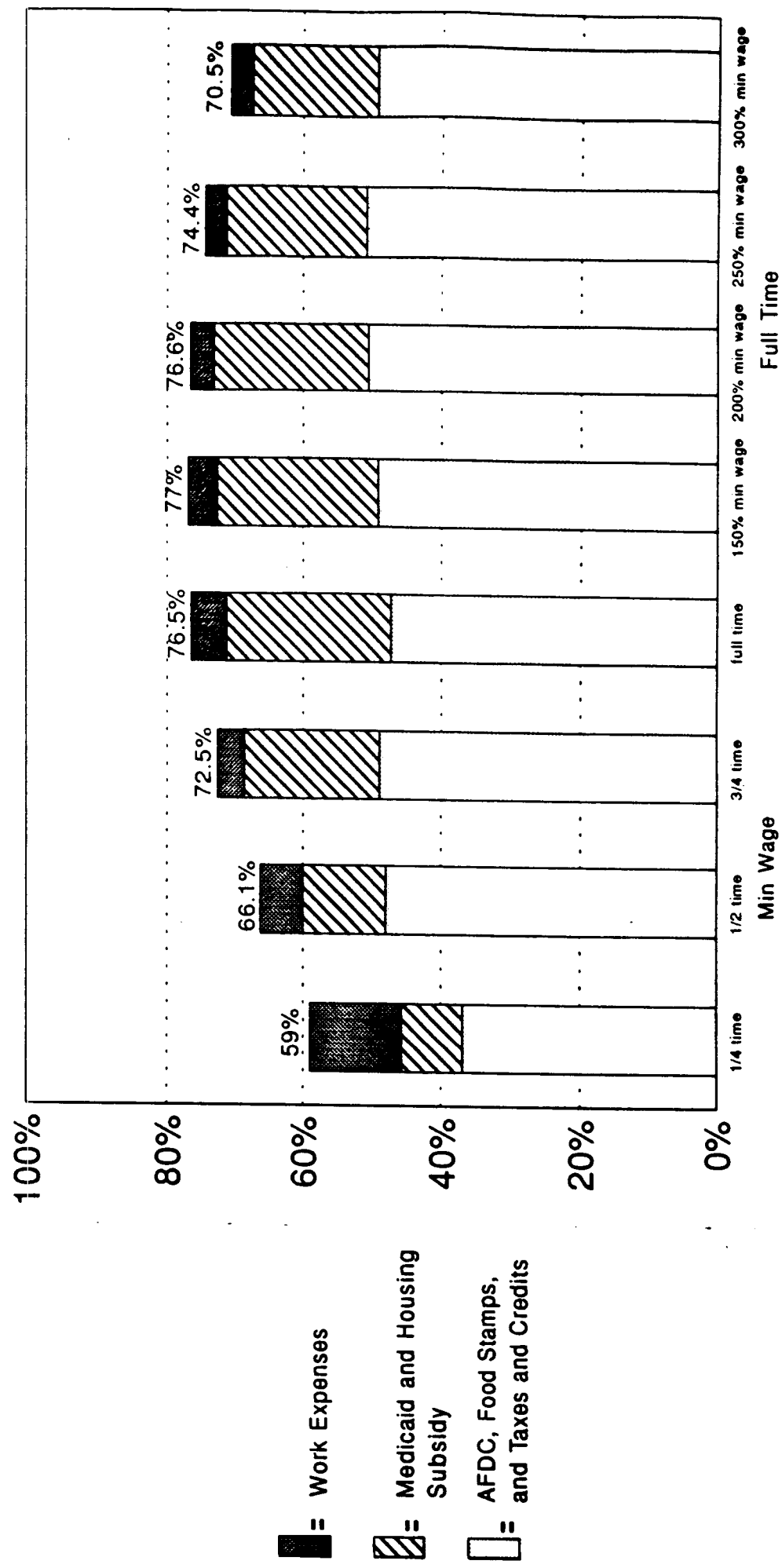
Bars show proportion of income from a transition to full-time, minimum wage work that would be lost due to taxes and changes in benefits from the indicated programs over the long term under 1996 EITC rules. Sample weighted by (household weight)*(change in earnings). Source: The Urban Institute, TRIM2 model.

¹Households consisting of a single parent on AFDC and her/his child(ren) receiving AFDC, and no other persons.

Figure 6: Cumulative Tax Rate on Additional Earnings

By Size of Earnings Increase

Sample: All AFDC Households

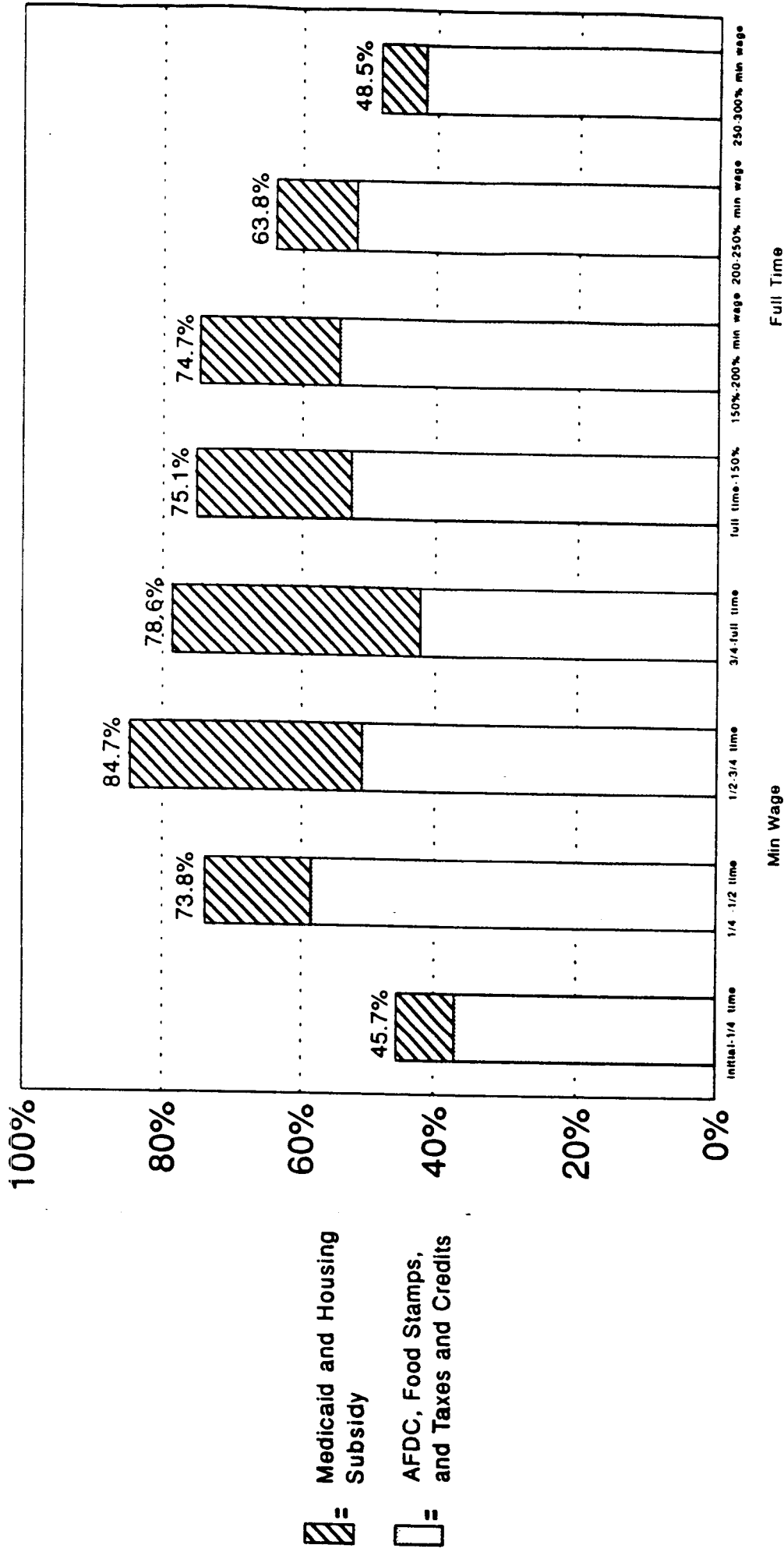


Bars show the proportion of increased earnings that would be lost due to taxes and changes in benefits from the indicated programs over the long-term under 1996 EITC rules. Sample weighted by (household weight) * (change in earnings). Source: The Urban Institute, TRIM2 model.

Figure 7: Incremental Tax Rate on Additional Earnings

(Without Work Expenses)

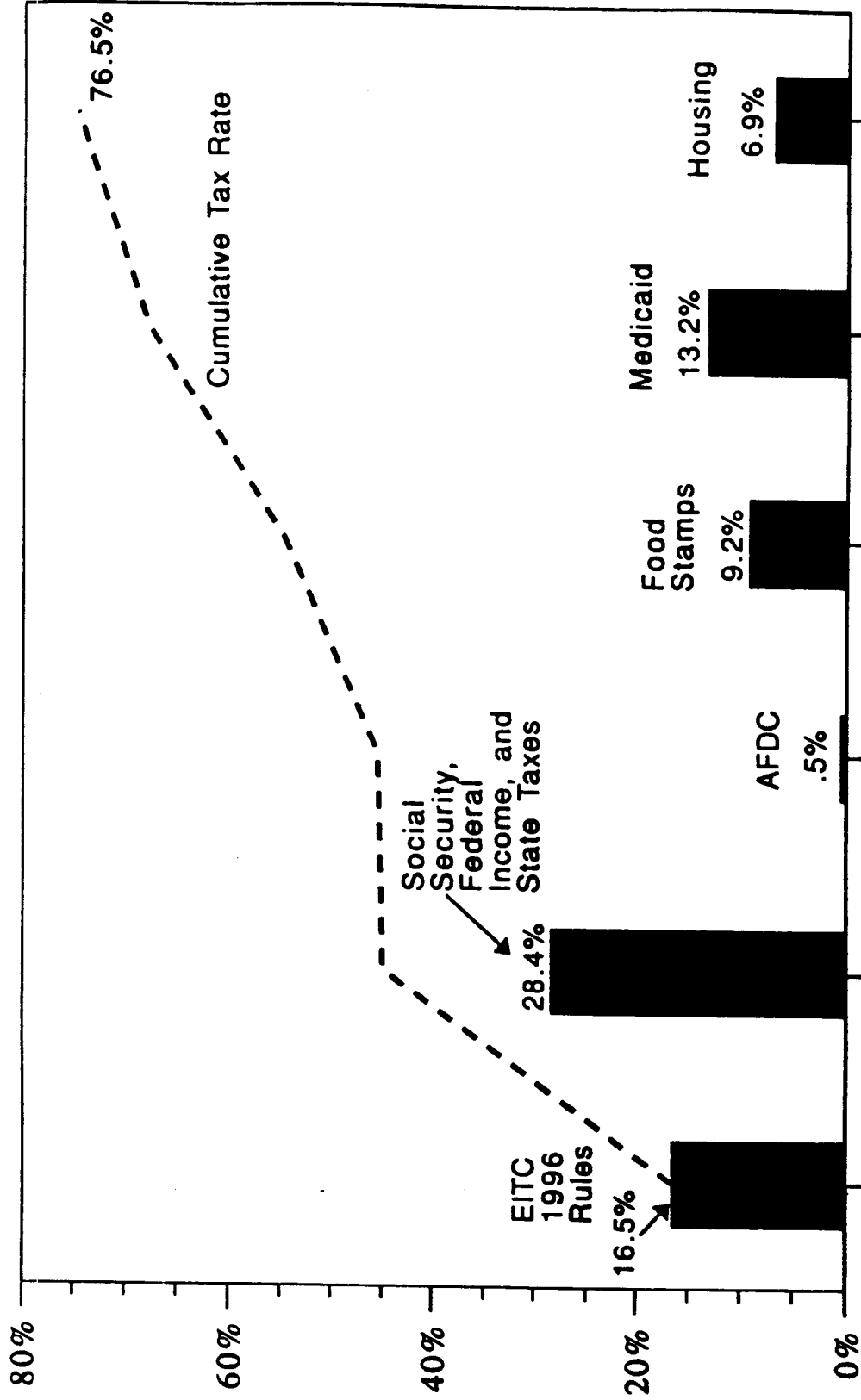
Sample: All AFDC Households



Bars show the proportion of increased earnings that would be lost due to taxes and changes in benefits from the indicated programs over the long-term under 1996 EITC rules. Sample weighted by (household weight) * (change in earnings). Source: The Urban Institute, TRIM2 model.

Figure 8: Incremental Tax Rate on Transition From 150%-200% of Minimum Wage by Source of Income Loss - Long-Term

Sample: All AFDC Households



Bars show proportion of income from a transition from full-time work at 150% of minimum wage to full time work at 200% of minimum wage that would be lost due to taxes and changes in benefits from the indicated programs. Sample weighted by (household weight)*(change in earnings). Source: The Urban Institute, TRIM2 model.

APPENDIX

COMPARISON OF TRIM2 SIMULATIONS TO ACTUAL DATA

TABLE A1
TRIM2 SIMULATIONS VS. ACTUAL PROGRAM DATA, 1991

Counts of Caseload ¹ , Benefit, and Tax Amounts	TRIM2 Baseline Simulations ²	Actual Program Data	TRIM2's deviation from the actual figure
Federal income tax			
tax liability before credits (\$bill.)	\$425.100	\$454.300	-6.4%
child care tax credit (\$bill.)	\$2.646	\$2.521	5.0%
EITC (in the federal income tax system) ³			
tax units with the credit (mill.)	10.280	13.665	-24.8%
amount of credit (\$bill.)	\$7.940	\$11.105	-28.5%
Social Security tax			
paid by employees (\$bill.)	\$187.719	\$190.200	-1.3%
paid by employers (\$bill.)	\$187.719	\$190.200	-1.3%
State income tax liability			
total tax liability after credits (\$bill.)	\$96.812	\$99.895	-3.1%
AFDC			
average monthly caseload (mill.)	4.327	4.311	0.4%
annual benefits (\$bill.)	\$19.669	\$20.289	-3.1%
Supplemental Security Income (excluding children and institutionalized)			
average monthly caseload (mill.)	4.362	4.345	0.4%
annual benefits (\$bill.)	\$15.818	\$16.279	-2.8%
Food Stamp Program			
average monthly caseload (mill.)	8.815	9.198	-4.2%
annual benefits (\$bill.)	17.077	\$18.294	-6.7%
Medicaid coverage of children and non-disabled, non-elderly adults			
ever enrolled during year (mill.)	23.997	24.033	-0.1%
annual insurance value (\$bill.)	\$24.194	\$24.126	0.3%
Public and other subsidized housing			
annual number of households ⁴ (mill.)	4.546	4.600	-1.2%
annual value of subsidy (\$bill.)	\$16.922	\$15.000	12.8%

¹ "Caseload" refers to the number of units benefitting from a program, not the number of persons. The definition of the unit varies across programs.

² These figures are for the entire TRIM2-CPS sample, approximately 60,000 households. For this analysis, we focused on the 2,600 households with AFDC in which the AFDC family head was between the ages of 19 and 64 and not disabled.

³ Microsimulation models are chronically unable to identify enough EITC-eligible tax units to reach administrative targets. Research is underway to determine the extent to which this is due to non-compliance (ineligible units using the credit) vs. other factors.

⁴ TRIM2 does not determine which households live in public or other subsidized housing. This information is taken directly from the CPS reported data.