EMPLOYMENT POLICIES INSTITUTE

Evaluating the Effects of Medicaid on Welfare and Work:

Evidence from the Past Decade

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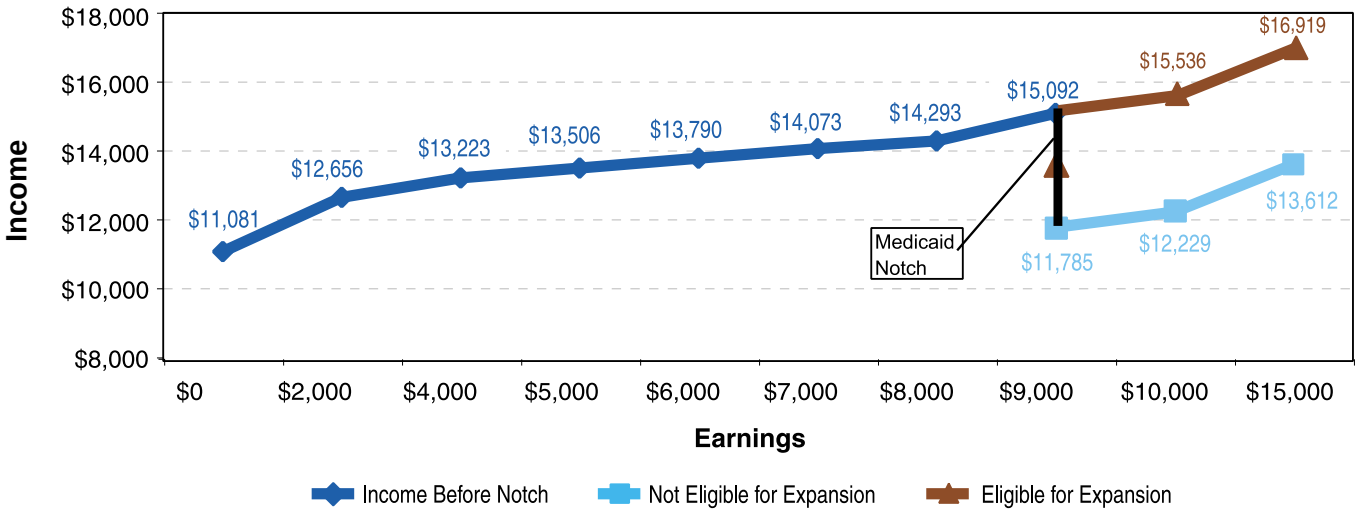
Executive Summary

Public policies designed to help unskilled workers sometimes have unintended consequences. For example, several public assistance programs intended to assist people with few marketable skills actually impose extremely high penalties when earnings rise. That is, as a family's income increases beyond a certain point, most or all of their benefits from the support program are lost because program "marginal tax rates" are high. That is, for each additional (or marginal) dollar earned, program benefits fall by a substantial amount, sometimes by even more than the single dollar earned. This can discourage family members from working, or working full-time. An extreme example of this "earnings penalty" is the loss of Medicaid health insurance benefits. Prior to the 1987 expansions of Medicaid eligibility for children, a family would lose all its Medicaid benefits if its income increased beyond the welfare qualification threshold. Common sense tells us that such severe earnings penalties may deter unskilled individuals from entering the workforce or working their way up to higher paying jobs.

In this study, Dr. Aaron Yelowitz, an economist at UCLA, examines the effects of Medicaid reform on the work incentives and earnings of welfare recipients. Using ten years of Current Population Survey data, Dr. Yelowitz finds that the prospect of losing Medicaid benefits in fact discouraged labor force participation. In addition, he finds that the expansion of Medicaid eligibility for children in poverty helped to increase employment and to reduce welfare dependency by lowering extremely high marginal tax rates on poor families.

The results of Dr. Yelowitz's research provide a beacon for policymakers to use in shaping current public policies in light of the massive changes in U.S. welfare law over the past four years. By passing the Personal Responsibility and Work Opportunity Reconciliation Act in 1996, Congress recognized the value of work for able-bodied citizens. As welfare law evolves, policymakers must keep a careful watch on program features that can discourage the poor from entering the workforce or undermine the financial assistance such programs are intended to provide.

Total Income by Earnings Level — Eligible for Expansion v. Not Eligible for Expansion



The "Earnings Up/Income Not" Dilemma

Dr. Yelowitz explains the hurdles encountered when individuals move from welfare to work, focusing particularly on the high marginal tax rates that encourage welfare dependency. Policymakers attempting to help the poor have created various assistance programs without fully appreciating their ancillary effects.

Low-income families often collect cash, tax credit or in-kind benefits from Food Stamps, the Earned Income Tax Credit ("EITC"), Medicaid and other public programs. As Dr. Yelowitz's new research shows, when a family increased its earnings from employment wages, EITC benefits first increased, then leveled off, and finally phased out. Increased earnings also triggered increased Social Security and other tax burdens along with reductions in government transfers from Food Stamps and AFDC.

Until 1987 the income eligibility limit (the maximum income allowable to receive benefits) for Aid to Families with Dependent Children ("AFDC") was effectively the same as the income limit for Medicaid. This meant that at a predefined level of earnings, both AFDC and Medicaid benefits were lost. Losing Medicaid abruptly created a large and negative "notch" in income realized from work, totaling several thousand dollars. Because of this notch problem, a welfare recipient who increased her earnings above the income limit would actually make her family worse off than before. The notch contributed to keeping families dependent on welfare and discouraged the movement of welfare recipients into the workforce.

Without the benefit of Medicaid expansions, a family[1] in 1996 increasing its earnings from $9,000 to $10,000 would lose their Medicaid benefits. Losing Medicaid and other benefits combined with increased tax liability would cause the family to lose $2,863 of income. Medicaid expansions effectively postponed the loss of $1,838 of income until earnings reach over $17,000 for families eligible for the expansions. Even with the expansions, however, both families stand to have a lower total income at $20,000 in earnings than they had at $9,000 in earnings.

Alleviating the Earnings Penalty — The Effects of Expansion

In 1996, the federal government reformed the AFDC program, requiring many welfare recipients to find and keep a job. Dr. Yelowitz studied those most likely to be affected by welfare reform, a sample consisting of working-age female household heads with at least one child present. A substantial fraction of working-age females (70%) participated in the labor force (as either employed or seeking employment). Among those who failed to finish high school, only 43% were in the labor force, far less than the 78% of high school graduates who were employed or seeking jobs. High school dropouts were also more than twice as likely to collect AFDC benefits compared to high school graduates. Considering that many welfare recipients are now "on the clock,"[2] moving the least skilled among them into the workforce has become the primary challenge of welfare reform.

Medicaid eligibility expansions were some of the first steps taken to facilitate recipients working their way off welfare. The Medicaid notch and high earnings penalties in other programs led many welfare recipients to limit their work activities for fear that they would lose cash, in-kind or health insurance benefits. Dr. Yelowitz' study assesses the success of these Medicaid reforms to promote work over welfare.

Dr. Yelowitz found that the Medicaid expansions led to more people working and fewer people receiving welfare. Specifically, he concluded that expansions of Medicaid led to a 1.58 percentage point increase in labor force participation. His research also found that eligibility expansions led to a 2.03 percentage point decline in the AFDC participation rate, a drop of 6.3%. The positive labor market effects of eligibility expansions led to a sizable decrease of 1.8 percentage points in the percentage of family income coming from cash public assistance.

Some families were helped more than others. Raising the Medicaid income limits led to a 10% drop in AFDC caseloads from 1987 to 1996 for those with

more education. Among those with less education – 54% of whom were on AFDC – the decrease in welfare participation was much less striking, only 0.3 percentage points. These results suggest that policymakers must be particularly attentive to the challenges (and unintended consequences) facing the lowest-skilled individuals — the very ones most likely to remain on welfare today.

Conclusion

Welfare reform has led to millions of welfare recipients leaving public assistance rolls. Unfortunately, those that remain are generally thought to be the least skilled and hardest to employ. It is difficult to justify policies that erect any barrier to employment for this group, such as an arbitrary income cap to programs such as Medicaid. Dr. Yelowitz's research addresses the severe earnings penalties created by one program, and shows how reducing or eliminating such penalties has a positive effect on workforce participation and welfare dependency.

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[1] January 1996, Pennsylvania – for a mother of two children with daycare expenses after four months on the job.

[2] Referring to the 5-year time limits imposed by most states.

Evaluating the Effects of Medicaid on Welfare and Work: Evidence from the Past Decade

Table of Contents

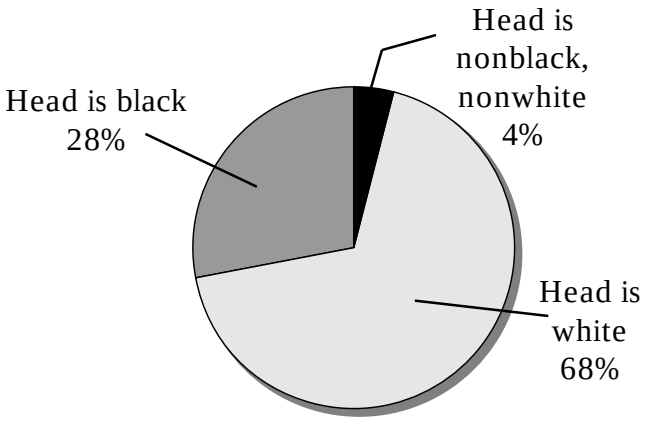
Tables

Evaluating the Effects of Medicaid on Welfare and Work: Evidence from the Past Decade

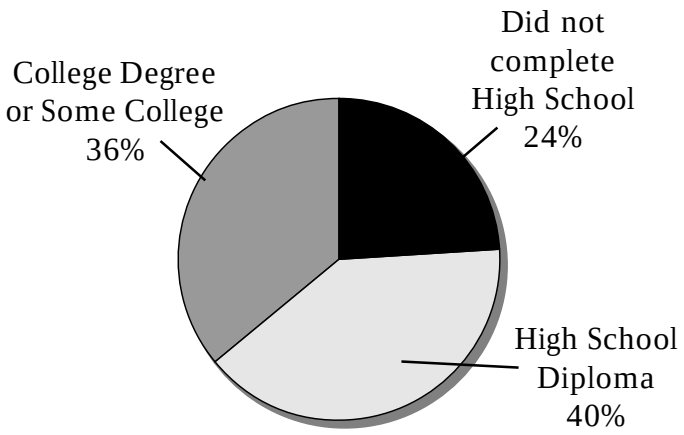
1. Introduction

During the 1980s and 1990s, the United States welfare system offered four main benefits for single parent families: cash assistance through Aid to Families with Dependent Children / Temporary Aid for Needy Families (AFDC / TANF), health insurance coverage through Medicaid, food subsidies through Food Stamps, and public housing.[1] Medicaid benefits have become increasingly important as medical costs have soared, while cash benefits have failed to keep up with inflation. In fiscal year 1991, for example, the combined Federal-State Medicaid expenditure of $21.9 billion on 12.6 million AFDC recipients exceeded cash payments of $20.9 billion to this group (U.S. House of Representatives 1993a). Moreover, while eligibility rules for cash benefits have contracted in recent years, eligibility rules for public health insurance have continually expanded. The 1996 welfare reform (known as the Personal Responsibility and Work Opportunity Reconciliation Act, or PRWORA) limited cash welfare receipt to five years, and eligibility was made contingent on following work requirements. In contrast, federal mandates for Medicaid, and the introduction of the States Children's Health Insurance Program, have increased eligibility for health insurance.

Distribution of Race in Full Sample



Distribution of Educational Attainment



Medicaid provides a basic set of free or subsidized medical services to poor, eligible families. The program is federally subsidized and regulated but administered by the states, which have some leeway in defining the set of services offered. Traditionally, eligibility for Medicaid has been contingent on eligibility for AFDC — that is, one simultaneously qualifies for Medicaid and AFDC by having net income under a state's income eligibility limit. The health insurance is retained as long as the AFDC recipient earns less than the "AFDC break-even level," the point where AFDC benefits are lost. Medicaid is entirely lost once earned income goes beyond the break-even level, generating a marginal tax rate in excess of 100 percent.

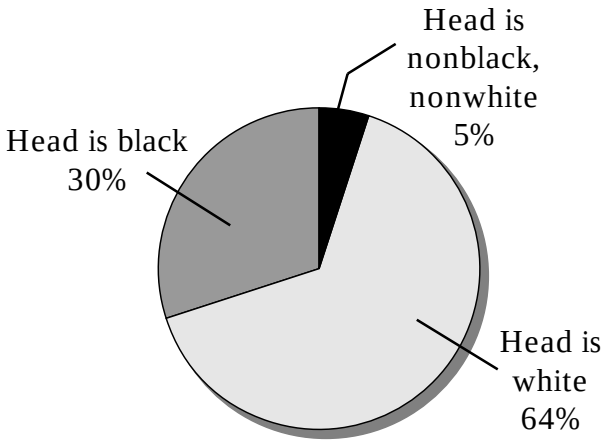
To illustrate the importance of Medicaid, Table 1 provides the budget constraint facing a female head with two children in Pennsylvania in 1996. As her earnings go up, the amount she receives from the Earned Income Tax Credit (EITC), AFDC, and food stamps generally fall, while the amount she pays in taxes generally rises. Her total income, in the final column, goes up much more slowly because of the high marginal tax rates embedded in the welfare

"Earnings need to more than double from the $9,000 level before total income approaches what it was before losing Medicaid."

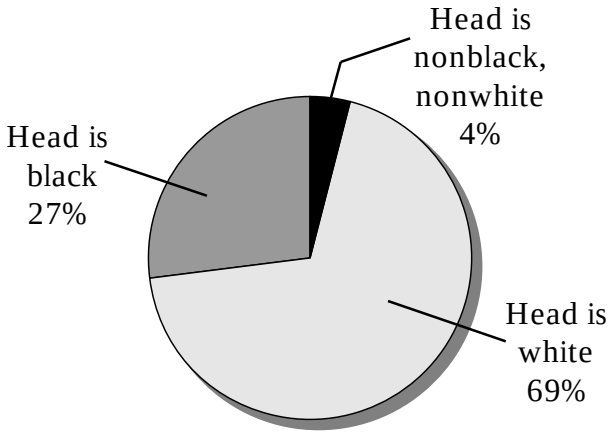
system. This calculation of total income includes Medicaid coverage. Medicaid is received as long as her earnings are between $0 and $9,000, and is lost if her earnings exceed $10,000.[2] Medicaid is assumed to be valued at its average expenditure of $3,307 (see the notes in the table).[3] By adding Medicaid into total income in the final column, total income rises from $11,785 to $15,092 for $9,000 of earnings. By earning another $1,000, so that earnings rise to $10,000, total income now **falls** from $15,092 to $12,229 assuming the job does not offer employer provided health insurance. Earnings need to **more than double** from the $9,000 level before total income approaches what it was before losing Medicaid.

This paper updates and expands my earlier findings in Yelowitz (1995). This study explores some recent Medicaid expansions for children that explicitly severed the link between Medicaid eligibility and AFDC eligibility and generated sizable shocks to the budget set of some welfare recipients. These expansions can be used to investigate the hypothesis that losing Medicaid coverage is a deterrent to leaving cash welfare. If this is true, then proposals which extend health insurance coverage to children in low- and moderate-income families could have

Distribution of Race in High School Dropouts



Distribution of Race in High School Graduates



the additional effect of getting families off the welfare rolls. In Yelowitz (1995), I used data from the 1989 to 1992 March Current Population Survey (CPS) to examine Medicaid's impact on labor force and AFDC participation for the calendar years 1988 to 1991. I found that the fully phased-in Medicaid reforms reduced the probability of participating in AFDC by 1.2 percentage points and increased the probability of working in the labor force by 0.9 percentage points. The effects were quite strong among divorced/separated and more educated women, but not among never-married or less-educated women. This study expands on those results in four important ways:

(1.) It adds data from the 1988 and 1993-97 March CPS, which more than doubles the sample size. Because the AFDC and work questions in the CPS are retrospective, the data covers the calendar years 1987 to 1996.

(2.) It uses more dramatic expansions in Medicaid. For example, some states now offer coverage to all poor children under age eighteen, while others offer coverage to children who live in families with income under 300 percent of the poverty line. The Medicaid expansions studied in Yelowitz (1995) were much more limited.

(3.) Besides examining the effects on labor force participation and AFDC participation, this study examines the effects on hours of

work. The distinction between labor force participation (employment) and hours of work has been important for other policies concerning entry-level workers (such as the minimum wage), and could be important in Medicaid policy, too.

(4.) This study explores the robustness of the findings by using alternative representations of Medicaid policy changes. For example, it modifies some of the assumptions used in the key policy variable, GAIN%.

The conclusions from this paper confirm the findings in Yelowitz (1995). From 1987 to 1996, the Medicaid expansions significantly decreased both welfare participation and the fraction of total income received from welfare, and increased both labor force participation and hours of work. The effect of the expansions on the total income of the family is not significant, however, reflecting the high tax rates of the welfare system. The expansions had large effects for those who completed high school (or beyond), but had no effect for those who did not finish high school. This suggests the Medicaid expansions were ineffective for those without many job skills. The remainder of the paper is organized as follows. Section 2 describes the changes in the Medicaid during the 1980s and 1990s. Section 3 examines the theoretical effects of expanding the Medicaid program, when Medicaid was previously linked to AFDC. Section 4 outlines the empirical implementation, by discussing the methodology, constructing the policy variable, and presenting the regression framework. Section 5 presents the data, primary results, and several robustness checks. Section 6 concludes.

2. Description of the Medicaid Expansions During the 1980s and 1990s

Starting in 1984, and especially from 1986 onward, Congress attempted to increase access to health care for pregnant women, infants and children through a series of Medicaid expansions. These expansions in eligibility were motivated by rising concerns over infant mortality and child health. Thus, Medicaid was targeted to all poor children, not just to recipients of cash welfare.

[P]roposals which extend health insurance coverage to children in low- and moderate-income families could have the additional effect of getting families off the welfare rolls.

Several pieces of legislation, which are documented in the time line in Table 2, expanded access to health care for children. In 1986 and 1987, federal legislation gave the states several options for expanding their Medicaid program. Legislation in 1988, 1989 and 1990 mandated more extensive coverage. Table 3 illustrates the generosity of the expansions across the different states over time, by showing the age limit to qualify for Medicaid, and the Medicaid income eligibility limit for an infant expressed as a percentage of the federal poverty line (FPL).[4] [5] The income limit for older children was usually lower than that for infants. The earliest legislation (effective April 1987) gave states the option to carry out the expansions to children younger than two. By January 1988, half the states had expanded eligibility. By the end of 1989, every state had adopted some form of expansion, although there was a great deal of across-state variation in Medicaid eligibility, which was based on the age of the child. The later mandates increased the income threshold to 133 percent of the FPL and the age limit to six. Thirty-two states were required to adjust their income threshold, and thirty-seven states were forced to increase their age limit. Finally, the mandates expanded eligibility to children over the age of six to 100 percent of the FPL in 1991. By December 1991, all states extended Medicaid coverage to children up to age eight, though the income eligibility limits for infants varied substantially. In subsequent years, several states expanded coverage beyond the federal requirements with their own funding. By December 1993, for instance, New York covered all children under age thirteen to 185 percent of the FPL, while Minnesota covered all children under

age eighteen to 275 percent. Table 4 summarizes the post-mandate expansions. Between 1993 and 1996, a few states (between four and eight) went beyond the federal mandates for pregnant women and infants, while a substantial number went beyond the mandates for older children. By February 1996, 28 states exceeded the federal requirements for older children.

The effects on labor supply from the Medicaid expansions may be useful for evaluating other recent government initiatives. The Balanced Budget Act of 1997 created Title XXI, the States Children's Health Insurance Program. Title XXI provides more than $24 billion in federal grants over five years for states to design comprehensive health insurance programs for uninsured, low-income children.[6] Starting October 1, 1997, the law allowed states to use this new source of funds to expand insurance coverage under their existing Medicaid program, create a new state children's health insurance program (S-CHIP), or implement a combination of both. Many states are using Title XXI to provide public health insurance for all children under eighteen with family income under 185 or 200 percent of poverty. This expands on current Medicaid law which, as of July 1998, required coverage through age fourteen to 100 percent of poverty. Several states also offer subsidized premiums for health insurance for children in families slightly higher up the income distribution — for example, New Jersey allows families to purchase coverage for $15 per month if their income is between 150 and 200 percent of poverty; New York charges monthly premiums on a sliding scale up to $36 per family for those with income between 160 and 222 percent of poverty; premiums are the full amount for children above 222 percent.

These reforms during the 1980s and 1990s resulted in a dramatic increase in Medicaid eligibility and coverage. Administrative data show a sharp rise in the number of children covered by the Medicaid expansions (beneficiaries without cash assistance) starting in 1988, whereas the number of children enrolled in the Medically Needy and AFDC programs remained quite stable. By 1991, 3.0 million children were covered by Medicaid because of the expansions (U.S. House of Representatives 1993b). By 1996, almost 4.5 million children and 1.3 million pregnant women were covered by the Medicaid expansions.[7]

3. Theoretical Effects

To analyze the effect of Medicaid on labor supply and welfare participation among potential welfare participants, I use a variant of the static labor supply model, which incorporates taxes and the welfare system. Assume that the consumer maximizes utility, $U = u(L,C)$, where L and C are choices for leisure and the purchase of consumption goods respectively. She faces a constant pre-tax wage, w^0. The welfare and tax system create non-linearities in the budget set. At zero hours of market work, the mother receives a certain level of AFDC and food stamp benefits, known as the "guarantee," in addition to Medicaid. Figure 1 illustrates this budget set for a welfare recipient in Pennsylvania, similar to the budget set that was previously discussed in Table 1. As she begins to work, her AFDC and food stamp benefits are taxed away, so her after-tax wage is $w^1 = (1-\tau_{AFDC})w^0$, where τ_{AFDC} is the marginal tax rate for earning income while on AFDC (which varies from 67 to 100 percent). Once she works more than $H_{Breakeven}$, the hours of work where the entire AFDC benefit is taxed away, she loses her AFDC eligibility, and therefore her Medicaid benefits, which creates a dominated part of the budget set. This discontinuous drop in benefits has been called the "Medicaid notch." Once the recipient works more than this level of hours, she faces an after-tax wage of $w^2 = (1-\tau_{FED})w^0$, where τ_{FED} is the marginal tax rate in the federal and state income tax codes. To determine what region of hours is dominated, however, we would need to know the value of the benefits she received from Medicaid.

As states have expanded eligibility for Medicaid by increasing the income limit to a higher level than what an AFDC recipient could earn, the notch has moved. The coverage is still means-tested, but at a potentially higher level than the AFDC income limit. The change in the income limit yields several predictions for those eligible for the expansions by changing the budget set as illustrated in Figures 1 and 2.

- Labor force participation increases (or remains unchanged if no behavioral response occurs), since the new bundles on the budget set occur where the woman participates. This occurs because some women who were not initially working before the expansion begin to work. No one who is currently working should withdraw from the labor force, because that {L,C} bundle was available before the expansion.

- AFDC participation decreases (or remains unchanged if no behavioral response occurs), because the only new bundles are where the woman leaves AFDC.

- AFDC participation decreases more than labor force participation increases. This occurs since some women will be located along the welfare part of the budget set (but not at zero hours of work) before the expansions, implying participation in both AFDC and the labor force. After the expansions these people could increase their hours and locate on the post-expansion part of the budget set, which we observe as exiting AFDC but having no effect on labor force participation. For women initially at zero hours of work, the two effects should be the same, since the only *new* {L,C} bundle the expansion offers is to exit AFDC and enter the labor force. For women initially off welfare, their hours may decrease, but they will not participate in AFDC, which they could have already done. Therefore, in aggregate, the effect on AFDC participation is larger than the effect on labor force participation.

- The effect on total hours of work is ambiguous. Hours could increase for women initially on AFDC, but could decrease for women initially off AFDC.

Two other points deserve mention. First, the existence of the Medicaid "notch" is predicated upon no feasible insurance alternatives for these households. It may be reasonable to think that with the skill mix that the group possesses, the possibility of employer-provided health insurance coverage is quite low. Short, Cantor and Monheit (1988) examined the dynamics of Medicaid enrollment. Although 38 percent of the sample that was initially on welfare left over the next two years, only 43 percent of this subgroup was covered by private health insurance. This probably represents an upper bound on the availability of employer-provided health insurance for AFDC recipients, because those who leave AFDC are likely more skilled than those who remain on it. A more recent study by O'Brien and Feder (1998) finds that whether they work in large or small firms, low-wage workers are far less likely than the better paid to have employer coverage. Approximately 90 percent of the highest wage workers had employment-based health insurance in 1996, while only 42 percent of the lowest wage workers were covered. They conclude that the primary reason low-wage workers lack coverage is that their employers do not offer them health insurance benefits.

Second, welfare stigma potentially provides a second explanation for why the effect of extending Medicaid should be smaller on labor force participation than on AFDC participation. Households that previously worked because they found collecting AFDC very stigmatizing might withdraw from the labor force when given the opportunity to receive Medicaid without being on AFDC.

4. Methodology and Regression Framework

4.1 Treatment and Control Groups

The reforms in the Medicaid program create "treatment" and "control" groups by providing variation in Medicaid eligibility along three arguably exogenous dimensions. The reforms create variation within a state at a given point in time, because they condition eligibility on the age of the child. In addition, they create variation in eligibility across states and over time, since the earlier legislation was state-optional and the states adopted the expansions at different rates.

For purposes of illustration, consider the following example: between 1988 and 1989, California carried out a Medicaid expansion for children up to age five, while New York did not. The "treatment" group, always, is families in California in 1989 with young children. One potential estimate of Medicaid's effect on AFDC participation would use

families with older children in California as a control group. Let $AFDC_{s,t,y}$ stand for the average AFDC participation rate across households, where s indexes states, t indexes time, and y indexes child's age. Therefore $AFDC_{CA,89,5}$ and $AFDC_{CA,89,6}$ represent the AFDC participation rates for households in California in 1989 with five- and six-year-olds, respectively. The impact of the Medicaid law change could be measured by the difference $(AFDC_{CA,89,5}\text{-}AFDC_{CA,89,6})$, which is hypothesized to be negative since the Medicaid expansions offer an incentive to leave AFDC, because it provided a substitute for Medicaid received while on AFDC. Similar computations could be carried out with labor force participation or hours of work of female heads.

An important objection to this estimate is that the two groups may not be strictly comparable. If families with older children have lower child care costs, then the previous estimate would be biased. The subsequent regressions will include many demographic and family structure variables, but unobserved differences may still remain based on child's age that are correlated with Medicaid eligibility. Two other estimates instead use the across-state and over-time dimensions. By comparing the participation rates for households with five-year-olds in 1989 across California and New York, we eliminate the previous source of bias. Another estimate of Medicaid's impact on AFDC participation would therefore be $(AFDC_{CA,89,5}\text{-}AFDC_{NY,89,5})$. As a final alternative, we could examine changes in AFDC participation over time within California, that is $(AFDC_{CA,89,5}\text{-}AFDC_{CA,88,5})$. These alternatives could introduce new sources of bias, however. One obvious source of contamination would be varying economic conditions: if the economic conditions in New York were different from those in California (or different in the years 1988 and 1989), then this would surely affect AFDC participation, and the analysis would incorrectly attribute this effect to Medicaid. In the regression analysis, I use all three sources of variation to create a proxy for Medicaid eligibility. By using all of the variation and controlling for omitted factors that vary across states, over time, or by child's age, the estimated effect of the Medicaid expansions is more credible.

4.2 Constructing the Policy Variable

The variable used to represent the Medicaid expansions relies on the budget constraint analysis in Figures 1 and 2. The reforms in Medicaid boil down to changing the income limit for eligibility (measured as a percentage of the poverty line). The main measure used in this study asks: how much is the Medicaid income limit increased above its previous AFDC level? This is formulated as:

$$(1) \qquad GAIN\% = \max(MEDICAID\% - AFDC\%, 0).$$

GAIN% parameterizes how drastically severed is the link between Medicaid eligibility and AFDC eligibility. MEDICAID% is the income eligibility limit from the Medicaid reforms measured as percentage of the poverty line, while AFDC% is the income limit from AFDC measured as a percentage of the poverty line. GAIN% can be equal to zero for two reasons. First, the child may be in a household that is ineligible for the Medicaid expansion (based on the child's age), so that the link between AFDC and Medicaid is not severed. Second, the household might be eligible for the expansion, but MEDICAID% may be less than AFDC%. After the appropriate deductions and tax rates are accounted for, the income level that a recipient can earn from AFDC% can exceed 100 percent of the poverty line. GAIN% explicitly models the fact that the expansions should have less impact in a generous AFDC state since the recipient could have worked and earned some amount of money before the expansion. In the full sample of 34,665 heads, roughly 25 percent have GAIN% equal to zero because of high AFDC income limits and deductions, while 46 percent have GAIN% equal to zero because the children in the household are ineligible for the expansions.

In principle, measuring MEDICAID% is straightforward: it is equal to zero if the household is ineligible for the expansion, while it is equal to some percentage of the federal poverty level (FPL), typically 75, 100, 133 or 185 percent, if the recipient qualifies for the expansion. In practice, assigning MEDICAID% to a family is more complicated, for two reasons. First, families with two or more children may

face different income limits for different children. Second, some expansions were in place for only part of the year. For example, MEDICAID% increased from 100% to 133% for many five-year-olds in the middle of 1990. To assign MEDICAID%, I impute the value for the *youngest* child in a family, and I average the income limit throughout the entire calendar year. Thus, the five-year-old child in the example above would be assigned MEDICAID% a value of 116.5%.

AFDC% depends on a state's payment standard, which is a state-specific income limit used to determine AFDC eligibility. The information used to compute AFDC% changes over time as well as through changes in the ordering of the certain deductions for welfare payments, known as disregards. It also varies by family due to family size, work expense deductions, and child care deductions. Furthermore, the Family Support Act of 1988 (FSA) affected the calculation of the AFDC income limit in several ways. Additional details about computing AFDC% are described in the appendix. After incorporating this detail, AFDC% is calculated as:

(2) AFDC% = [(PAYMENT/BRR) + DISREGARD + WORKEXP + DAYCARE]/POV

where PAYMENT stands for the state's payment standard, BRR for the benefit reduction rate (which is 2/3 for the first four months of work), DISREGARD for the standard deduction, WORKEXP for work expenses, DAYCARE for total child-care deductions, POV for the dollar amount of the FPL (appropriately adjusted for family size, and inflated by 1.15 for Hawaii and 1.25 for Alaska). DAYCARE expenses are calculated as:

(3) DAYCARE = (1 + ½*↑(post-FSA))*DEDUCTION*CHILDREN

where ↑(post-FSA) is defined as an indicator variable equal to one after the passage of FSA and zero otherwise, DEDUCTION is the child care expense deduction while on AFDC, and CHILDREN is the number of children in the family under age thirteen.[8]

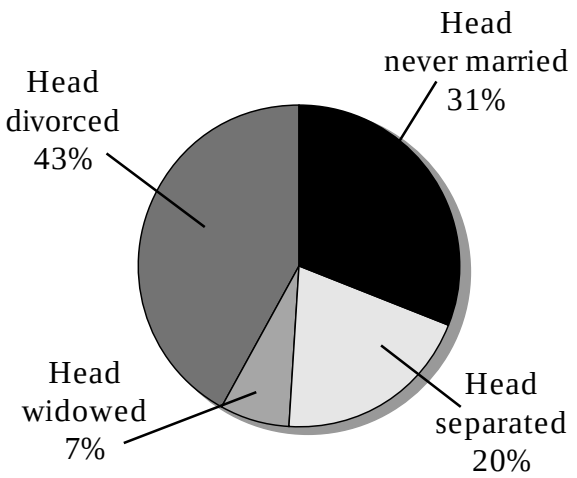
4.3 Regression Framework

To address the concerns about omitted variables bias mentioned in Section 4.1 above, I include a full set of dummy variables for state, time, and youngest child's age in the regression; moreover, I include interactions of state and time to control for other changing factors within a state. I estimate probit models and linear probability models because of the large sample size and ease of interpretation. The model takes the form:

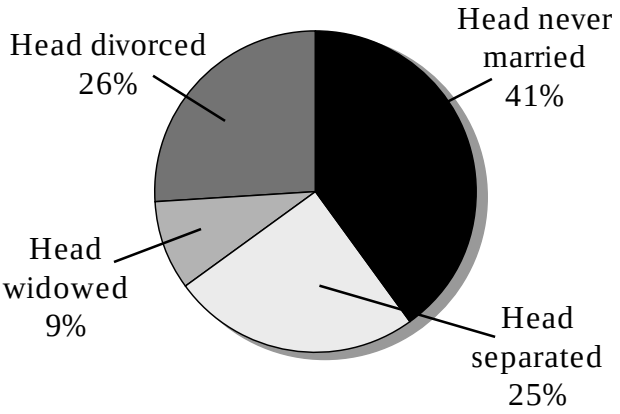
(4) $AFDC_h = \alpha + ßGAIN\%_h + \gamma X_h + \delta_1 YOUNGEST + \delta_2 STATE*TIME + \varepsilon_h,$

where *AFDC* is an indicator variable equal to 1 if the household participated in AFDC during the year, *GAIN%* is defined from above, *X* is a vector of other individual or household characteristics that may affect AFDC participation (such as age, education, and race of the female head, and family size), STATE is a set of dummy variables indicating the state of residence (51 categories because Washington, D.C., is included), TIME is a set of dummy variables for calendar year (10 years, ranging from 1987 to 1996), and YOUNGEST is a set of dummy variables indicating youngest child's age (18 groups, ranging from zero to seventeen); STATE*TIME represents the interaction of the state and time fixed effects.[9]

Distribution of Marital Status in Full Sample



Distribution of Marital Status in High School Dropouts



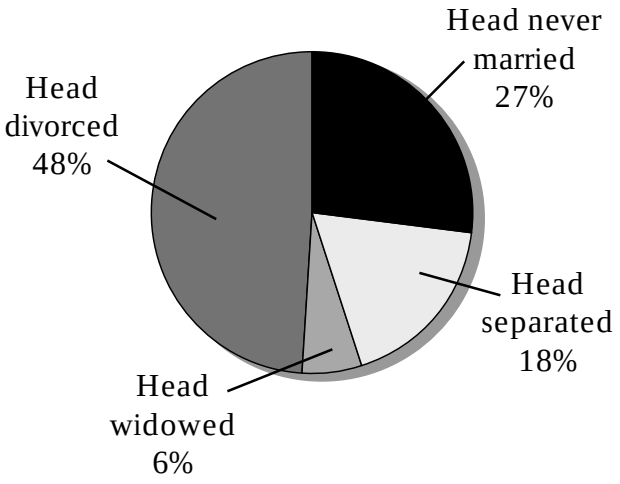
5. Data and Results

5.1 Data Description

This study uses the 1988-1997 Current Population Survey (CPS) March Annual Demographic File, which provides retrospective information on family income, employment, and program participation from 1987 to 1996 for the noninstitutionalized population. Overall, the sample consists of 34,665 working-age female heads with at least one child present.[10] Appendix Table 1 shows the number of observations lost from applying the sample screens. I excluded households with greater than nine family members because they could not be linked to state-specific AFDC payment standards in certain years. The female head's age is restricted to be between 18 and 64; the first cut-off is chosen to avoid currently enrolled students, and the second is chosen to avoid analyzing labor supply decisions of the elderly. The sample also excludes families with foster children, nonrelatives, partners, or roommates, because the variable *GAIN%* concentrates on incentives created from AFDC, rather than from AFDC-Unemployed Parents, Unemployment Insurance, Disability Insurance, or General Assistance. For similar reasons, I exclude families with elderly members, to avoid labor supply issues associated with Supplemental Security Income or Social Security. Finally, I exclude households with imputed values: the CPS uses a "hot-deck" imputation procedure to fill in missing values, but such observations simply add measurement error for this study.

Most of the variables used in the analysis are straightforward, and come directly from a specific CPS question, but several deserve some elaboration. First, labor force participation of the female head is equal to one if the respondent answered "Yes" to either of the following two questions: "Did ... work at a job or business at any time in 19..?" or "Did ... do any temporary, part-time, or seasonal work even for a few days during 19..?" As Table 5 shows, in the full sample 70 percent of female heads worked at some point in the previous year. But among the least skilled — high school dropouts — only 43 percent were in the labor force. This is dramatically lower than for those with at least a high school education — 78 percent. Second, AFDC participation is equal to one if the respondent answered either "AFDC" or "Both" to the following question: "Did ... receive AFDC or some other type of assistance?" Among all female heads, nearly one-third participated in AFDC during the previous calendar year. The AFDC participation rate among dropouts, 54 percent, is more than double the rate among those with more education. Third, the fraction of income received from welfare is defined as family income received from public assistance divided by total family income. In instances when this fraction was greater than one (usually because of negative self-employment income), it was set equal to one. On average, one-quarter of a household's income came from public assistance, although dramatic differences exist, again based on educational attainment.

Distribution of Marital Status in High School Graduates



Finally, an extensive set of variables related to family structure was included. The set includes dummy variables for number of related children under age eighteen, number of family members, youngest child's age (which is used in defining *GAIN%*), and number of children in each age bracket from age zero to age seventeen entered linearly. The female heads have slightly fewer than two children, on average, and less-educated heads tend to have larger families and younger children.

Exploring Table 5 further, several other variables are noteworthy. First, *GAIN%*, the difference between the Medicaid expansion income limit and the AFDC income limit, moved up by 10.3 percent of poverty on average, with a standard deviation of 23.6 percent. Although it is not shown in the tables, *GAIN%* increased from an average of zero (with no Medicaid expansions) in 1987 to an average of 26.8 percent in 1996.[11] Since the poverty line for a family of four was $15,600 in 1996, this translates into an increase in the income limit of $4,180.[12] Of course, even this 1996 average masks substantial variation across families based on their state of residence and the age of the youngest child. In states with high AFDC limits or families with older children, *GAIN%* will be smaller. Second, regardless of how it is defined, the labor force attachment of dropouts is lower. Average family income for dropouts, expressed in 1996 dollars, is less than half of that for those with more education. Similarly, hours worked per week for dropouts is 15.3 hours, about half the amount for those with more education. Third, a large majority of female-headed households are white — approximately two-thirds of the sample. The racial composition among high school dropouts is also very similar to that for the full sample. On the other hand, large differences exist in marital status for the less skilled high-school dropouts — they are much more likely to be never married, rather than divorced, separated, or widowed.

5.2 Main Results

The results from the baseline regressions are shown in Table 6. Five labor market outcomes are examined: AFDC and labor force participation, hours worked per week, family income, and the fraction of income from welfare. Except for hours per week, the other outcomes are measured on an annual basis. The baseline includes all female heads, child care deductions for children ages zero to twelve, and 17 dummy variables for youngest child's age and 509 dummy variables for state*time interactions.[13]

[G]overnment intervention is often counterproductive for the less skilled and less educated.

The table shows that the Medicaid expansions, as represented by *GAIN%*, significantly reduced welfare participation and significantly increased employment, as one would predict from the budget constraint analysis in Columns 1 and 2. The first column estimates a probit model on AFDC participation, with the probability derivatives in the adjacent column in italics. By moving *GAIN%* from its 1987 average value of zero to its 1996 value of 26.8 percent, AFDC participation falls by 2.03 percentage points.[14] Since the overall AFDC participation rate was 32 percent, this represents a decline of 6.3 percent in the AFDC caseload due to the Medicaid expansions. Moving to the second column, *GAIN%* has a significant positive effect on labor force participation, though the magnitude of the effect is smaller than that for AFDC participation. This is expected, because some female heads who were both working and enrolled in AFDC would have left AFDC in response to the expansions but would still be in the labor force. Moving *GAIN%* from its 1987 level to its 1996 level results in an increase in labor force participation of 1.58 percentage points. In addition to labor force participation, the expansions increased hours worked per week. The third column, estimated with OLS, shows that a similar policy change leads to an increase of 0.4 hours per week, which is a rather modest increase of 1.5 percent. The fourth column examines total family income. Recall from Table 1 that the welfare system has high implicit tax rates, even excluding the treatment of Medicaid. The fourth column shows that even though AFDC participation falls and labor force participation increases, the net effect for family income is approximately zero. As one would expect from the previous four results, the fraction of income received from welfare falls in the fifth column. Moving *GAIN%* by 26.8 points leads to 1.8 percent less of the family's income coming from public assistance.

[A]mong the more educated, the Medicaid expansions accounted for nearly a 10 percent drop in the AFDC caseload between 1987 and 1996.

The other controls have reasonable effects. Welfare participation declines with the age of the female head, until age 46, and then increases modestly. Part of the decline is due to children aging out of welfare eligibility, which ends when the youngest child reaches age eighteen (or nineteen if the child is enrolled in school). Welfare participation also falls with education levels. Being a high school dropout raises the likelihood of participating in welfare by 30.6 percentage points relative to having some college education. Compared to whites, other races are somewhat more likely to participate in AFDC. Finally, being never-married or living in a central city, raise the odds of receiving welfare. Similar patterns exist across the other columns for these covariates, with opposite signs for the labor market outcomes.

5.3 Results Stratified by Educational Attainment

This section probes the basic results deeper, by stratifying on educational status — whether the female head has completed high school. Those who fail to graduate from high school inherently limit their income potential and probably limit their job prospects to entry-level jobs. Even entry-level jobs require a certain commitment to show up on time, a willingness to learn, and some basic skills — often those obtained through the discipline of earning a high school diploma. Recent studies have shown that one-third of welfare recipients are functionally illiterate, struggling to perform the simplest of reading, writing and quantitative tasks.[15] These same studies also show that government intervention is often counterproductive for the less skilled and less educated. Brandon (1995) demonstrated that minimum wage hikes actually increase durations on welfare by more than 40 percent. Following wage hikes, welfare recipients were unable to compete with more qualified job applicants drawn into the workforce by the higher mandated wages.[16]

It is plausible that Medicaid acts in a similar way across skill groups. The Medicaid expansions raise the income limit to receive health insurance, but those responding to the expansions must still earn more than the initial AFDC limit. In Yelowitz (1995), the effects were quite strong among more educated women, but not among less educated women. Table 7 shows the results on *GAIN%* for those without a high school diploma and those with at least a diploma. The other covariates from Table 6 are also included in the regressions, although they are omitted from Table 7 for sake of brevity. The second row generally shows very small effects of Medicaid expansion for those not graduating from high school. Moving the income limit by 26.8 poverty points leads to a decrease in welfare participation of less than 0.3 percentage points, from a baseline participation rate of 54 percent.[17] The effects on the other labor market outcomes are also usually statistically insignificant and economically modest. In contrast, the third row shows large effects of Medicaid for the better skilled. Moving the income limit by 26.8 poverty points leads to a decline in welfare participation of 2.4 percentage points from a baseline participation rate of 25 percent. Thus, among the more educated, the Medicaid expansions accounted for nearly a 10 percent drop in the AFDC caseload between 1987 and 1996. The results for other labor market outcomes, with the exception of total family income, are also quite strong.

5.4 Robustness Checks

This section briefly explores varying the assumptions in the analysis; the results are displayed in the appendix tables. First, Appendix Table 2 explores the sensitivity to altering the set of STATE, TIME, and YOUNGEST interactions. The second row excludes the 510 STATE*TIME interactions, and instead only includes dummies for the 50 states and 10 time periods. The results go in similar directions to the baseline, but are substantially smaller in magnitude. For example, the estimated effects on AFDC and labor force participation are around 60 percent as large as the baseline. This difference suggests that STATE*TIME interactions — such as changing economic conditions or welfare policy within a state — are correlated with the implementation of the Medicaid expansions. Without these interactions, the effect of

Medicaid appears to be understated. The third row includes both the 510 STATE*TIME interactions and the 18 TIME*YOUNGEST interactions. The results are almost identical to the baseline; evidently including STATE*TIME interactions and dummies for YOUNGEST age are sufficient.

Appendix Table 3 modifies the child care deductions that are implicitly used in constructing *GAIN%* (through the AFDC breakeven level, AFDC%). Three alternate scenarios are shown: including expenses for all children under seventeen, for all children under six, and for no children. As childcare expenses are incorporated, the AFDC breakeven level goes up, and *GAIN%* goes down. The table shows that regardless of assumptions regarding childcare expenses, the substantive conclusions on the Medicaid expansions remain the same.

Finally, Appendix Table 4 splits the sample into two halves — the calendar years 1987 to 1991, and 1992 to 1996. Federal mandates, which were enacted starting in April 1990, absorbed much of the variation across states (see Table 3). It appears that the Medicaid expansions had the strongest effect at the beginning — the coefficient estimates from 1987 to 1991 are approximately double that of the later period.

6. Conclusions

This study has examined the effects of Medicaid on labor supply between 1987 and 1996. The results, consistent with Yelowitz (1995), show significant effects of expanding health insurance on the decision to leave welfare and enter the labor force. The effects were strongest for those with at least a high school diploma, suggesting that some minimum level of skill is necessary for the expansions to be effective (at least in terms of labor supply). The expansions also had the greatest impact before the Federal mandates of 1990 and 1991, though they still had some impact afterwards.

These findings have implications on the new State Children's Health Insurance Program initiative. This program moves beyond the Federal mandates, and expands Medicaid higher up the income distribution and to families with older children. The findings in this paper offer a mixed message in terms of S-CHIP's impact on the labor market. Because the expansions in Medicaid already offer coverage to 100 to 133 percent of the poverty line for most children, the higher income limits are likely to benefit only the highest skilled of welfare recipients. Moreover, the effects of Medicaid have diminished over time, also reducing the effect on the labor market.

Endnotes

[1] Throughout the paper, the cash program will be referred to as AFDC, because the analysis extends through 1996.

[2] Although AFDC eligibility ends at around $8,000, the entire family still receives Medicaid at $9,000 after leaving AFDC. See the notes in Table 1 for more detail.

[3] There is not a consensus on how to value health insurance. Some researchers would "deflate" the average expenditure by a certain percentage because health insurance is not necessarily income -- providing a good in-kind might lead to overconsumption of that good. On the other hand, others would attach a higher valuation because Medicaid provides insurance against a bad health shock. For example, Rust and Phelan (1997) argue that the combination of significant individual risk aversion and a long tailed distribution of health care expenditures implies that there is a significant security value for older individuals to remain employed until they are eligible for Medicare. A similar argument could be made for female heads, in which case the $3,307 average expenditure understates the value of the health insurance.

[4] The income limit for children in single-parent families who were ineligible for the Medicaid expansions would be determined by AFDC.

[5] Poverty levels vary depending on family size. In 1998, for example, the poverty line was $13,650 for a family of three, $16,450 for a family of four, $19,250 for a family of five, and increased in $2,800 increments for larger families. The poverty lines are somewhat higher in Alaska and Hawaii. Thus, a Medicaid expansion to 133 percent of poverty would mean different dollar increases depending on family size.

[6] See Hearne (1998) for a detailed discussion of Title XXI.

[7] Health Care Financing Administration (1998).

[8] In the appendix tables, I show that the results are robust to defining child care expenses in different ways. Specifically, I modify AFDC% (and hence, GAIN%) for the following scenarios: no child care expenses, child care expenses for children through age five, and child care expenses for children through age seventeen. All three modifications give substantively similar answers.

[9] With a full set of 510 STATE*TIME dummies, both of the main effects (STATE dummies entered alone and TIME dummies entered alone) are completely subsumed.

[10] This study follows previous ones by focusing on female heads. Not many single male-headed households with children exist, and it is common for researchers to ignore them (Moffitt, 1992). To verify this assertion, I went back to the original CPS data, used exactly the same screens as in Appendix Table 1, except for changing the screen on line two to "Male headed household." In contrast to the final sample of 34,665 female heads, the sample consisted of 6,186 male heads. This is much smaller, but not trivial. The data show a mere 4.4% of single male heads participated in AFDC, compared with 31.7% of single female heads. The male heads also have labor force participation rates exceeding 90%, and average earnings of $28,268 in real 1996 dollars. The female heads have labor force participation rates of 70%, and average earnings of $13,987. Thus, there are few male heads who are at risk for AFDC participation.

[11] Author's tabulations of CPS data.

[12] The 1996 poverty lines are obtained from Federal Register, 1996.

[13] There are 18 categories for youngest child's age and 510 categories for state*time interactions. The final dummy variable for each set is subsumed in the constant term.

[14] The 2.03 percentage point decrease in AFDC participation is obtained by multiplying the probability derivative, which is equal to -0.076, by the change in GAIN% over time, which is equal to 0.268. The estimates for labor force participation are obtained in a similar fashion. Hours of work is computed as follows. Multiply the change in GAIN% (0.268) by the coefficient on hours (0.167), giving a change of 0.044. Since hours of work was divided by 10 (to reduce the number of zeros in the table), this is actually a change of 0.44 hours per week, from a baseline of 26.4 hours per week. For total income, multiply 0.268 by the coefficient of 0.764, giving a change of 0.205. Since income is divided by 1000, this is a change of $205 (although it is statistically insignificant).

[15] Employment Policies Institute, 1997.

[16] Brandon, 1995

[17] The term "poverty points" means moving the Medicaid notch by some percentage of the poverty line. For example, moving the notch from 100 percent of poverty to 133 percent would be 33 poverty points. Note that the actual dollar amount depends on family size and year.

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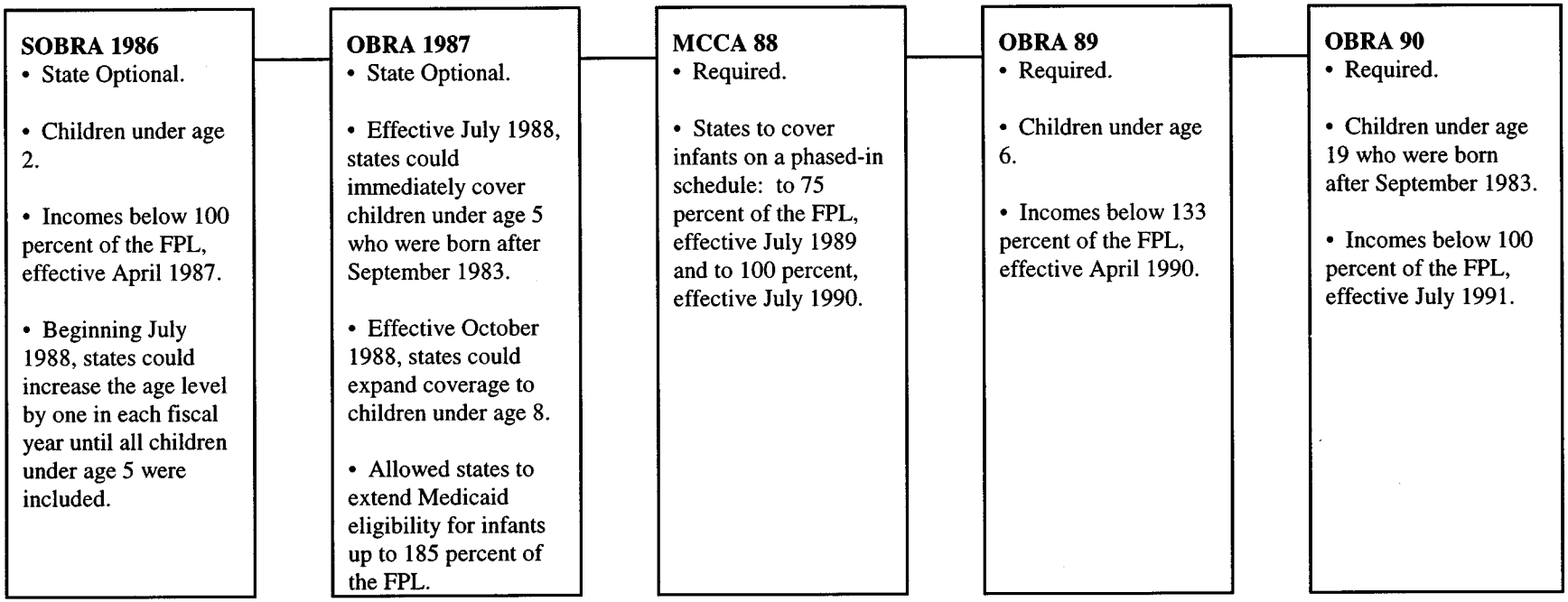
Table 1: Earnings and Benefits for a Mother with Two Children with Daycare Expenses After Four Months on the Job (January 1996) — Pennsylvania

Earnings	EITC	AFDC	Food Stamps	Medicaid $3,307	Social Security	Federal Income Tax	State Income Tax	Work Expenses	Total Income
0	0	5,052	2,722	Yes	0	0	0	0	11,081
2,000	800	4,892	2,410	Yes	153	0	0	600	12,656
4,000	1,600	3,292	2,530	Yes	306	0	0	1,200	13,223
5,000	2,000	2,492	2,590	Yes	383	0	0	1,500	13,506
6,000	2,400	1,692	2,650	Yes	459	0	0	1,800	13,790
7,000	2,800	892	2,710	Yes	536	0	0	2,100	14,073
8,000	3,200	0	2,798	Yes	612	0	0	2,400	14,293
9,000	3,556	0	2,618	Yes	689	0	0	2,700	15,092
10,000	3,556	0	2,438	No	765	0	0	3,000	12,229
15,000	2,842	0	1,538	No	1,148	0	420	4,200	13,612
20,000	1,789	0	0	No	1,530	0	560	5,200	14,499
30,000	0	0	0	No	2,295	1,628	840	5,400	19,837
50,000	0	0	0	No	3,825	5,187	1,400	5,400	34,188

Source: U.S. House of Representatives, 1996.

1. Medicaid is valued at its average expenditure in Pennsylvania for an AFDC family with one adult and two children: $919 per child, and $1,469 per adult. The total is therefore $3,307 for this family.
2. AFDC benefits assume these deductions: $120 monthly standard allowance (which would drop to $90 after 1 year on the job) and child care costs equal to 20 percent of earnings, up to maximum of $350 for two children.
3. Food stamps assumes these deductions: 20 percent of earnings, $134 monthly standard deduction and child care costs equal to 20 percent of wages, up to maximum of $320 for two children.
4. Federal and state taxes assume head of household tax rates in effect for 1996. The dependent care tax credit reduces tax liability at earnings of $15,000 and above.
5. Work expenses assumed to equal 10 percent of earnings up to maximum of $100 monthly, plus child care costs equal to 20 percent of earnings up to a maximum of $350 for two children.
6. Family would qualify for Medicaid at $8,000 of earnings because the mother, by law, would be deemed still an AFDC recipient, even though no AFDC would be paid; her calculated benefit would be below the minimum amount ($10 monthly) payable.
7. Family would qualify for Medicaid for 12 months after leaving AFDC with $9,000 in earnings under the 1988 Family Support Act. State must offer Medicaid to all children up to age 6 whose family income is not above 133 percent of the Federal poverty guideline (ceiling of $17,290 for a family of three in 1996) and to children over age 6 born after September 30, 1983 (up to age 10 years and 4 months in January 1996), whose family income is below the poverty guideline ($12,600 for a family of three).

Table 2: Time Line of Federal Medicaid Legislation for Children



Key:
SOBRA = Sixth Omnibus Reconciliation Act
OBRA = Omnibus Reconciliation Act
MCCA = Medicare Catastrophic Care Act
FPL = Federal poverty line.
Source: Intergovernmental Health Policy Project.

Table 3: State Medicaid and Income Eligibility Thresholds for Children

	January 1988		December 1989		December 1991		December 1993	
State	Age	Medicaid	Age	Medicaid	Age	Medicaid	Age	Medicaid
Alabama			1	185	8	133	10	133
Alaska			2	100	8	133	10	133
Arizona	1	100	2	100	8	140	12	140
Arkansas	2	75	7	100	8	185	10	133
			5	185	8	185	10	200
Colorado			1	75	8	133	10	133
Connecticut	0.5	100	2.5	185	8	185	10	185
Delaware	0.5	100	2.5	100	8	160	18	185
D.C.	1	100	2	100	8	185	10	185
Florida	1.5	100	5	100	8	150	10	185
Georgia	0.5	100	3	100	8	133	18	185
Hawaii			4	100	8	185	10	185
Idaho			1	75	8	133	10	133
Illinois			1	100	8	133	10	133
Indiana			3	100	8	150	10	150
Iowa	0.5	100	5.5	185	8	185	10	185
Kansas			5	150	8	150	10	150
Kentucky	1.5	100	2	125	8	185	10	185
Louisiana			6	100	8	133	10	133
Maine			5	185	8	185	18	185
Maryland	0.5	100	6	185	8	185	10	185
Mass.	0.5	100	5	185	8	185	10	200
Michigan	1	100	3	185	8	185	10	185
Minnesota			6	185	8	185	18	275
Mississippi	1.5	100	5	185	8	185	10	185
Missouri	0.5	100	3	100	8	133	18	185
Montana			1	100	8	133	10	133
Nebraska			5	100	8	133	10	133
Nevada			1	75	8	133	10	133
New Hamp.			1	75	8	133	10	170
New Jersey	1	100	2	100	8	185	10	300
New Mexico	1	100	3	100	8	185	10	185
New York			1	185	8	185	12	185
N. Carolina	1.5	100	7	100	8	185	10	185
N. Dakota			1	75	8	133	10	133
Ohio			1	100	8	133	10	133
Oklahoma	1	100	3	100	8	133	10	150
Oregon	1.5	85	3	100	8	133	10	133
Pennsylvania	1.5	100	6	100	8	133	10	185
Rhode Island	1.5	100	6	185	8	185	10	185
S. Carolina	1.5	100	6	185	8	185	10	185
S. Dakota			1	100	8	133	10	133
Tennessee	1.5	100	6	100	8	185	10	185
Texas			3	130	8	185	10	185
Utah			1	100	8	133	10	133
Vermont	1.5	100	6	225	8	225	17	225
Virginia			1	100	8	133	18	133
Washington	1.5	100	8	185	8	185	18	185
West Virginia	0.5	100	6	150	8	150	18	150
Wisconsin			1	130	8	155	10	155
Wyoming			1	100	8	133	10	133

Notes: The age limit represents the oldest that a child could be (at a given point in time) and still be eligible. Medicaid represents the Medicaid income limit for an infant (the maximum for an older child is less). Sources: Yelowitz (1995, 1997, 1998), Intergovernmental Health Policy Project (various editions), and National Governor's Association (various editions).

Table 4: Number of States Going Beyond Maximum Guidelines for Eligibility Using "State-Only" Funds, Section 1902(r)(2) of the Social Security Act, Hcfa Waivers

	Pregnant women	Infants	Children
January 1993	4	7	11
July 1993	8	7	19
January 1994	7	6	17
July 1994	8	7	17
February 1995	8	7	21
August 1995	6	6	23
February 1996	6	6	28

Note: Source of these numbers is the NGA. Washington DC usually not included.

Table 5: Summary Statistics

	Full Sample	High School Dropouts	High School or Beyond
	(1)	(2)	(3)
GAIN%	10.3 (23.6)	9.3 [0.02]	10.6 [.01]
Head's AFDC participation	.32	.54 [.01]	.25 [.01]
Head's LF Participation	.70	.43 [.01]	.78 [.01]
Head's hours per week	26.4 (19.2)	15.3 [.21]	29.9 [.11]
Total family income (expressed in 1996 dollars)	$19,266 (18,316)	$10,465 [107]	$22,055 [120]
Fraction of income from welfare	.25	.47 [.01]	.17 [.01]
Head's age	34.9 (8.7)	34.6 [.1]	35.0 [.1]
Head's education<12	.24	1.00 [0]	.00 [0]
Head's education=12	.40	.00 [0]	.53 [.01]
Head's education>12	.36	.00 [0]	.47 [.01]
Head is white	.68	.64 [.01]	.69 [.01]
Head is black	.28	.30 [.01]	.27 [.01]
Head is nonblack, nonwhite	.04	.05 [.01]	.04 [.01]
Head never married	.31	.41 [.01]	.27 [.01]
Head separated	.20	.25 [.01]	.18 [.01]
Head divorced	.43	.26 [.01]	.48 [.01]

Table 5: Summary Statistics Cont...

Head widowed	.07	.09 [.01]	.06 [.01]
Number of children	1.8 (1.0)	2.2 [.01]	1.7 [.01]
Youngest child's age	7.4 (5.1)	6.6 [.06]	7.7 [.03]
Central city indicator	.35	.46 [.01]	.31 [.01]
Number of observations	34,665	8,342	26,323

Notes: Percentages may not add up due to rounding. Standard deviations in parentheses in column (1), standard errors in brackets in columns (2) and (3). All of the variable means for "high school dropouts" are statistically different from those for "high school and beyond" at any conventional level. The standard errors in columns (2) and (3) are rounded up to .01 if they are not exactly zero.

Table 6: Regression Results for Full Sample

	Head's AFDC		Head's LFP		Head's hours /10	Total family income /1000	Fraction of income from welfare
	(1)		(2)		(3)	(4)	(5)
GAIN%/100	-.228 (.060)	*-.076 (.020)*	.182 (.059)	*.059 (.019)*	.167[a]	.764[b]	-.067 (.013)
Head's age	-.091 (.007)	*-.030 (.002)*	.046 (.007)	*.015 (.002)*	.085 (.008)	1.242 (.074)	-.014 (.002)
Head's age^2/100	.098 (.009)	*.033 (.003)*	-.079 (.008)	*-.026 (.003)*	-.128 (.010)	-1.345 (.095)	.015 (.002)
Head's education<12	.849 (.023)	*.306 (.008)*	-.961 (.022)	*-.344 (.008)*	-1.262 (.026)	-14.565 (.242)	.254 (.005)
Head's education=12	.309 (.019)	*.104 (.007)*	-.332 (.019)	*-.110 (.006)*	-.374 (.022)	-8.474 (.198)	.081 (.004)
Head is black	.241 (.021)	*.082 (.007)*	-.104 (.021)	*-.034 (.007)*	-.110 (.025)	-3.191 (.229)	.038 (.005)
Head is nonblack, nonwhite	.170 (.041)	*.059 (.015)*	-.189 (.040)	*-.065 (.014)*	-.169 (.048)	-2.012 (.442)	.041 (.009)
Head never married	.827 (.044)	*.292 (.016)*	.070[b] (.036)	*.023 (.012)*	.194 (.044)	-4.414 (.405)	.187 (.008)
Head separated	.591 (.043)	*.212 (.016)*	.223 (.035)	*.069 (.010)*	.379 (.043)	-4.487 (.396)	.108 (.008)
Head divorced	.468 (.042)	*.157 (.014)*	.431 (.033)	*.137 (.010)*	.675 (.040)	-.610[b] (.368)	.080 (.008)
Central city	.169 (.019)	*.057 (.007)*	-.182 (.019)	*-.060 (.006)*	-.210 (.022)	-.717 (.205)	.058 (.004)
Other controls	Dummies for number of children, family members, youngest child's age (18 categories) and state*time interactions (510 categories). In addition, the number of children in each age bracket from age zero to age seventeen is entered linearly.						

Notes: Observations = 34,665. March 1988-1997 CPS. Columns (1)-(2) are probits (probability derivatives in italics), columns (3)-(5) are OLS. Coefficients without a superscript are significant at the 1% level. The superscript "a" indicates that a coefficient is statistically significant at the 5% level but not the 1% level, and the superscript "b" indicates that it is statistically insignificant.

Table 7: Stratifying by Educational Attainment

	Head's AFDC		Head's LFP		Head's hours /10	Total family income /1000	Fraction of income from welfare
	(1)		(2)		(3)	(4)	(5)
Row 1: Baseline (N=34,665)							
GAIN%/100	-.228	*-.076*	.182 (.059)	*.059 (.019)*	.167[a]	.764[b]	-.067
	(.060)	*(.020)*			(.069)	(.635)	(.013)
Row 2: High school dropouts (N=8,342)							
GAIN%/100	-.022[b]	*-.009*	.115[b]	*.045 (.046)*	.039[b]	2.139	-.036[b]
	(.121)	*(.048)*	(.117)		(.152)	(.741)	(.033)
Row 3: Completed high school or college (N=26,323)							
GAIN%/100	-.329	*-.091*	.222	*.058*	.214	.299[b]	-.076
	(.072)	*(.020)*	(.069)	*(.018)*	(.078)	(.801)	(.014)
Other controls	Dummies for number of children, family members, youngest child's age and state*time interactions. In addition, the number of children in each age bracket from age zero to age seventeen is entered linearly.						

Notes: March 1988-1997 CPS. Columns (1)-(2) are probits (probability derivatives in italics), columns (3)-(5) are OLS. Coefficients without a superscript are significant at the 1% level. The superscript "a" indicates that a coefficient is statistically significant at the 5% level but not the 1% level, and the superscript "b" indicates that it is statistically insignificant.

Appendix: Construction of AFDC% Variable

This appendix explains the construction of AFDC%. This example follows the U.S. House of Representatives (1993a, 1996). Under AFDC, each state establishes a "need standard" and a "payment standard" (which may equal to or lower than the need standard); these standards are adjusted by family size. To receive AFDC payments, a family must pass two income tests, a gross income test and a countable income test. Families with gross incomes that exceed 185 percent of the State's need standard are ineligible for AFDC. Benefits are generally computed by subtracting countable income (i.e., gross income less certain amounts known as disregards) from the payment standard. The maximum benefit, which is the amount paid to a family with no other income, may be lower than the payment standard.

The gross income test is

(A1) Gross Income ≤ (1.85*Need Standard).

To be eligible for an actual payment, the family's counted income also be below the State's payment standard. Counted ("net") income test:

(A2) Net Income = (Gross Income-Deductions) ≤ Payment Standard,

which implies,

(A3) Gross Income ≤ (Payment Standard+Deductions).

AFDC% is then determined by minimum of equations (A1) and (A3):

(A4) AFDC%=min{1.85*Need Standard, Payment Standard+Deductions}/POV

where POV stands for the poverty limit in dollars. Equation (A3) is further complicated because the treatment of deductions has changed over time, and varies by the number of months that a recipient has been off of welfare. To illustrate this, the following table taken from the U.S. House of Representatives (1993a), illustrates the calculation on an AFDC payment during different regimes. To calculate the Medicaid notch, we would find the level of gross earnings such that net countable income is zero.

Calculation of Monthly AFDC Benefits for a Worker with Low Earnings Under DEFRA and Current Law

	DEFRA (1984)			Current law (FSA)		
	First 4 months	After 4 months	After 12 months	First 4 months	After 4 months	After 12 months
Income						
Gross Earnings	581	581	581	581	581	581
EITC	...	...	...	...	...	...
Gross income	581	581	581	581	581	581
Disregards						
Initial Disregards[1]	-105	-105	-75	-120	-120	-90
One-third of rest	(2)	(2)	(2)	-154	(2)	(2)
Child care	-100	-100	-100	-100	-100	-100
One-third of rest	-125	(2)	(2)	(2)	(2)	(2)
Other expenses	(2)	(2)	(2)	(2)	(2)	(2)
Total disregards	330	205	175	374	220	190
Net Countable Income	251	376	406	207	361	391
AFDC benefits:						
$680 payment standard	429	304	274	473	319	289
$367 payment standard	116	0	0	160	6[(4)]	0

1 DEFRA (1984): Standard work expense deduction of $75 plus $30 disregard in first 12 months. FSA (1988): Standard work expense deduction of $90 plus $30 disregard in first 12 months. The maximum child care deduction was $160 before the FSA, and $175 for children over age one after. For children under age two, it was $200.
2 Not Applicable
3 Itemized work expenses including payroll deductions and transportation.
4 To receive an AFDC check, the benefit amount must equal at least $10.
Note: The Earned Income Tax Credit (EITC) was counted as income in the early 1980s, but not in the years shown.

Consider the column containing information on the first 4 months after the Family Support Act is enacted. To calculate the income level where Medicaid eligibility is lost (based on the payment standard), we find the level of net countable income that equals the payment standard.

(A5) (Gross Income-Initial Disregards) - 1/3*(Gross Income-Initial Disregards) - Childcare = Payment Standard

Solving this in terms of Gross Income gives us:
(A6) Gross Income = 3/2*(Payment Standard+Childcare) + Initial Disregards.

For the $680 payment standard, and $100 childcare costs, the Medicaid notch is $1,290 per month based on the payment standard. If the need standard is greater than $697 (=1290/1.85) then the payment standard binds. Otherwise the Medicaid notch is simply given by equation (A1). This corresponds to equation (2) in the text. One could perform this same exercise for first 4 months after the Deficit Reduction Act.

Appendix Table 1: Sample Screen from March Current Population Survey, 1988 to 1997

	March 1988	March 1989	March 1990	March 1991	March 1992	March 1993	March 1994	March 1995	March 1996	March 1997
1. Initial number of person records	155,980	144,687	158,079	158,477	155,796	155,197	150,943	149,642	130,476	131,854
2. Female headed household	32,651	30,018	33,487	34,299	34,392	34,378	34,118	33,478	29,809	30,197
3. Family has related children under 18	16,387	14,726	16,555	17,116	17,283	17,509	17,532	17,211	15,432	15,320
4. Between 2 and 9 family members	16,260	14,664	16,495	16,982	17,214	17,421	17,448	17,091	15,320	15,256
5. Head between ages 18 and 64	15,851	14,344	16,112	16,626	16,882	17,057	17,027	16,672	14,989	14,918
6. No foster children, nonrelatives, partners, or roommates.	15,262	13,795	15,488	15,873	16,117	16,162	16,202	15,938	14,354	14,278
7. No elderly household members	15,056	13,622	15,236	15,683	15,876	15,899	15,908	15,724	14,119	14,010
8. No imputed values for demographic and income variables	13,603	12,377	13,627	14,246	14,421	14,533	13,502	13,816	11,563	11,132
9. Observation is head of household	3,961	3,653	4,016	4,180	4,232	4,274	4,001	4,044	3,413	3,336
10. All children in household are related to head	3,668	3,371	3,698	3,849	3,882	3,915	3,644	3,722	3,115	3,055
11. Head is widowed, divorced, separated, or never married.	3,550	3,254	3,570	3,677	3,745	3,774	3,515	3,589	3,023	2,968

Notes: Total number of observations is 34,665.

Appendix Table 2: Modifying the Set of Interactions

	Head's AFDC		Head's LFP		Head's hours /10	Total family income /1000	Fraction of income from welfare
	(1)		(2)		(3)	(4)	(5)
Row 1: Baseline							
GAIN%/100	-.228	*-.076*	.182	*.059*	.167	.764	-.067
	(.060)	*(.020)*	(.059)	*(.019)*	(.069)	(.635)	(.013)
Row 2: Include main effects for STATE and TIME, and omit STATE*TIME interactions							
GAIN%/100	-.123	*-.041*	.102 (.043)	*.033 (.014)*	.094 (.050)	.454 (.457)	-.040
	(.043)	*(.014)*					(.009)
Row 3: Include both STATE*TIME and TIME*YOUNGEST interactions							
GAIN%/100	-.221	*-.073*	.148	*.048*	.174	1.293	-.065
	(.064)	*(.021)*	(.062)	*(.020)*	(.073)	(.674)	(.014)
Other controls	Dummies for number of children, and family members. In addition, the number of children in each age bracket from age zero to age seventeen is entered linearly.						

Notes: Observations = 34,665. March 1988-1997 CPS. Columns (1)-(2) are probits (probability derivatives in italics), columns (3)-(5) are OLS.

Appendix Table 3: Modifying the Assumptions on Childcare Expenses

	Head's AFDC		Head's LFP		Head's hours /10	Total family income /1000	Fraction of income from welfare
	(1)		(2)		(3)	(4)	(5)
Row 1: Baseline							
GAIN%/100	-.228 (.060)	*-.076 (.020)*	.182 (.059)	*.059 (.019)*	.167 (.069)	.764 (.635)	-.067 (.013)
Row 2: Expenses for ages 0 to 17							
GAIN%/100	-.232 (.064)	*-.077 (.021)*	.201 (.062)	*.065 (.020)*	.172 (.074)	.683 (.678)	-.073 (.014)
Row 3: Expenses for ages 0 to 5							
GAIN%/100	-.156 (.052)	*-.052 (.017)*	.141 (.050)	*.046 (.016)*	.153 (.059)	.860 (.545)	-.059 (.011)
Row 4: No childcare expenses							
GAIN%/100	-.144 (.043)	*-.048 (.014)*	.139 (.041)	*.045 (.013)*	.139 (.049)	.414 (.447)	-.052 (.009)
Other controls	Dummies for number of children, family members, youngest child's age and state*time interactions. In addition, the number of children in each age bracket from age zero to age seventeen is entered linearly.						

Notes: Observations = 34,665. March 1988-1997 CPS. Columns (1)-(2) are probits (probability derivatives in italics), columns (3)-(5) are OLS.

Appendix Table 4: Examining GAIN% by Time Period

	Head's AFDC		Head's LFP		Head's hours /10	Total family income /1000	Fraction of income from welfare
	(1)		(2)		(3)	(4)	(5)
Row 1: Baseline							
GAIN%/100	-.228 (.060)	*-.076 (.020)*	.182 (.059)	*.059 (.019)*	.167 (.069)	.764 (.635)	-.067 (.013)
Row 2: 1987-1991 Calendar Years							
GAIN%/100	-.424 (.157)	*-.142 (.053)*	.237 (.154)	*.078 (.050)*	.335 (.179)	4.106 (1.540)	-.126 (.035)
Row 3: 1992-1996 Calendar Years							
GAIN%/100	-.207 (.070)	*-.068 (.023)*	.134 (.068)	*.043 (.022)*	.143 (.081)	.940 (.786)	-.055 (.015)
Other controls	Dummies for number of children, family members, youngest child's age and state*time interactions. In addition, the number of children in each age bracket from age zero to age seventeen is entered linearly.						

Notes: Observations = 34,665. March 1988-1997 CPS. Columns (1)-(2) are probits (probability derivatives in italics), columns (3)-(5) are OLS.

Figure One

Budget Set For Pennsylvania Recipient
Ineligible For Expansion

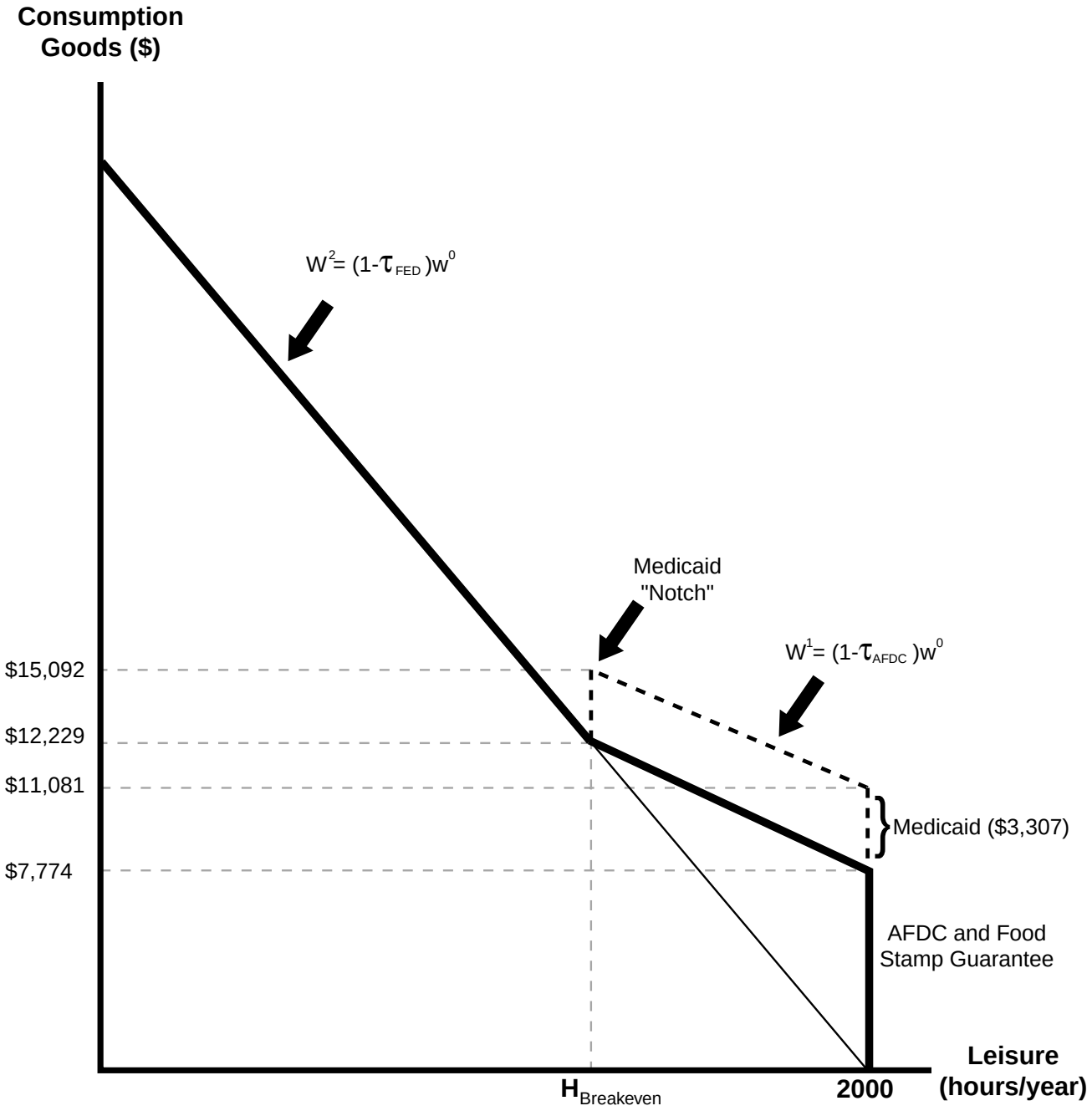
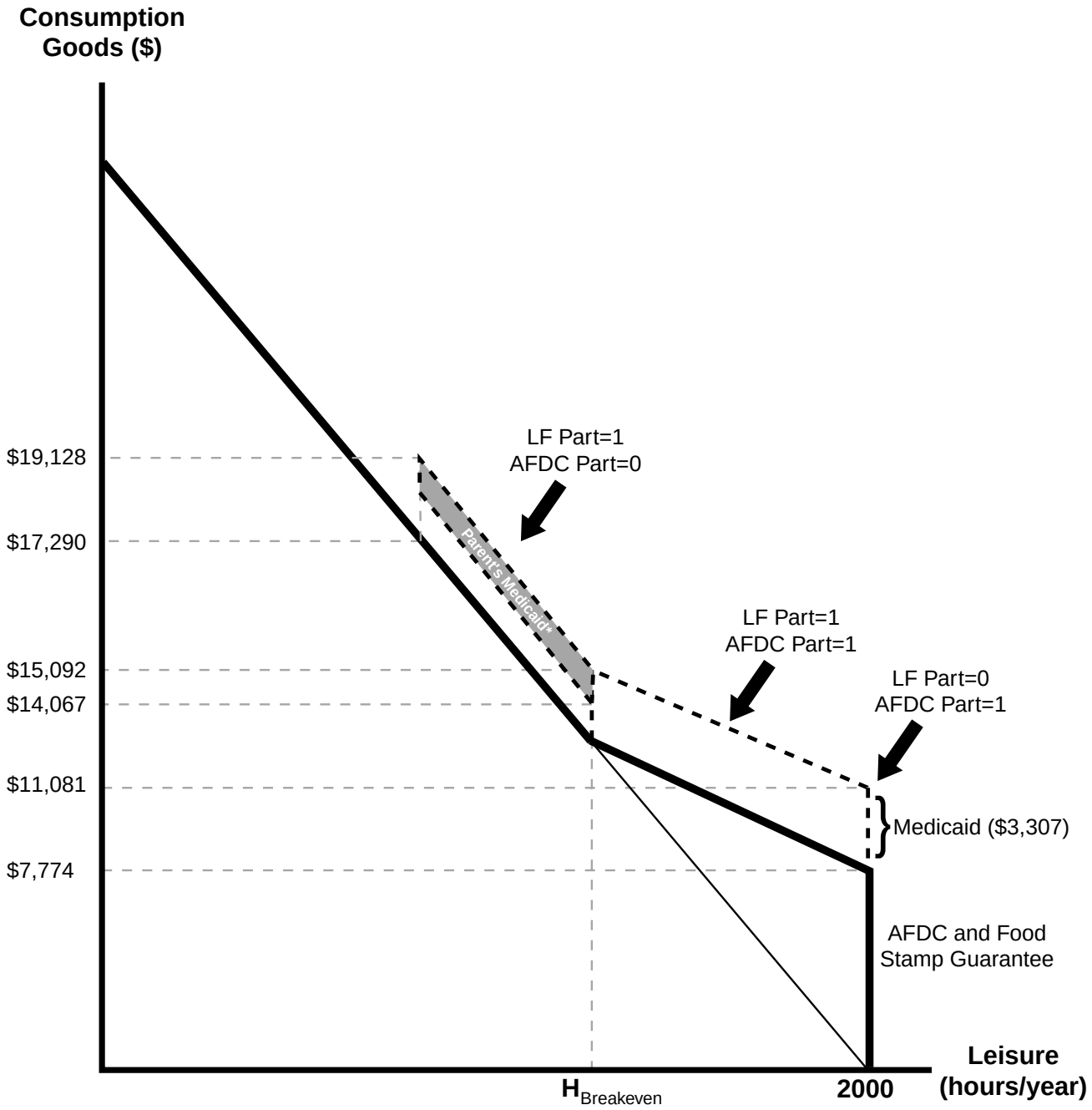


Figure Two

Budget Set For Pennsylvania Recipient
Eligible For Expansion



* The family would qualify for Medicaid for 12 months after leaving AFDC with $11,785 of income ($9,000 in earnings) under the Family Support Act. The Medicaid expansions would cover the children as long as the family's income was under $17,290. The parents would only be covered in the grey area until 12 months was up.

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