Economic Research Initiative on the Uninsured
Working Paper Series

MEDICAID AND WORK DECISIONS OF MARRIED WOMEN

Aaron Yelowitz
University of Kentucky

ERIU Working Paper 21
http://www.umich.edu/~eriu/pdf/wp21.pdf

Economic Research Initiative on the Uninsured
University of Michigan
555 South Forest Street, 3rd Floor
Ann Arbor, MI 49104-2531

July 2003

The author is grateful for support from the Economic Research Initiative on the Uninsured. The author is an Associate Professor at the University of Kentucky. He may be reached at: University of Kentucky, Department of Economics, 335 Business and Economics Building, Lexington, KY 40506-0034. He may also be reached by email at aaron@uky.edu, or by telephone at 859-257-7634. His web page is http://gatton.uky.edu/Faculty/yelowitz. All errors are the responsibility of the author. The data and copies of the "Stata SE" computer programs used in the preparation of this paper are available from the author.

Abstract

There is relatively little evidence on the effect of health insurance on married women's labor supply in the United States. The identification strategies of the studies that exist tend to take the husband's characteristics as exogenous. This is potentially problematic if husbands and wives make joint labor supply and job choice decisions. The aim of this study is to fill this gap in the literature by using an arguably credible source of legislative variation: expansions in the Medicaid program since the mid-1980s. The study uses data from the Current Population Survey and the Survey of Income and Program Participation, spanning the years 1987 to 2000. Preliminary evidence suggests the results on married women's responses is mixed: some specifications (that control for individual heterogeneity) show significant, anticipated responses to the Medicaid expansions, while other specifications do not.

1. Introduction

In the United States, the largest source of health insurance coverage for those under the age of 65 is through the employer.[1] The close link between employment and health insurance coverage potentially affects many labor market decisions. There is extensive evidence on how health insurance coverage affects the labor supply of adult men. For example, health insurance may deter job mobility because it is usually not portable from one job to the next.[2] The link to employment may also prevent early retirement, because the premiums on private plans for those between the ages of 55 to 64 are very expensive.[3] Finally, health insurance could affect hours of work per employee and total employment. Unlike the wage, health insurance is a quasi-fixed labor cost which varies with the number of workers but not the hours per worker.[4]

There is also a growing body of work on how health insurance affects single women with children. For low-income female-headed households, the U.S. welfare system provides an alternative to employer-provided health insurance through Medicaid. Recent studies have found significant effects of health insurance on the welfare and work decisions of single mothers.[5]

There is relatively little evidence, however, on the effect of health insurance on married women's labor supply in the United States. Four studies – Olson (1998), Buchmueller and Valletta

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[1] In 1992, 63.0 percent of the non-elderly population were covered by employer-based health insurance. Another 20.4 percent had coverage from other public or private plans. The remaining 16.6 percent were uninsured (U.S. House of Representatives, 1994, p. 951).

[2] Madrian (1994) examines the extent of "job lock," and finds that the non-portability of health insurance reduces the mobility of men by 25 percent. Annual job turnover decreases by 4 percentage points, from 16 percent to 12 percent.

[3] Gruber and Madrian (1995) examine the retirement behavior of men who were affected by "COBRA continuation coverage" mandates in the 1980s. These mandates, instituted by the government, allowed individuals who voluntarily left a job to continue to purchase the firm's health insurance coverage for an additional eighteen months. They find significant exits into early retirement from this continuation coverage.

[4] Cutler and Madrian (1998) find that rising health insurance costs over the 1980s increased the hours worked of those with health insurance by up to 3 percent.

[5] Early studies (Blank 1989; Winkler 1991) found relatively small effects of Medicaid. These studies measure Medicaid's value with error, however, which likely biases Medicaid's coefficient toward zero. More recent studies (Moffitt and Wolfe 1992; Yelowitz 1995) use alternative approaches to assess the effect of health insurance which are less suspectable to measurement error. Both studies find significant effects on welfare and work.

(1999), Schone and Vistnes (2000), and Wellington and Cobb-Clark (2000) – examine spousal labor supply, and generally find strong support that health insurance affects labor supply.[6] The identification strategies in these studies tend to take the husband's characteristics (e.g., whether he had employer health insurance, his earnings, and other job characteristics) as exogenous. This is potentially problematic if husbands and wives make joint labor supply and job choice decisions. As Gruber and Madrian (2001, p. 22) explain in their summary article "this literature is somewhat limited by a lack of identification strategies that are as convincing as those used in the literatures on retirement, welfare participation and ... job mobility." The aim of my study is to fill this gap in the literature by using an arguably credible source of legislative variation – expansions in the Medicaid program since the mid-1980s. Married women may respond differently than either men or single women. It is thought that married women are more sensitive to changes in after-tax wages.[7] Large labor supply elasticities, in turn, have important consequences for the effectiveness of tax policy and in deadweight loss calculations. If married women also have large responses to changes in health insurance availability, then studies that ignore health insurance may be very misleading.

2. Econometric Difficulties and Potential Solutions

The key difficulty in estimating labor supply models for women is that wages are not observed for non-working women. Moreover, non-working women are not randomly drawn from the population of all women -- instead they likely have different preferences toward work and leisure or different reservation wages than working women. Thus, ordinary least squares estimates of the elasticity of hours with respect to the wage will be biased by examining only working women. This difficulty becomes more complicated when considering the effect of health insurance on labor supply of married women in a structural model, for three reasons. First, both wages and potential

[6] Chou and Staiger (2001) the expansion of health insurance in Taiwan. The approach that they take, by using treatment and control groups defined by legislation, is similar to the approach in this paper.

[7] Eissa (1995) estimates an elasticity of labor supply with respect to the after tax wage of approximately 0.8 for married women.

health insurance are unobserved for non-working women. Second, for women who do work, we never observe their entire choice set – these women may have the option of a job with relatively high wages and no employer provided health insurance or relatively low wages with employer provided health insurance. This tradeoff in the compensation package between different jobs is quite likely because previous studies have found that health insurance coverage is paid for through reduced wages (e.g., Gruber, 1994). Third, the husband's labor supply and compensation choices cannot be taken as exogenous when modeling health insurance. Many private health insurance plans cover either one person or the entire family. Husbands and wives almost certainly coordinate their choices, and the wife's health insurance choice could change if her husband's choice changed, or vice versa.

Because of these complications, it is difficult to develop a compelling structural model for married couples that incorporates health insurance. Instead, the goal of my study is more modest: to provide reduced-form evidence on the impact of health insurance on the wife's labor supply decision. To do this, I will exploit recent changes in the availability of <u>public</u> health insurance for children from the Medicaid program. Although Medicaid is usually thought of as a program for single-parent families on Aid to Families with Dependent Children (AFDC), Medicaid's eligibility criteria were greatly broadened starting in the mid-1980s. First, children in married families could qualify for Medicaid. Second, the income limit to qualify for Medicaid was raised considerably. By 1994, many children in middle-class families were eligible for Medicaid and a considerable number took it up. In 1993, nearly 24 percent of <u>all</u> children under 18 were covered by Medicaid, up from 15 percent in 1987 (General Accounting Office, 1996).

Many consequences of these Medicaid eligibility expansions have already been studied. In a previous study, I examined the consequences of these expansions on the welfare and work choices of single women with children (Yelowitz, 1995). I found that the Medicaid expansions allowed single mothers to leave AFDC and enter the labor force. The expansions reduced AFDC participation by 1.2 percentage points between 1988 and 1991. Other studies have looked at the effects of Medicaid eligibility on Medicaid coverage, infant and child health, private insurance, and savings choices (Currie and Gruber 1996a, 1996b; Cutler and Gruber 1996; Gruber and Yelowitz 1999). No study has examined the effect of the Medicaid expansions on married women, however.

3. Some Background on the Medicaid Expansions

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 children of AFDC recipients.

Several early pieces of federal legislation, which are documented in the time line in Table 1, 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 2 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).[8] 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 under 2. 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 6. 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 6 to 100 percent of the FPL in 1991. By January 1990, 44 states and Washington D.C.

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[8] The information on the Medicaid expansions was compiled from the Intergovernmental Health Policy Project (various editions) and National Governors Association (various editions).

had expanded Medicaid by creating special income limits for pregnant women and infants. A total of 21 had raised their income thresholds above 100 percent of the FPL, and 15 raised it to 185 percent of poverty. Four states covered children to age 7, 10 states provided coverage to children to age 6, and 27 had age limits of 2 to 5.[9] 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 varied substantially.

In subsequent years, several states expanded coverage beyond the federal requirements with their own funding – mainly Washington, Vermont, and Minnesota. In 1992, a number of states started to use provisions of the Medicaid statute added by the Medicare Catastrophic Care Act of 1988, called the 1902(r)(2) option, which allowed states to use more liberal criteria than AFDC – by disregarding defined amounts of income and resources.[10] The handful of states that had expanded beyond the federal guidelines before 1992 now shifted the financing from state-only programs to Medicaid. By December 1993, 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.

Around 1995, the Health Care Financing Administration allowed states, with approval, to adopt demonstration waivers that allowed for more flexibility in the provision of services and in eligibility. These Section 1115 waivers were time-limited and subject to evaluation. Many states used this as a mechanism to move populations into managed care settings, expand eligibility, and modify benefit packages.

The Balanced Budget Act of 1997 provided a greater opportunity for states to further expand health insurance coverage for children. The legislation created the State Children's Health Insurance Program (SCHIP) under Title XXI of the Social Security Act, effective October 1, 1997. Over the five years after SCHIP was enacted, $4 billion per year was available to states for this voluntary

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[9] National Governors' Association, MCH Update, January 1990.

[10] The Medicaid Voluntary Contribution and Provider-Specific Tax Amendments of 1991 expanded the use of Section 1115 Research and Demonstration waivers to extend coverage to non-traditional Medicaid populations and expand managed care.

program. A state could expand Medicaid, develop a new program or expand an existing program to provide health insurance to uninsured children, or implement a combination of the two approaches. The funds were targeted toward children below age nineteen living in families with incomes at or below 200 percent of the FPL. The Balanced Budget Act also allowed states the option of covering all children through age eighteen living in families with incomes below the FPL.

Tables 3 illustrates the effects of these expansions for children. The table illustrates some of the program variation across the different states over time, by showing the Medicaid income eligibility limit expressed as a percentage of the FPL. This table starts with the beginning of the Medicaid expansions in 1987 and follows states through the year 2000. The tables average the statutory income limit over all months within a year and for all children within a given age bracket. Thus, an expansion in Medicaid to 100 percent of the poverty line in January would show up as "100" while an identical expansion in December would show up as $\frac{1}{12}$ of that level. Also, if the expansion only applied to some, but not all, of the children in the age bracket, then the number presented is an average of the expansion limit and "0," weighted by the number of children in each of the eligible/ineligible groups.

As Table 3 shows, the expansions were only implemented in a few states by 1987, and when averaged over all children, were quite small. By 1988, most states had expansions, and by 1989, all states did. The expansions became substantially more generous for children as a whole between 1990 and 1992, as federal mandates were implemented. As can be seen, much of the overall variation in the income limit was reduced during this period, because the federal mandates for infants and young children were often binding on most states. Starting around 1993, however, more variation in income limits starts to appear, as states move beyond the federal mandates with their own funds and HCFA waivers. The income limits gradually rise in most states between 1993 and 1997, as a result of these state-options, as well as the gradual phase-in of earlier federal mandates to older children. Between 1997 and 1999, the SCHIP program was enacted, and it is clear that it had an immediate, dramatic effect on statutory Medicaid eligibility. The income limits rose substantially in virtually every state. Consistent with the funding goals of SCHIP, many states had income limits of 200 percent of the poverty line by 1999 (equivalent to annual household income of $33,400 in 1999 for a family of four). A great deal of the cross-state variation in the income limits was diminished by 1999, however. In the year 2000, the income limits in several states increased modestly, because of revisions to their SCHIP program and the phase-in of earlier federal mandates.

These reforms 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 other parts of the Medicaid program remained quite stable. In 1991, three million children were covered by Medicaid as a result of the expansions (U.S. House of Representatives, 1993).

4. Predicted Effects of Medicaid on Labor Supply of Married Women

This section briefly outlines how Medicaid should affect the wife's labor supply, and how to incorporate different policy variables into the regression model. The married woman maximizes her utility, $U=u(L,C)$, where L is her leisure and C is her consumption of other goods. She faces an after-tax wage rate of w_F in the labor force and the price of other goods is P_C. Figures 1, 2, and 3 will illustrate the predictions that can be made from incremental changes in Medicaid policy. Initially, the wife faces the budget constraint depicted in Figure 1. I assume she is endowed with T hours of leisure, and receives non-labor income, N, which may consist of her husband's earnings or asset income. For purposes of illustration, it is assumed that her family is not covered by privately purchased or employer provided health insurance, and that her husband's labor supply and job choice decisions are exogenous. It is also assumed in the figure that the only avenue for health insurance coverage is through Medicaid. Medicaid is valued at M^1 and is means-tested at an income limit of E^1. Medicaid is not taxed for total income less than E^1, but is taken away entirely for income greater than E^1. This discrete loss in health insurance benefits, discussed in the context of single women in Yelowitz (1995), is known as the "Medicaid notch." As shown in Figure 1, this loss of Medicaid occurs when the wife works at least $\frac{E^1 - N}{w_F}$ hours in the labor force.

Figure 2 shows the effect of increasing the value of Medicaid from M^1 to M^2. This could occur for any of a number of reasons. The Medicaid expansions in the 1980s and 1990s gradually covered older children, meaning that the insurance value increased over time for families with children of different ages. In addition, to the extent that Medicaid services or access to physicians improve over time, then Medicaid's value could increase. If leisure is a normal good, then both labor force participation and hours of work are predicted to decline. Some of the women who were initially working at least $\frac{E^1 - N}{w_F}$ hours will now choose hours of work less than that, and potentially will leave the labor force (e.g., choose $L=T$) if M^2 is large relative to M^1. For women who were working less than $\frac{E^1 - N}{w_F}$ to begin with, the increase in Medicaid acts as an income effect that should decrease hours of work and labor force participation.

Figure 3 shows the effect of increasing the Medicaid income limit from E^1 to E^2, while holding Medicaid's value constant at M^1. A policy change like this increases labor force participation but has an ambiguous effect on hours of work. To understand this, we can classify women on three parts of the budget constraint: those initially working in the range $\left(\frac{E^2 - N}{w_F}, T\right]$, those initially working in the range $\left(\frac{E^1 - N}{w_F}, \frac{E^2 - N}{w_F}\right]$, and those initially working in the range $\left[0, \frac{E^1 - N}{w_F}\right]$. For women who were initially working an amount of hours greater than $\frac{E^2 - N}{w_F}$, the only possible response *if they change their behavior* is to choose hours of work somewhere in the range $\left(\frac{E^1 - N}{w_F}, \frac{E^2 - N}{w_F}\right]$. For hours of work less than $\frac{E^1 - N}{w_F}$, the possibilities on the budget constraint are unchanged relative to the initial budget constraint in Figure 1; hence, by revealed preference, a woman who was not initially choosing those work/leisure bundles would not choose those points after the income limit increases from E^1 to E^2. Although their hours of work fall, they do not exit the labor force. For women initially choosing to work in the range $\left(\frac{E^1 - N}{w_F}, \frac{E^2 - N}{w_F}\right]$, their hours should decrease due to the income effect of the Medicaid expansions, but will not fall below $\frac{E^1 - N}{w_f}$ – again, by revealed preference, these work/leisure bundles were not preferred before the income limit increased, so they will not be preferred afterwards. Similar to the first group, hours of work fall but these women do not exit the labor force. Finally, for women initially collecting Medicaid and working less than $\frac{E^1 - N}{w_F}$, hours of work and labor force participation should increase. Again, the only possible response *if they change their behavior* is to move into the hours range between the old and new Medicaid income limits. All of these bundles are where the women are in the labor force and working more hours than the they initially were. To the extent that some women who initially chose $L=T$ change their behavior, then labor force participation increases. In aggregate, the effect on hours of work is ambiguous because the hours of work declines for the first two groups and increases for the last group. In addition, the aggregate effect on labor force participation is positive: the first two groups will not leave the labor force, while the third group increases labor force participation.

In summary, raising the value of Medicaid (e.g, by expanding eligibility to older children) will reduce labor force participation and raising the Medicaid income limit (conditional on Medicaid's value being held constant) will increase it. For many sets of preferences, the budget constraint suggests that the net effect of the Medicaid expansions is to reduce labor supply: hence the negative effect of Medicaid value should be larger in absolute terms than the positive effect of the income limit.

One could modify the budget constraint to incorporate employer-provided health insurance for the woman. One possibility is that employer-provided health insurance is given for full-time jobs, but not for part-time jobs. In this case, the wife's budget constraint would jump upward when she works full-time. When she works full time, her household also receives employer-provided health insurance. With such a budget constraint, we would expect to see many women out of the labor force or working full-time, because of the discontinuities in the budget constraint. Put differently, some women may choose full-time work so they can get health insurance for their family.

Another possibility is to add a wage/health insurance tradeoff by having full time jobs with employer-provided health insurance but paying lower (marginal) wages. Having employers offer lower marginal wages would be consistent with Gruber's (1994) findings about health insurance mandates and wage shifting. Regardless of how employer-provided health insurance is modeled however, the following predictions are likely to emerge: everything else constant, increasing the value of Medicaid will reduce hours of work and labor force participation; and increasing the Medicaid income limit increases labor force participation, or at least the attractiveness of working in the labor force at a job without employer health insurance.

5. Identification Strategy and Empirical Implementation

The reforms in the Medicaid program create "treatment" and "control" groups by providing variation in 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 implemented a Medicaid expansion for children up to age 5, while New York did not. The "treatment" group, in all cases, is families in California in 1989 with young children. A potential estimate of Medicaid's effect on labor force participation uses mothers with older children in California as a control group. Let $LFP_{j,t,k}$ stand for the average labor force participation rate for married women, where *j* indexes states, *t* indexes time, and *k* indexes child's age. Therefore $LFP_{CA,1989,5}$ and $LFP_{CA,1989,6}$ represent the labor force participation rates for married women in California in 1989 with 5- and 6-year-olds, respectively. The total impact of the Medicaid law change could be measured by the difference ($LFP_{CA,1989,5}$-$LFP_{CA,1989,6}$), which is hypothesized to be negative from the discussion in Section 4.

An important objection to this estimate is that the two groups may not be strictly comparable. Mothers with 5-year-olds may face higher child care costs than mothers with 6-year-olds, which may independently reduce labor force participation. Two other "first difference" estimates instead use the across-state and over-time dimensions. By comparing the participation rates for households with 5-year-olds in 1989 across California and New York, we eliminate the previous source of bias.

Another estimate of Medicaid's impact on labor force participation would therefore be ($LFP_{CA,1989,5}$-$LFP_{NY,1989,5}$). As a final alternative, we could examine changes in labor force participation over time within California, that is ($LFP_{CA,1989,5}$-$LFP_{CA,1988,5}$). 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 in California (or different in the years 1988 and 1989), then this would surely affect the mother's labor force participation, and I would incorrectly attribute this effect to Medicaid.

In the empirical work, I will use all three sources of variation and account for the main effects of the law by including STATE, TIME, and YOUNGEST age dummy variables. In addition, some of the specifications also include interactions between STATE and TIME, STATE and YOUNGEST, and TIME and YOUNGEST. I define a household as eligible for the Medicaid expansions if, with zero income, their youngest child would qualify based on the state, time, and age variation. I do not use any aspect of the family's income, which is endogenous, to compute eligibility. To make this concrete, consider the first line of Table 2, which documents the Medicaid expansions in Alabama. In 1988, all children are classified as ineligible. In 1989, I classify all children who are ages 0 and 1 as eligible for Medicaid, regardless of their family's income. In 1991, I would classify all children who are ages 8 and under as eligible for the expansions. I then use these imputations on children to create to different policy variables that reflect the new bundles on the married woman's budget set:

> *ELIG* is an indicator equal to 1 if the youngest child in the family would be covered by the expansion at zero income, and 0 otherwise.
>
> *MEDICAID%* is a continuous variable equal to the expansion income limit for the youngest child, expressed as a fraction of the poverty line. For ineligible children, it is set equal to 0.

Thus, a mother in Alabama with a 7-year-old would have *ELIG* and *MEDICAID%* set equal to 0 in both 1988 and 1989. In 1991 and 1993, this mother would have *ELIG* set equal to 1, because her 7-year-old would be covered under my imputation. *MEDICAID%* (not shown in Table 2 for a 7-year-old) would be equal to 100% in 1991 and 1993.

To address the concerns about omitted variables bias mentioned above, I include a full set of dummy variables for state, time, and youngest child's age in the regression. I estimate a probit model:

$$(1) \quad LFP_i^* = \alpha + \beta_1 ELIG_{ijtk} + \beta_2 MEDICAID\%_{ijtk} + \gamma X_i + \sum_j \delta_j S_{ij} + \sum_t \delta_t T_{it} + \sum_k \delta_k Y_{ik} + \varepsilon_i$$

where (1) is the underlying index function for the probit. LFP_i^* can take on both positive and negative values, which represents the net utility from participating in the labor force. $ELIG_{ijtk}$ and $MEDICAID\%_{ijtk}$ were discussed above. The vector X_i is a vector of other individual characteristics that may affect labor force participation (such as age, ethnicity, education, and race of the head and spouse), S_{ij} are dummy variables indicating the state of residence (j=1,...,51), T_{it} are dummy variables for calendar year (t=1987,...,1997), and Y_{ik} are dummy variables indicating youngest child's age (k=0,1,..., 17). I also include a rich set of family structure variables: the number of children in each age bracket from 0 to 17 (entered linearly). The coefficients $\alpha,\beta,\gamma,\delta$ will be estimated and ε is an error term that is assumed to be uncorrelated with the explanatory variables. From the discussion in Section 4, it is expected that $\beta_1 < 0 < \beta_2$, and $|\beta_1| > |\beta_2|$.

In practice, we do not observe the underlying value for LFP_i^*, but instead observe only the discrete outcome:

$$(2) \quad LFP_i = 1 \text{ if } LFP_i^* \geq 0$$
$$\text{if } LFP_i^* < 0.$$

where LFP_i is an indicator variable equal to 1 if the *i*th married woman participated in the labor force. Assuming that $\varepsilon \sim$ N(0,1) and denoting $\Phi(\bullet)$ as the cumulative normal function gives the following probability:

(3)

$$\Pr\left(LFP_i = 1\right) = \Phi\left(\alpha + \beta_1 ELIG_{ijtk} + \beta_2 MEDICAID\%_{ijtk} + \gamma X_i + \sum_j \delta_j S_{ij} + \sum_t \delta_t T_{it} + \sum_k \delta_k Y_{ik}\right)$$

In addition to estimating the model present in equation (3), the tables show a variety of other specifications. In one set of specifications, I replace $ELIG_{ijkt}$ and $MEDICAID\%_{ijkt}$ with a set of policy variables that more richly captures the Medicaid expansions. Instead of a 0-1 variable for Medicaid eligibility, I compute the Medicaid "replacement rate" as follows in the CPS:

$$(4)\ \ RR_i = \frac{Covered_i}{Total_i} = \frac{\sum_k NUMKID_{ik} SPEND_{ik} ELIG_{ijkt}}{\sum_k NUMKID_{ik} SPEND_{ik}}$$

where RR_i represents the fraction of *child* health expenditure that is covered for the household. In equation (4), $NUMKID_{ik}$ represents the number of children in each age bracket, $SPEND_{ik}$ represents the average spending on a child who is age *k*, and $ELIG_{ijtk}$ is defined the same way as before. The age-specific child spending comes from the 1987 National Medical Expenditure Survey, and was used in the work of Cutler and Gruber (1996) and Gruber and Yelowitz (1999).

In addition, the $MEDICAID\%_{ijtk}$ measure is meant to capture changes in the budget constraint for a married woman, but it treats changes anywhere along the budget constraint equally. For example, the measure treats moving from 10% to 35% of the FPL the same as moving from 150% to 175% of the FPL, or from 500% to 525% of the FPL. This is potentially problematic, because the income distribution and earnings possibilities are much different at these different levels. To account for potential non-linear effects of moving the Medicaid income limit, I have mapped each percentage of the poverty line into the income distribution for families, using the Current Population Survey data discussed below. To compute this income distribution, I use <u>all</u> families (including single people and the elderly) in all years, regardless of whether they meet the selection criteria for the "married couples" sample below.[11] For the United States population as a whole, approximately 2% have zero or negative total income (presumably due to losses from self employment), about 7% have total income under 50% of the FPL, about 17% have income under 100% of the FPL, about 27% have income under 150% of the FPL, and about 37% have income under 200% of the poverty line. A Medicaid expansion from 0% to 50% of the FPL would be assigned a smaller change with this income distribution variable (5 percentage points) compared with an expansion from 150% to 200% of the FPL (10 percentage points). Most of thickness of the income distribution lies between 100% and 300% of the poverty line, so Medicaid expansions beyond 300% of the FPL end up getting smaller weight with the income distribution variable.

Finally, in addition to experimenting with different policy variables, I estimate both "difference-in-differences" models by including STATE, TIME, and YOUNGEST age dummies, as well as true "difference-in-difference-in-differences" (DDD) models, by including interaction of STATE and TIME, STATE and YOUNGEST, and TIME and YOUNGEST. These DDD probits include more than 1500 variables controls – the remaining variation comes from the triple interaction of STATE*TIME*YOUNGEST.

6. Results from the Current Population Survey, 1987-1997

The data set, which consists of repeated cross sections, was constructed from the 1988-1998 March Current Population Survey (CPS) covering the calendar years 1987-1997. These years covered the period when the Medicaid and SCHIP expansions occurred. The CPS is a timely, nationally representative survey interviewing many households (approximately 57,000 per month). Its March Annual Demographic file contains retrospective information on labor force participation and earnings. The sample contains 146,926 married women between the ages of 18 and 60 with at

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[11] One could argue that the income distribution, especially for married couples and female heads with children, is endogenous to the Medicaid legislation. In future work, I plan on improving this measure by computing the income distribution for working age adults who are not statutorily eligible for Medicaid. Moreover, it may be reasonable to map out an *individual* earnings distribution rather than a *family* income distribution.

least one own-child under 18 present. To these households, I imputed Medicaid eligibility using the methodology discussed above. The sample selection criteria are shown in Table 4a. Several comments about the selection criteria are in order. First, the sample consists of family units that would likely be covered under a typical private plan. Since many private plans cover children up to age 19 (or age 23 if they are full-time students), I exclude families with children older than 23 living at home. Second, I eliminated any "non-traditional" living arrangements – that is, families where there are foster children, grandchildren, cousins, grandparents, etc. The families that remain are typical husband - wife - own children / step-children families. Third, I eliminated families where the husband or wife was under 18 or over 60, because of concerns about other public insurance programs. Fourth, I made sure the survey responses were sensible (e.g., the "Wife's identifier" points to a woman, the "Husband's identifier" points to a man, etc.). Finally, I exclude families where it appears the children are either too young or too old to belong to the mother (e.g., the mother's age at the time of the birth was less than 15 or greater than 44).

The summary statistics for these households are shown in Table 4. Almost three-quarters of the women worked in the previous year, but less than half of the women who worked had employer-provided health insurance in their own name. Over the entire sample, including non-workers, the average earnings was $10,739, expressed in constant 1990 dollars. Based on my imputation of the Medicaid expansions, more than half of the families had their youngest child potentially eligible for Medicaid, and the average income limit was 76.3% of the FPL.

Table 5 provides "differences-in-differences" (DD) estimates for two labor market outcomes – whether the married woman worked at all in the previous year, and whether she worked at a job where she did not have health insurance.[12] The first two columns use the statutory Medicaid rules, and the second two columns use the more involved measures with the replacement rate and the income distribution. Regardless of the measure used, it appears that the Medicaid expansions did not have a significant overall effect on labor force participation. On the other hand, in both case,

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[12] Note that for this second outcome, it is not conditional on work.

it appears that the expansions affected the kind of job that the woman took – the likelihood of participating in a job without employer provided health insurance increases with the Medicaid income limit (or income distribution), and decreases with Medicaid's value/eligibility or the replacement rate. The findings in columns (2) and (4) are consistent with the budget constraint analysis.

Table 6 provides DDD estimates, by including the interactions of STATE, TIME, and YOUNGEST child's age. By including interactions of STATE and TIME, STATE and YOUNGEST, and TIME and YOUNGEST, much of the variation in Medicaid policy is subsumed. The results for the statutory rules are insignificant for both labor force participation and for working at a job without employer-provided health insurance, but even with the detailed set of controls, the results using the income distribution and replacement rate are marginally significant in column (4).

7. Results from the Survey of Income and Program Participation 1987-2000

Although the CPS is a natural starting point for exploring the Medicaid expansions, other data sets offer strengths that the CPS does not. In this section, I expand the analysis to include the Survey of Income and Program Participation (SIPP). A new SIPP panel is introduced each calendar year, follows individuals for 24 to 48 months, and surveys approximately 15,000 to 20,000 thousand households. Because the panels overlap, households from as many as three different panels may be observed at a given point in time. Each panel interviews individuals in four-month intervals known as waves, where the respondent is asked retrospective information about income, labor force activity, and participation status in public programs over the preceding four months. By using the 1987 to 1996 SIPP panels, I can exploit panel data techniques to estimate the models, thereby removing individual heterogeneity. In addition, the monthly SIPP income data allows more accurate measurement of the Medicaid expansions.

Since it is possible to deduce whether a woman was pregnant in the SIPP panel, the replacement rate is now modified to include adults as well (although it is assumed that the only adult expenses that would qualify for Medicaid are pregnancy expenses). In this case, the replace rate now becomes:

$$(5) \qquad RR_i = \frac{\sum_k \left(NUMKID_{ik} SPEND_{ik} ELIG_{ijkt} + PREGELIG_{ij} PREGSPEND_{ij} \right)}{\sum_k \left(NUMKID_{ik} SPEND_{ij} + ADULTSPEND_{ij} \right)}$$

where $PREGELIG_{ij}$ and $PREGSPEND_{ij}$ are measures of a woman's Medicaid eligibility during the pregnancy and the pregnancy expenses (which vary during the pregnancy and delivery). Both measures equal zero for everyone except pregnant women. It proved impossible to find out how health expenses varied during the pregnancy and delivery, so as a first pass, I assume that two-thirds of pregnancy costs are related to the delivery itself, and the remaining one-third is distributed evenly over the nine months prior to delivery. Since pregnancy is measured separately, the $SPEND_{ij}$ represents net-of-pregnancy expenditure. Because pregnancy expenses are included, the denonminator of the replacement rate is modified to include adult health care expenses (unlike the CPS). Thus, although the replacement rates in the CPS and SIPP vary in similar ways, the levels in the SIPP will be much lower.

The SIPP extract is similar in many respects to the CPS extract. Overall, there are 181,193 observations on 20,773 married women. The sample includes women who were aged 18 to 59 throughout the SIPP panel, who were observed in each SIPP interview, were continuously married, had at least one child under the age of 18, and lived in a uniquely identified state. In addition, only the last interview month of any given wave of the SIPP is used.[13]

Returning to Table 6, the variable means for the SIPP are largely similar to the CPS

[13] There is considerable "seam bias" in the SIPP, where the responses within a given wave vary much less than the answers between waves. For this reason, there is significantly less value in using the first three months of any SIPP wave.

sample. The one key exception is the replacement rate as defined in equation (5).

Table 8 presents difference-in-differences estimates from the SIPP sample using a probit model, similar to the CPS sample in Table 6. As with the CPS, the results on labor force participation using the statutory rules are extremely weak, and the results using the more comprehensive measures of the Medicaid expansion are mixed. In addition, even the result on working at a job without health insurance disappears in the SIPP using the statutory rules or the more comprehensive measures.

Tables 9 and 10 attempt to exploit the panel structure of the SIPP by estimating random effects and fixed effects models. These tables present results that are much stronger and more consistent with the theoretical predictions in Section 4. Since the results are similar across the two tables, the discussion will focus on Table 9 (the random effects specification). The results suggest that increasing the income limit for Medicaid (MEDICAID%) increases the likelihood of working during the month, and that increasing the income effect (ELIG) reduces the likelihood of working. The results are very similar in magnitude to those in the second column, where the outcome is working without employer health insurance. The similarity of the results in these two columns suggest that the married women in the SIPP panel respond to the legislative changes in predictable ways, and substitute exclusively toward jobs without health insurance. The results in columns (3) and (4), which use the comprehensive measures of the Medicaid expansions, are consistent with those in the first two columns.

8. Conclusions and Extensions

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INSERT FIGURE 1 HERE

INSERT FIGURE 2 HERE

INSERT FIGURE 3 HERE

TABLE 1
Time Line of Early Medicaid Expansions for Children, 1986-1990.

SOBRA 1986	**OBRA 1987**	**MCCA 88**	**OBRA 89**	**OBRA 90**
● State Optional. ● Children under age 2. ● Incomes below 100 percent of the FPL, effective April 1987. ● Beginning July 1988, states could increase the age level by one in each fiscal year until all children under age 5 were included.	● State Optional. ● Effective July 1988, states could immediately cover children under age 5 who were born after September 1983. ● Effective October 1988, states could expand coverage to children under age 8. ● Allowed states to extend Medicaid eligibility for infants up to 185 percent of the FPL.	● Required. ● States to cover infants on a phased-in schedule: to 75 percent of the FPL, effective July 1989 and to 100 percent, effective July 1990.	● Required. ● Children under age 6. ● Incomes below 133 percent of the FPL, effective April 1990.	● Required. ● Children under age 19 who were born after September 1983. ● Incomes below 100 percent of the FPL, effective July 1991.

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 2

State Medicaid Age and Income Eligibility Thresholds for Children

State	January 1988 Age	January 1988 Medicaid Limit	December 1989 Age	December 1989 Medicaid Limit	December 1991 Age	December 1991 Medicaid Limit	December 1993 Age	December 1993 Medicaid Limit
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
California			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
Massachusetts	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 Hampshire			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
North Carolina	1.5	100	7	100	8	185	10	185
North 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
South Carolina	1.5	100	6	185	8	185	10	185
South 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

Note: 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), Intergovernmental Health Policy Project (various editions), and National Governor's Association(various editions).

TABLE 3

Medicaid expansion generosity for all children, expressed as a fraction of the poverty line, averaged over all months within the year.

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
AL	0	3	8	35	47	57	62	67	78	92	96	147	200	200
AK	0	0	5	33	47	57	62	67	72	78	83	88	173	189
AZ	0	8	11	38	51	69	105	129	134	140	121	129	165	195
AR	4	15	27	40	50	57	62	67	72	78	118	189	189	189
CA	0	0	15	40	47	57	62	67	74	81	87	152	205	242
CO	0	0	2	32	47	57	62	67	72	78	83	160	185	185
CT	0	7	15	37	47	57	70	95	115	125	149	243	300	300
DE	0	6	11	35	47	70	110	110	112	113	113	113	193	200
DC	4	6	11	39	51	57	62	67	74	80	86	118	200	200
FL	2	12	27	40	49	57	62	67	89	113	107	161	189	189
GA	0	0	9	35	47	57	86	110	112	113	113	142	200	218
HI	0	0	5	45	51	57	62	67	76	81	87	97	102	163
ID	0	0	4	32	47	57	62	67	72	78	102	155	150	150
IL	0	3	5	33	47	57	62	67	72	78	83	155	186	186
IN	0	1	7	35	47	57	62	67	73	79	99	131	150	150
IA	0	0	21	42	49	57	62	67	74	80	86	113	185	193
KS	0	4	17	39	47	57	62	67	79	95	97	150	200	200
KY	2	10	12	34	47	57	62	67	89	113	107	101	141	200
LA	0	0	30	44	51	57	62	67	72	78	88	113	150	150
ME	0	7	29	62	128	128	128	128	129	130	130	153	189	200
MD	3	6	25	45	51	57	79	105	115	125	134	171	200	200
MA	3	16	30	40	47	57	83	88	101	80	96	158	200	200
MI	0	10	18	37	47	57	62	67	123	136	144	183	200	200
MN	0	5	23	45	50	86	261	261	261	261	261	264	276	276
MS	2	10	18	39	47	57	62	67	74	80	106	113	113	200
MO	0	7	14	35	47	57	105	105	106	108	108	172	300	300
MT	0	0	3	36	51	57	62	67	72	78	83	150	150	150
NE	0	13	26	38	47	57	62	67	73	79	84	128	185	185
NV	0	0	2	32	47	57	62	67	72	78	83	116	200	200
NH	0	0	2	32	47	57	98	142	185	185	185	189	300	300
NJ	3	8	11	34	49	63	80	85	90	95	101	187	275	350
NM	0	8	15	36	49	59	65	70	120	185	185	185	223	235
NY	0	0	0	36	50	127	127	111	105	80	86	161	192	236
NC	2	9	17	40	50	59	65	70	105	108	108	131	200	200
ND	0	0	2	32	47	57	62	67	85	105	105	106	118	140
OH	0	0	5	33	47	57	62	67	72	78	83	150	150	175
OK	0	8	13	36	47	57	63	68	73	80	90	149	175	175
OR	1	8	15	35	47	57	62	67	88	110	110	140	170	170
PA	0	8	15	36	47	57	83	101	116	125	134	169	189	189
RI	12	26	35	43	50	59	65	71	79	81	189	250	250	250
SC	2	9	17	39	50	59	65	70	75	80	107	152	152	152
SD	0	3	5	33	47	57	62	67	73	108	110	122	138	170
TN	3	15	27	39	49	59	65	70	75	80	95	124	124	124
TX	0	3	13	37	47	59	65	70	75	80	86	101	113	171
UT	0	0	5	33	47	57	62	67	102	105	105	145	200	200
VT	2	29	60	51	50	136	213	213	213	213	213	235	300	300
VA	0	3	5	33	47	57	86	110	110	110	110	123	185	185
WA	3	9	21	43	113	113	113	157	200	200	200	200	200	250
WV	3	17	33	41	48	58	106	150	150	150	150	150	150	158
WI	0	5	7	34	53	62	68	73	82	91	97	102	128	136
WY	0	1	5	33	47	57	62	67	72	78	83	88	94	99

Notes: The Medicaid rules come from various publications of the Intergovernmental Health Policy Project and the National Governors' Association. The later rules about Medicaid and SCHIP come from http://www.hcfa.gov/init/chpa-map.htm.

Table 4a: Sample screens for Current Population Survey, 1988-1998

	(1) March 1988	(2) March 1989	(3) March 1990	(4) March 1991	(5) March 1992	(6) March 1993	(7) March 1994	(8) March 1995	(9) March 1996	(10) March 1997	(11) March 1998
1. Original sample of individuals	155,980	144,687	158,079	158,477	155,796	155,197	150,943	149,642	130,476	131,854	131,617
2. FKIND=1	109,448	101,475	110,000	109,287	106,431	106,071	102,505	101,250	87,144	87,497	87,457
3. FOWNU18>0	68,043	62,766	67,948	67,614	65,427	65,079	63,346	62,405	53,812	54,073	53,842
4. FOWNU18= FRELU18	66,396	61,544	66,485	66,257	63,983	63,717	61,638	60,888	52,624	52,525	52,631
5. Include only husband, wife, own-child	63,399	58,920	62,957	62,515	60,435	60,259	57,906	57,431	49,613	49,211	49,516
6. Husband and wife aged 18 and 60	62,601	58,313	62,307	61,801	59,807	59,635	57,283	56,849	49,164	48,786	48,987
7. All children under age 24	61,640	57,484	61,410	60,890	58,883	58,764	56,557	56,059	48,511	48,134	48,304
8 One observation per family	15,109	14,107	15,006	14,779	14,376	14,381	13,811	13,695	11,811	11,740	11,764
9. Wife's gender correct	15,013	14,019	14,901	14,700	14,278	14,295	13,677	13,585	11,710	11,625	11,667
10. Husband's gender correct	14,948	13,969	14,847	14,641	14,220	14,257	13,606	13,489	11,625	11,528	11,587
11. Wife's age between 18 & 60	14,935	13,956	14,830	14,617	14,200	14,234	13,590	13,471	11,607	11,506	11,558
12. Husband's age between 18 & 60	14,897	13,920	14,772	14,569	14,160	14,189	13,549	13,410	11,565	11,459	11,513
13. Children in the age groupings add up to FOWNU18	14,897	13,920	14,770	14,569	14,159	14,188	13,548	13,409	11,564	11,458	11,513
14. F's age <15 or >44 when oldest born	14,805	13,821	14,658	14,466	14,066	14,114	13,483	13,333	11,506	11,388	11,443
15. F's age <15 or >44 when youngest born	14,793	13,804	14,638	14,449	14,055	14,102	13,468	13,313	11,498	11,378	11,428

There are a total of 146,926 married households in the sample for the calendar years 1987-1997. The screens in lines 1., 2., 3., and 4. come directly from the CPS. In line 5., the variable A-PFREL was used to determine which families only had husband / wife / own-child reported, and the variables H-YEAR, H-SEQ, and FFPOS were used to keep only individuals in those families. Lines 6. and 7. use the CPS variable A-AGE. Line 8. sorts on H-YEAR, H-SEQ, and FFPOS, and keeps only one observation - that is, it aggregates from the person level to the family level. Lines 9., 10., 11., and 12. use the variables A-WIFEIDX and A-HUSBIDX to verify that the person who is reported as the wife or husband has the correct gender and age range. Line 13. compares my aggregation of children into eighteen different age brackets to the CPS total. Lines 14. and 15. exclude families where the mother's reported age at birth is less than 15 years or greater than 44 years.

Table 4b: Sample screens for Survey of Income and Program Participation, 1987-1996 Panels

	(1) 1987 Panel	(2) 1988 Panel	(3) 1990 Panel	(4) 1991 Panel	(5) 1992 Panel	(6) 1993 Panel	(7) 1996 Panel
1. Original sample of individuals							
2. Fourth reference month of the wave							
3. State is uniquely identified							
4. Only one family per household							
5. No household member over age 60							
6. Head and Spouse age 18 or over							
7. At least one child under 18 in household							
8 Wife is in all interview of SIPP panel							
9. Wife is continuously married throughout the SIPP panel							

There are a total of 181,193 observations on 20,773 married households in the sample for the panels 1987-1996. The 1989 SIPP panel was cancelled after 3 interviews, and was not used. No SIPP panels were started in 1994 or 1995.

TABLE 5
CPS and SIPP Variable Means (Standard Deviations)

	CPS 1987-1997	SIPP 1987-2000
Wife's labor force participation during CPS year / SIPP month (=1 if yes, =0 if no)	.731	0.696
Wife had employer-provided health insurance (=1 if yes, 0 if no)	.307	0.280
Wife worked and did not have employer provided health insurance (=1 if yes, 0 if no)	.431	0.416
Wife's wage/salary earnings during CPS year / SIPP month (constant 1990 dollars)	$10,739 ($13,969)	$965 ($1,271)
ELIG: Is the youngest child expansion-eligible at zero income? (=1 if yes, =0 if no)	.559	0.647
MEDICAID% for youngest child	76.3 (73.9)	93.5 (77.79)
Replacement rate for children in CPS family / for adults and children in SIPP family	.479	.192
Income distribution of Medicaid expansion based on youngest child ***(earnings capacity)***	.144 (.124)	.168 (.142)
Wife's Characteristics		
Age	35.5 (7.0)	36.4 (6.7)
African-American (=1 if yes, =0 if no)	.055	.059
Other nonwhite (=1 if yes, =0 if no)	.047	.040
Hispanic (=1 if yes, =0 if no)	.127	.093
Education<8 (=1 if yes, =0 if no)	.043	.040
9#Education<12 (=1 if yes, =0 if no)	.074	.066
13#Education<15 (=1 if yes, =0 if no)	.262	.290
Education$16 (=1 if yes, =0 if no)	.233	.260
Veteran (=1 if yes, =0 if no)	.011	.012
Delivered baby this month		.003
Pregnant this month		.004
Husband's Characteristics		
Age	37.9	38.7
African-American (=1 if yes, =0 if no)	.058	.063
Other nonwhite (=1 if yes, =0 if no)	.043	.038
Hispanic (=1 if yes, =0 if no)	.126	.092
Education<8 (=1 if yes, =0 if no)	.050	.048
9#Education<12 (=1 if yes, =0 if no)	.079	.072
13#Education<15 (=1 if yes, =0 if no)	.242	.264
Education$16 (=1 if yes, =0 if no)	.287	.314
Veteran (=1 if yes, =0 if no)	.207	.229
Family Characteristics		
Own children under age 18	1.95 (.96)	2.07 (.97)
Number of family members	4.10 (1.01)	4.20 (1.01)

Source: Author's tabulations of March Current Population Survey, 1988-1998 and Survey of Income and Program Participation, 1987-1996 panels. Husbands and wives were restricted to ages 18-60, with at least one child under 18 present. Number of observations in the CPS is146,926, and in the SIPP is 181,,193 on 20,773 individuals.

TABLE 6
Results on Wife's Labor Supply from 1988-1998 March CPS (Difference-in-differences estimates)

	(1) Probit In Labor Force During Year	(2) Probit In Labor Force, No Employer Insurance	(3) Probit In Labor Force During Year	(4) Probit In Labor Force, No Employer Insurance
ELIG: Is the youngest child expansion eligible at zero income?	-.0000 (.0001)	-.0425 (.0192)	—	—
MEDICAID% / 1000	-.0092 (.0212)	.0003 (.0001)	—	—
Replacement rate for all children in family	—	—	-.0485 (.0186)	-.0475 (.0169)
Income distribution	—	—	.0416 (.0696)	.2081 (.0633)
<u>Wife's Characteristics</u>				
Age	.0781 (.0058)	-.0373 (.0055)	.0777 (.0058)	-.0376 (.0055)
Age^2/100	-.1197 (.0079)	.0376 (.0073)	-.1194 (.0079)	.0379 (.0073)
African-American	.0699 (.0456)	-.1572 (.0408)	.0695 (.0456)	-.1576 (.0408)
Other nonwhite	-.0768 (.0260)	-.0487 (.0241)	-.0766 (.0260)	-.0487 (.0241)
Hispanic	-.0990 (.0179)	-.0921 (.0166)	-.0988 (.0179)	-.0920 (.0166)
Education<8	-.5170 (.0211)	-.1718 (.0211)	-.5172 (.0211)	-.1722 (.0211)
9#Education <12	-.3607 (.0145)	-.0638 (.0141)	-.3610 (.0145)	-.0640 (.0141)
13#Education<15	.1928 (.0099)	.0071 (.0088)	.1931 (.0099)	.0073 (.0088)
Education\$16	.4564 (.0120)	-.1171 (.0106)	.4571 (.0120)	-.1164 (.0106)
Veteran	.0399 (.0367)	.1071 (.0320)	.0400 (.0367)	.1069 (.0320)
<u>Husband's Characteristics</u>				
Age	-.0110 (.0053)	-.0047 (.0049)	-.0110 (.0053)	-.0048 (.0049)
Age^2/100	.0010 (.0065)	.0014 (.0060)	.0011 (.0065)	.0014 (.0060)
African-American	.1691 (.0444)	.0376 (.0396)	.1691 (.0444)	.0376 (.0396)
Other nonwhite	-.0610 (.0271)	-.0685 (.0252)	-.0609 (.0271)	-.0683 (.0252)
Hispanic	.0027 (.0180)	-.0469 (.0167)	.0024 (.0180)	-.0472 (.0167)
Education<8	-.0812 (.0201)	-.0464 (.0196)	-.0806 (.0201)	-.0459 (.0196)
9#Education<12	-.0509 (.0147)	-.0522 (.0137)	-.0509 (.0147)	-.0523 (.0137)
13#Education<15	-.0033 (.0104)	.0420 (.0092)	-.0033 (.0104)	.0421 (.0092)
Education\$16	-.2531 (.0112)	.0669 (.0101)	-.2529 (.0112)	.0672 (.0101)

Veteran	.0509 (.0098)	.0049 (.0087)	.0510 (.0098)	.0051 (.0087)
Mean of dependent variable	.731	.431	.731	.431
Pseudo R^2	.070	.018	.070	.018

Notes: Columns each from separate regression. Estimates from Current Population Survey, March 1988 through 1998. Includes 51 STATE, 11 TIME, and 18 YOUNGEST fixed effects, linear controls for number of children in each age bracket from 0 to 17, and a constant term. Probability derivatives in italics. There are 146,926 observations.

TABLE 7
Results on Wife's Labor Supply from 1988-1998 March CPS (DDD)

	(1)	(2)	(3)	(4)
	Probit In Labor Force During Year	Probit In Labor Force, No Employer Insurance	Probit In Labor Force During Year	Probit In Labor Force, No Employer Insurance
ELIG: Is the youngest child expansion eligible at zero income?	.0339 (.0409)	-.0420 (.0377)	—	—
MEDICAID% / 1000	-.0004 (.0003)	.0002 (.0002)	—	—
Replacement rate for all children in family	—	—	-.0585 (.0238)	-.0571 (.0217)
Income distribution	—	—	-.0176 (.1254)	.1854 (.1142)
<u>Wife's Characteristics</u>				
Age	.0827 (.0059)	-.0363 (.0055)	.0823 (.0059)	-.0367 (.0055)
Age^2/100	-.1260 (.0080)	.0363 (.0074)	-.1256 (.0080)	.0367 (.0074)
African-American	.0602 (.0461)	-.1610 (.0411)	.0594 (.0461)	-.1613 (.0411)
Other nonwhite	-.0806 (.0263)	-.0494 (.0243)	-.0804 (.0263)	-.0494 (.0243)
Hispanic	-.0950 (.0180)	-.0926 (.0167)	-.0949 (.0180)	-.0925 (.0167)
Education<8	-.5266 (.0213)	-.1744 (.0213)	-.5270 (.0213)	-.1748 (.0213)
9#Education <12	-.3598 (.0147)	-.0597 (.0142)	-.3602 (.0147)	-.0600 (.0142)
13#Education<15	.1957 (.0100)	.0088 (.0089)	.1961 (.0100)	.0091 (.0089)
Education$16	.4613 (.0121)	-.1155 (.0106)	.4623 (.0121)	-.1147 (.0106)
Veteran	.0407 (.0372)	.1031 (.0322)	.0402 (.0372)	.1029 (.0322)
<u>Husband's Characteristics</u>				
Age	-.0103 (.0053)	-.0042 (.0049)	-.0104 (.0053)	-.0043 (.0049)
Age^2/100	.0001 (.0066)	.0007 (.0061)	.0001 (.0066)	.0007 (.0061)
African-American	.1779 (.0449)	.0404 (.0400)	.1783 (.0449)	.0404 (.0400)
Other nonwhite	-.0552 (.0274)	-.0676 (.0254)	-.0550 (.0274)	-.0674 (.0254)
Hispanic	.0025 (.0182)	-.0469 (.0168)	.0023 (.0182)	-.0472 (.0168)
Education<8	-.0777 (.0203)	-.0483 (.0197)	-.0773 (.0203)	-.0479 (.0197)
9#Education<12	-.0530 (.0148)	-.0529 (.0139)	-.0531 (.0148)	-.0530 (.0139)
13#Education<15	-.0052 (.0105)	.0407 (.0093)	-.0050 (.0105)	.0409 (.0093)
Education$16	-.2583 (.0114)	.0649 (.0102)	-.2579 (.0114)	.0653 (.0102)

Veteran	.0517 (.0099)	.0043 (.0088)	.0517 (.0099)	.0043 (.0088)
Mean of dependent variable	.731	.431	.731	.431
Pseudo R^2	.081	.025	.081	.081

Notes: Notes: Columns each from separate regression. Estimates from Current Population Survey, March 1988 through 1998. Includes 51 STATE, 11 TIME, 18 YOUNGEST fixed effects, 561 STATE*TIME interactions, 918 STATE*YOUNGEST interactions, and 198 TIME*YOUNGEST interactions, as well as linear controls for number of children in each age bracket from 0 to 17, and a constant term. Probability derivatives in italics. There are 146,926 observations.

TABLE 8
Results on Wife's Labor Supply from 1987-1996 SIPP Panels (DD)

	(1) Probit In Labor Force During Month	(2) Probit In Labor Force, No Employer Insurance	(3) Probit In Labor Force During Month	(4) Probit In Labor Force, No Employer Insurance
ELIG: Is the youngest child expansion eligible at zero income?	-0.002 (0.038) *-0.001*	-0.010 (0.034) *-0.004*	—	—
MEDICAID% / 1000	0.061 (0.230) *0.021*	-0.029 (0.208) *-0.011*	—	—
Replacement rate for all children in family	—	—	-0.230 (0.084) *-0.078*	-0.069 (0.077) *-0.027*
Income distribution	—	—	1.761 (0.981) *0.601*	0.017 (0.883) *0.007*
Wife's Characteristics				
Age	0.128 (0.017) *0.044*	0.015 (0.016) *0.006*	0.127 (0.017) *0.043*	0.015 (0.016) *0.006*
$Age^2/100$	-0.182 (0.023) *-0.062*	-0.033 (0.021) *-0.013*	-0.181 (0.023) *-0.062*	-0.033 (0.021) *-0.013*
African-American	-0.113 (0.103) *-0.039*	-0.132 (0.091) *-0.051*	-0.112 (0.102) *-0.039*	-0.131 (0.091) *-0.050*
Other nonwhite	-0.064 (0.062) *-0.022*	-0.024 (0.055) *-0.009*	-0.063 (0.062) *-0.022*	-0.024 (0.055) *-0.009*
Hispanic	-0.034 (0.048) *-0.012*	-0.081 (0.043) *-0.031*	-0.035 (0.048) *-0.012*	-0.081 (0.043) *-0.031*
Education<8	-0.422 (0.047) *-0.157*	-0.132 (0.043) *-0.050*	-0.423 (0.047) *-0.157*	-0.132 (0.043) *-0.051*
9#Education <12	-0.309 (0.033) *-0.112*	-0.071 (0.031) *-0.027*	-0.310 (0.033) *-0.113*	-0.071 (0.031) *-0.027*
13#Education<15	0.213 (0.021) *0.071*	0.037 (0.019) *0.014*	0.213 (0.021) *0.071*	0.037 (0.019) *0.014*
Education$16	0.480 (0.026) *0.152*	-0.055 (0.023) *-0.021*	0.481 (0.026) *0.152*	-0.054 (0.023) *-0.021*
Veteran	0.025 (0.074) *0.008*	0.175 (0.066) *0.069*	0.024 (0.074) *0.008*	0.175 (0.066) *0.069*
Wife delivered child this month	-0.166 (0.056) *-0.059*	-0.216 (0.060) *-0.082*	-0.097 (0.062) *-0.034*	-0.195 (0.065) *-0.074*
Wife pregnant this month	-0.314 (0.067) *-0.115*	-0.235 (0.068) *-0.088*	-0.260 (0.070) *-0.094*	-0.218 (0.070) *-0.082*

<u>Husband's Characteristics</u>				
Age	-0.008	-0.011	-0.008	-0.011
	(0.017)	(0.016)	(0.017)	(0.016)
	-0.003	*-0.004*	*-0.003*	*-0.004*
Age^2/100	0.002	0.012	0.003	0.012
	(0.022)	(0.020)	(0.022)	(0.020)
	0.001	*0.005*	*0.001*	*0.005*
African-American	0.471	-0.010	0.469	-0.011
	(0.098)	(0.087)	(0.098)	(0.087)
	0.140	*-0.004*	*0.139*	*-0.004*
Other nonwhite	0.064	-0.044	0.063	-0.045
	(0.064)	(0.058)	(0.064)	(0.058)
	0.021	*-0.017*	*0.021*	*-0.017*
Hispanic	-0.013	0.021	-0.013	0.021
	(0.048)	(0.043)	(0.048)	(0.043)
	-0.005	*0.008*	*-0.005*	*0.008*
Education<8	-0.155	-0.108	-0.155	-0.108
	(0.044)	(0.039)	(0.044)	(0.039)
	-0.055	*-0.041*	*-0.055*	*-0.041*
9#Education<12	-0.090	-0.132	-0.090	-0.132
	(0.033)	(0.030)	(0.033)	(0.030)
	-0.031	*-0.051*	*-0.031*	*-0.051*
13#Education<15	-0.059	0.020	-0.059	0.020
	(0.023)	(0.020)	(0.023)	(0.020)
	-0.020	*0.008*	*-0.020*	*0.008*
Education$16	-0.319	0.042	-0.318	0.042
	(0.025)	(0.023)	(0.025)	(0.023)
	-0.112	*0.016*	*-0.112*	*0.016*
Veteran	0.030	0.018	0.031	0.018
	(0.021)	(0.018)	(0.021)	(0.018)
	0.010	*0.007*	*0.010*	*0.007*

Notes: Notes: Columns each from separate regression. Estimates from Survey of Income and Program Participation, 1987-1996 panels. Includes 46 STATE, 14 TIME, 18 YOUNGEST fixed effects, as well as linear controls for number of children in each age bracket from 0 to 17, and a constant term. The standard errors are corrected for clustering at the individual level. Probability derivatives in italics. There are 181,193 observations on 20,773 individuals .

TABLE 9
Results on Wife's Labor Supply from 1987-1996 SIPP Panels (DD)

	(1)	(2)	(3)	(4)
	Random Effects Specification, In Labor Force During Month	Random Effects Specification, In Labor Force, No Employer Insurance	Random Effects Specification, In Labor Force During Month	Random Effects Specification In Labor Force, No Employer Insurance
ELIG: Is the youngest child expansion eligible at zero income?	-0.010	-0.017	—	—
	(0.005)	(0.006)		
MEDICAID% / 1000	0.071	0.076	—	—
	(0.029)	(0.036)		
Replacement rate for all children in family	—	—	-0.027	-0.030
			(0.012)	(0.014)
Income distribution	—	—	0.312	0.213
			(0.127)	(0.154)
Wife's Characteristics				
Age	0.027	0.003	0.027	0.003
	(0.004)	(0.004)	(0.004)	(0.004)
$Age^2/100$	-0.038	-0.007	-0.038	-0.007
	(0.005)	(0.006)	(0.005)	(0.006)
African-American	-0.039	-0.064	-0.039	-0.064
	(0.031)	(0.034)	(0.031)	(0.034)
Other nonwhite	-0.034	-0.006	-0.034	-0.006
	(0.019)	(0.021)	(0.019)	(0.021)
Hispanic	-0.039	-0.039	-0.039	-0.039
	(0.014)	(0.015)	(0.014)	(0.015)
Education<8	-0.050	-0.014	-0.050	-0.014
	(0.010)	(0.011)	(0.010)	(0.011)
9#Education <12	-0.075	-0.027	-0.075	-0.026
	(0.009)	(0.010)	(0.009)	(0.010)
13#Education<15	0.039	0.009	0.039	0.009
	(0.005)	(0.006)	(0.005)	(0.006)
Education$16	0.109	-0.022	0.109	-0.022
	(0.007)	(0.007)	(0.007)	(0.007)
Veteran	0.028	0.056	0.028	0.056
	(0.018)	(0.021)	(0.018)	(0.021)
Wife delivered child this month	-0.032	-0.049	-0.024	-0.040
	(0.012)	(0.014)	(0.012)	(0.015)
Wife pregnant this month	-0.046	-0.048	-0.039	-0.041
	(0.011)	(0.014)	(0.012)	(0.014)
Husband's Characteristics				
Age	0.000	0.001	0.000	0.001
	(0.004)	(0.004)	(0.004)	(0.004)
$Age^2/100$	-0.002	-0.002	-0.002	-0.002
	(0.004)	(0.005)	(0.004)	(0.005)
African-American	0.135	0.004	0.135	0.005
	(0.030)	(0.033)	(0.030)	(0.033)
Other nonwhite	0.019	-0.026	0.019	-0.026
	(0.020)	(0.022)	(0.020)	(0.022)
Hispanic	-0.009	0.000	-0.009	0.000
	(0.014)	(0.015)	(0.014)	(0.015)
Education<8	-0.056	-0.020	-0.056	-0.020
	(0.010)	(0.011)	(0.010)	(0.011)

9#Education<12	-0.027	-0.038	-0.027	-0.038
	(0.009)	(0.010)	(0.009)	(0.010)
13#Education<15	-0.012	0.008	-0.012	0.008
	(0.006)	(0.007)	(0.006)	(0.007)
Education$16	-0.070	0.007	-0.070	0.007
	(0.007)	(0.007)	(0.007)	(0.007)
Veteran	0.046	0.023	0.046	0.023
	(0.006)	(0.006)	(0.006)	(0.006)

Notes: Notes: Columns each from separate regression. Estimates from Survey of Income and Program Participation, 1987-1996 panels. Includes 46 STATE, 14 TIME, 18 YOUNGEST fixed effects, as well as linear controls for number of children in each age bracket from 0 to 17, and a constant term. The standard errors are corrected for clustering at the individual level. Probability derivatives in italics. There are 181,193 observations on 20,773 individuals .

TABLE 10
Results on Wife's Labor Supply from 1987-1996 SIPP Panels (DD)

	(1) Fixed Effects Specification, In Labor Force During Month	(2) Fixed Effects Specification, In Labor Force, No Employer Insurance	(3) Fixed Effects Specification, In Labor Force During Month	(4) Fixed Effects Specification In Labor Force, No Employer Insurance
ELIG: Is the youngest child expansion eligible at zero income?	-0.009 (0.005)	-0.016 (0.007)	—	—
MEDICAID% / 1000	0.083 (0.030)	0.093 (0.037)	—	—
Replacement rate for all children in family	—	—	-0.012 (0.012)	-0.024 (0.015)
Income distribution	—	—	0.343 (0.132)	0.301 (0.162)
<u>Wife's Characteristics</u>				
Age	0.004 (0.005)	-0.002 (0.006)	0.004 (0.005)	-0.002 (0.006)
$Age^2/100$	-0.009 (0.007)	0.002 (0.008)	-0.009 (0.007)	0.002 (0.008)
Wife delivered child this month	-0.030 (0.012)	-0.045 (0.014)	-0.027 (0.012)	-0.038 (0.015)
Wife pregnant this month	-0.025 (0.011)	-0.034 (0.014)	-0.022 (0.012)	-0.028 (0.014)
<u>Husband's Characteristics</u>				
Age	-0.006 (0.005)	0.002 (0.006)	-0.006 (0.005)	0.003 (0.006)
$Age^2/100$	0.010 (0.006)	-0.001 (0.007)	0.010 (0.006)	-0.001 (0.007)

Notes: Columns each from separate regression. Estimates from Survey of Income and Program Participation, 1987-1996 panels. Includes 46 STATE, 14 TIME, 18 YOUNGEST fixed effects, as well as linear controls for number of children in each age bracket from 0 to 17, and a constant term. The standard errors are corrected for clustering at the individual level. Probability derivatives in italics. There are 181,193 observations on 20,773 individuals.

Figure 1
Budget constraint for married woman facing a Medicaid expansion, with Medicaid valued at M^1 and income limit of E^1.

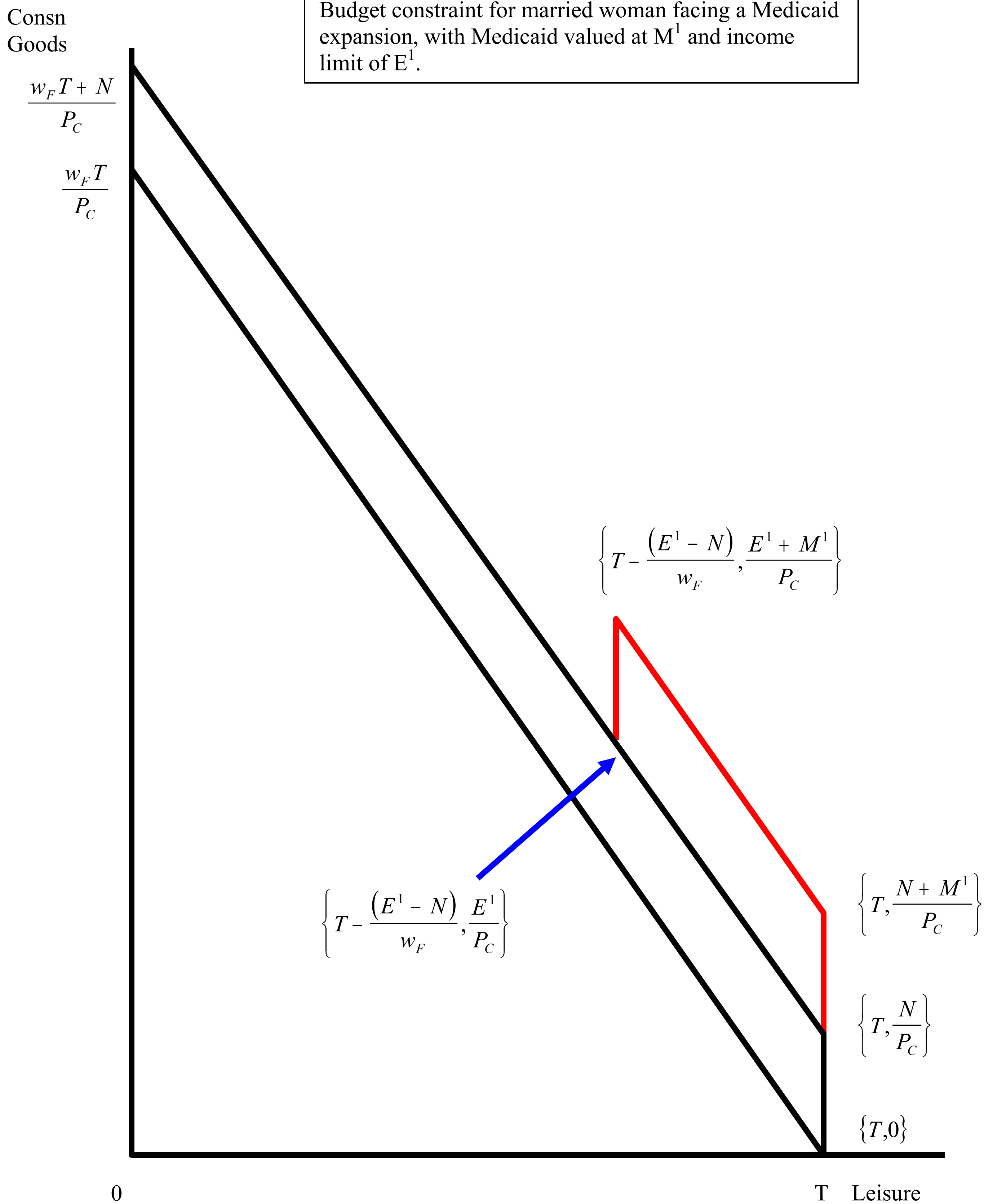

Figure 2

Increasing the value of Medicaid by covering more children. Budget constraint for married woman facing a Medicaid expansion, with Medicaid valued at $M^2 > M^1$, and income limit of E^1.

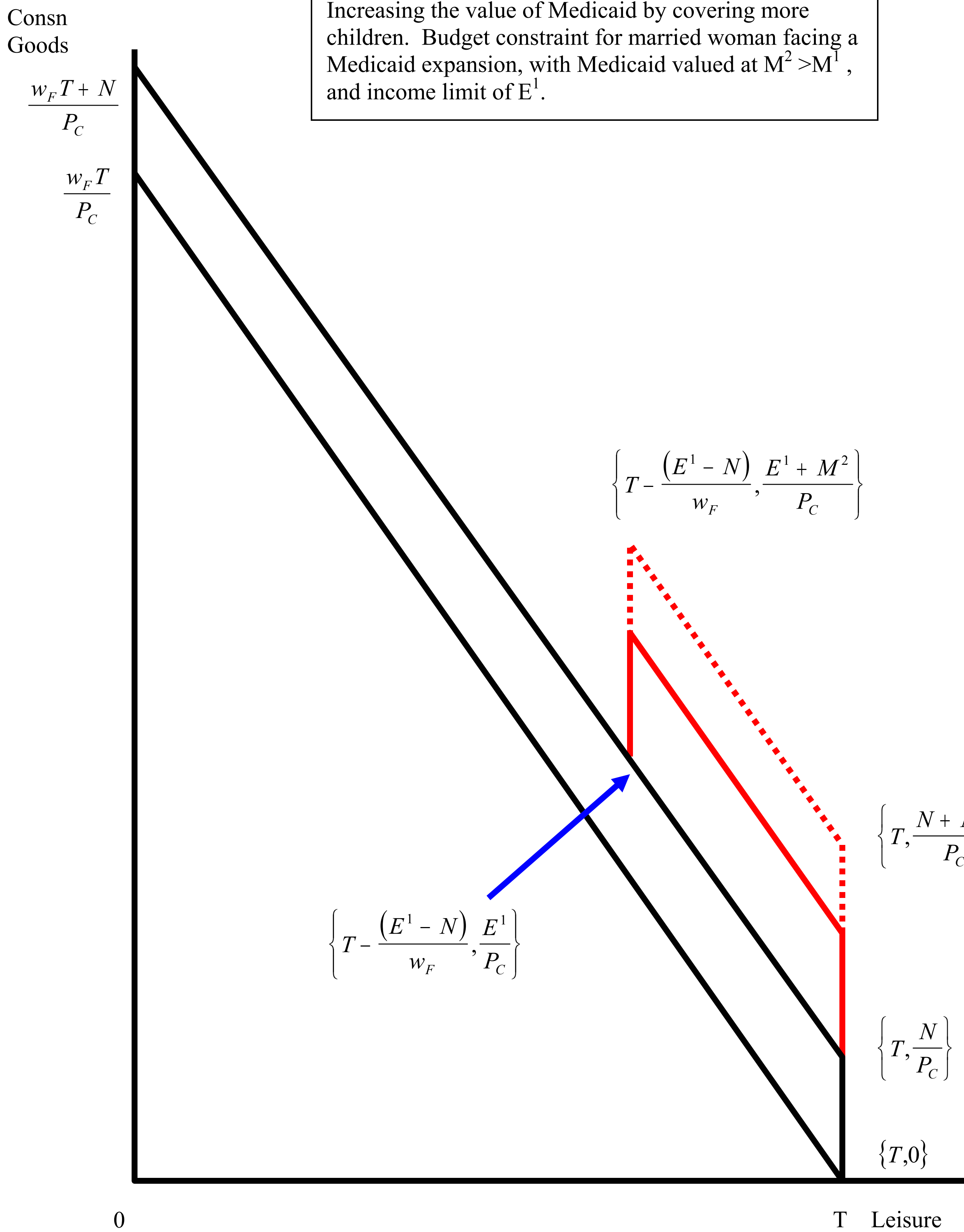

Figure 3
Increasing the income limit for Medicaid eligibility. Budget constraint for married woman facing a Medicaid expansion, with Medicaid valued at M^1 and income limit of $E^2 > E^1$.