PRELIMINARY
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The Dynamics of Children's Health Insurance, 1986-1999

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The years 1986-1999 were a period of unprecedented policy interest in health insurance for children. Using data from the Survey of Income and Program Participation 1986-1996 panels, we provide both descriptive and analytical evidence about the dynamics of children's health insurance over this period, focusing on the roles of various changes in policy that affected health insurance. We find that insurance turnover increased, with a marked increase in transitions involving public insurance (Medicaid and the State Children's Health Insurance Program (SCHIP)). Our preliminary estimates of discrete time duration models for transitions of children's insurance coverage across the insurance states of public insurance, private insurance, and no insurance show that several of the policy changes that took place over the 1990s had important effects on health insurance transitions for children. We find evidence that the implementation of Temporary Assistance to Needy Families, though not welfare waivers nor the expansion of the Earned Income Tax Credit (EITC), tended to reduce public insurance obtained through welfare participation. In the case of insurance obtained while not on welfare, we find strong and consistent evidence that the expansions of Medicaid and the implementation of SCHIP increased transitions out of uninsurance. Better economic conditions also tend to increase transitions out of uninsurance, particularly transitions to private insurance. We find evidence that higher health care costs tend to reduce the frequency of transitions–both transitions into insurance and transitions out of insurance.

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I. Introduction

Over the past two decades, health insurance coverage for children has become an important focus of public policy. Recognition that individuals without health insurance are less likely to have a regular source of care or to receive sufficient care has led to concern about the adequacy of health insurance coverage for members of a vulnerable population. The potential impact on coverage of rising health insurance premiums and other changes in health insurance markets has also increased policy attention on the issue of children's health insurance coverage. Falling levels of private coverage among children through the late 1980s and early 1990s spurred increased public provision of insurance, most notably expansions in eligibility for Medicaid and the introduction of the State Children's Health Insurance Program (SCHIP).

The past ten years have also seen significant changes in the provision of cash assistance and other policies that may affect children's health insurance coverage. Health insurance coverage among children is entwined with welfare participation and employment, as the two primary sources of insurance coverage for children are Medicaid (frequently obtained as an additional benefit of welfare participation) and coverage through a parent's employer. Policy changes such as welfare reform and expansions of the Earned Income Tax Credit (EITC) that are designed to encourage work in place of welfare participation may have secondary impacts on children's health insurance coverage. As parents leave welfare, with its guaranteed health insurance through Medicaid, for jobs that may or may not have health insurance coverage offered as a benefit, children may experience a change in the source of their health insurance coverage or may become uninsured. Similarly, changes in health care markets and economic conditions such as rising health care prices and cyclical changes in the availability of employment may also affect children's coverage.

Despite the important changes in policy, the fraction of children who are uninsured has changed relatively little, particularly through the 1990s (see Figure 1). However, this relatively constant level of uninsurance may mask changes in the underlying dynamics of health insurance among children. While static models of insurance status among children have been estimated for this time period, there has been little attempt to characterize insurance dynamics, including spells of private insurance, public insurance (Medicaid/SCHIP), and uninsurance, among children. Dynamic models help us understand the process by which children become uninsured or gain insurance, allowing us to examine separately transitions between the three insurance states. Examining such transitions allows us to distinguish, for example, whether lower levels of private coverage can be attributed to higher transition rates out of private insurance or reduced entries into private insurance. While both of these transition rates would be reflected in reduced levels of private coverage, they have different implications for policy. To continue with the above example, lower private coverage rates stemming from higher rates of coverage loss suggest that policies focusing on continuation coverage would be warranted, while higher rates stemming from difficulties gaining coverage would indicate that policy should focus on increasing initial access to coverage. Dynamic models also permit us to account for the fact that whether a child has insurance at a given time depends on that child's insurance coverage in the previous period.

In this paper, we use data from the 1986-1996 panels of the Survey of Income and Program Participation (SIPP) to examine patterns of health insurance coverage among children during the period 1986-1999. Unlike most other panel data sets, the SIPP conducts interviews three times a year, allowing us to determine a child's insurance status at multiple points during the year. Using these data, we document a shift in the underlying dynamics of health insurance coverage among children. We show that this shift takes two forms: a shift in the source of health

insurance for many children from private insurance to public insurance, and an overall increase in the rate of transitions between all three insurance states—public insurance, private insurance, and no insurance. We investigate the sources of these changes, estimating discrete time duration models for transitions of children's insurance coverage across the three insurance states. We focus on the impacts of expansions in public coverage availability (expanded Medicaid and the introduction of SCHIP), the effects of other policies directed at the poor that affect employment and insurance coverage (including welfare reform and changes in the Earned Income Tax Credit), and economic conditions (as proxied by unemployment rates).

We find that several of the policy changes that took place over the 1990s had important effects on health insurance transitions for children. We find evidence that the implementation of Temporary Assistance to Needy Families, though not welfare waivers nor the expansion of the Earned Income Tax Credit (EITC), tended to reduce public insurance obtained through welfare participation. In the case of insurance obtained while not on welfare, we find strong and consistent evidence that the expansions of Medicaid and the implementation of SCHIP increased transitions out of uninsurance. Better economic conditions also tend to increase transitions out of uninsurance, particularly transitions to private insurance, underscoring the importance of cyclical factors for children's insurance. We find evidence that higher health care costs tend to reduce the frequency of transitions–both transitions into insurance and transitions out of insurance. Despite the apparent importance of policy factors in the shifts we document, we also find evidence in our models of an increase in transitions above and beyond the increase due to policy factors.

II. Policy Changes Affecting Children's Health Insurance

The 1990s were a period of great policy activity, and many of the changes that were made had implications for children's health insurance. Probably the most significant of these changes was the expansion of public health insurance for children whose families did not qualify for cash assistance. Prior to the late 1980s, Medicaid eligibility for children was tied to eligibility for Aid to Families with Dependent Children (AFDC). Generally, to qualify for AFDC a family must have been either headed by a single parent or (in some states) have an unemployed primary earner, and was required to pass stringent income and resource tests. Starting in the late 1980s, a series of federal law changes substantially diminished the link between Medicaid eligibility and AFDC eligibility by extending Medicaid coverage to pregnant women and children with incomes above the AFDC limits.[1] Under the expansions, Medicaid eligibility determination was different from AFDC eligibility determination in three fundamental ways: the eligibility limits were linked to the federal poverty line rather than to the AFDC limits, most of which were far below the poverty level, there were no family structure requirements, and eligibility was determined at the individual, rather than family, level.

The Medicaid expansions began in 1986 and continued through the early 1990s, with effective dates and phasing-in of the legislation making the dates of actual coverage changes somewhat later. Early legislation focused more on optional coverage–states were permitted to raise income limits above AFDC limits in order to extend Medicaid coverage to pregnant women, infants, and very young children. Later expansions required states to implement eligibility increases, and generally applied to older children. The most far-reaching required

[1]Until the expansions, the primary group eligible for Medicaid but ineligible for AFDC had been "Ribicoff children." States could choose to cover children who met the financial

expansions took place as a result of the Omnibus Budget Reconciliation Acts (OBRA) of 1989 and 1990, which required states to cover pregnant women and children up to age 6 with family incomes up to 133 percent of the federal poverty level (in OBRA 1989) and to cover children born after September 30, 1983 with family incomes below 100 percent of the federal poverty level (in OBRA 1990).[2]

Following the Medicaid expansions, in 1997 the federal government chose to expand availability of public coverage further, establishing SCHIP, a block grant program that was designed to give states the means and flexibility to offer insurance coverage to more children. States responded by expanding their Medicaid programs further (typically by equalizing eligibility limits among children of different ages and raising the limits), implementing entirely new state-designed programs, or doing a combination of the two. Legislated eligibility limits increased further. These increases are evident in the first column of Table 1, which shows the average eligibility limits, as a percent of the federal poverty level, among children in each year of our data. Eligibility limits increased over the period from less than half the federal poverty line, on average, to around twice the federal poverty line by the end of the 1990s.

In addition to policies explicitly focused on health insurance, there was substantial policy activity surrounding work and welfare participation. Welfare reform, implemented by some states beginning in 1993 in the form of waivers of federal requirements and then implemented across the country with the passage of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA), was generally intended to encourage welfare recipients to work.

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requirements for AFDC but did not qualify due to family structure–e.g., children from two-parent families or in privately subsidized foster care.

[2]See U.S. House of Representatives Committee on Ways and Means (1987-2000) for details of the Medicaid expansions. A summary of the expansions and their effective dates is also available at http://lanfiles/williams.edu/~lshore/.

Both "carrot" (e.g. increased earnings disregards) and "stick" (e.g. work requirements and time limits) policies were adopted. Such policies are likely to have an effect on children's health insurance coverage, since they encourage families to leave the welfare rolls and begin work. One potential effect is to reduce Medicaid coverage for children, since participation in the AFDC program conferred automatic Medicaid coverage. However, to reduce the chance that children lost insurance, PRWORA required states to provide Medicaid coverage to any family that met the pre-PRWORA welfare eligibility limits. The other potential effect is on private coverage–as mothers began to work they increased their chances of obtaining health insurance through an employer. To the extent that former welfare recipients are unable to find jobs offering health insurance benefits, however, the impact on private coverage transitions may be small. Welfare reform is indicated in the data by the presence of a statewide waiver or the implementation of Temporary Assistance to Needy Families (TANF) in place of AFDC. The waivers were implemented in various states over the period 1993-1996, and "turn off" once the state has put its TANF program in place, which started in 1996 but was done in most states in 1997 (the extent of implementation is summarized in columns 4 and 5 of Table 1). Along with the changes in the program rules, there was a general reduction in the maximum cash benefit (relative to the poverty line) available to families with no earnings throughout the period studied, from slightly less than half the poverty line, on average, to a little more than a third.

Along with welfare reform, the mid- to late-1990s saw a substantial increase in the EITC. The EITC increases the return to working since only workers are eligible for it, and initially the more the person works the more he or she is allowed to take home. The federal government increased the phase-in rate (the negative income tax rate) substantially, and many states followed suit with their own earned income credits. Over the period we study, the combined average

federal-state phase-in rate more than tripled (see column 7 of Table 1). As a result of this change and changes in the phase-out rates, the maximum credit also rose, increasing more than six-fold between 1986 and 2000 (Table 1, column 6)

III. Previous Literature

While previous work on health insurance dynamics has focused on adults and tends to cover an earlier time period than we study in this paper, several stylized facts have emerged from this work. Time spent uninsured appears to be bimodal, with the largest portion of the uninsured population spending only a short time uninsured, and a smaller but still sizable portion of the uninsured population remaining uninsured for a substantial period of time (Swartz and McBride 1990, Swartz, Marcotte, and McBride 1993a). Similar patterns have been found for time spent on Medicaid (Short, Cantor, and Monheit 1988). Researchers who have estimated multivariate models of insurance transitions have found that time spent on Medicaid is affected by economic conditions and demographics (Berger and Black 1998) as well as by AFDC and Medicaid income limits (Short and Freedman 1998).

In addition to these studies of health insurance dynamics, there has been a substantial literature examining the impacts of various policy changes on levels and changes in health insurance coverage for children. Beginning in 1996, a series of papers examined the effect of expanded public insurance eligibility on coverage (see, for example, Cutler and Gruber (1996), Dubay and Kenney (1996), LoSasso and Buchmueller (2004), and Shore-Sheppard (2008)). These studies estimated cross-sectional models of the relationship between public insurance eligibility and private coverage, public coverage, and no insurance, finding varying amounts of private coverage reduction attributable to public insurance expansions, from no significant

reduction to 50 percent, depending on the methodology and the time period studied, although the preponderance of evidence indicates that the degree of crowding out was slight (see Shore-Sheppard 2008 for a discussion of the merits of various approaches taken in the literature).

Other studies have used longitudinal data (though not the dynamic models used in this paper) to examine insurance coverage for children following the expansions, again focusing on insurance substitution. Blumberg, Dubay, and Norton (2000) compare the change in insurance status for children who became eligible between the first and last interviews of the 1990 SIPP panel with the change for children who remained ineligible due to their age. They find evidence that the probability of a transition from private coverage to public coverage increased, the probability of a transition from no insurance to private coverage was unchanged, and the probability of no transition out of the uninsured state declined among eligible children relative to ineligible children. Similarly, Ham and Shore-Sheppard (2005) find that while insurance type is quite persistent among children in the SIPP, children who have been eligible for Medicaid longer are more likely to be enrolled in Medicaid but are no more likely to have lost private coverage.

The final strand of literature that informs our work is studies of the effects of welfare reform on health insurance coverage among potentially welfare-eligible women. In a previous paper (Ham, Li, and Shore-Sheppard forthcoming) we find evidence that welfare reform was associated with a reduction in the probability of Medicaid coverage and a somewhat offsetting increase in private coverage among single mothers with less than a high school education, however we find that any effect of welfare reform was concentrated among minority women, particularly Hispanic immigrants. Our results are broadly consistent with the findings of the majority of previous work in this literature, including the work of Kaestner and Kaushal (2003), Bitler, Gelbach, and Hoynes (2005), and Cawley, Schroeder, and Simon (2006), although other

authors (Borjas 2003 and DeLeire, Levine, and Levy 2006) find that welfare reform either left health insurance coverage status unaffected or even increased the probability of having health insurance coverage (particularly for some demographic groups).

In this paper we draw together the insights gained from each of these related literatures. We begin by assembling descriptive evidence on coverage dynamics among children, and then move to estimating formal models of insurance transitions in order to examine the separate impact of changes in policies affecting children's health insurance while accounting for demographics. Like the earlier dynamic literature on women's health insurance, we analyze transitions across health insurance states—in our case, covered by private, covered by public, and uninsured.

IV. Data

Our primary data source is the Survey of Income and Program Participation (SIPP), a series of longitudinal data sets collected for a random sample of the U.S. population by the Census Bureau. The SIPP is collected in a series of panels, each one containing approximately 17,000 households, on average. For ease of interviewing, the entire sample is randomly split into four rotation groups, and one rotation group is interviewed each month. Each rotation group in a SIPP panel is interviewed once every four months about employment and program participation during the previous four months (termed a wave). We use the 1986, 1987, 1988, 1990, 1991, 1992, 1993, and 1996 panels, which cover the period from October 1985 to February 2000 (the 1989 panel is not used because it was ended after only three waves). The length of each SIPP panel varies: 28 months for the 1986 and 1987 panels, 24 months for the 1988, 32 months for the 1990 and 1991 panels, 40 months for the 1992 panel, 36 months for the 1993 panel, and 48

months for the 1996 panel. A new panel is introduced each year or every few years, which yields more than one panel with data covering a particular point in time.

Our analysis sample is composed of children who are younger than 19 years old, are not the head or spouse of their own family, and live in states that are identified in the SIPP (41 states and the District of Columbia are identified—the others are grouped for confidentiality). To address the possibility that our results may be driven by spurious transitions (for example when a child is erroneously coded as having public insurance in a given period although in fact he does not have public insurance in that period nor in the preceding or following periods), we recode the data to eliminate any spells of one month duration except for those occurring at the beginning or end of the sample period.

Another measurement issue in the SIPP is that of "seam bias." Census Bureau researchers have shown that there are a disproportionate number of transitions in the fourth (interview) month (see, e.g. Young 1989, Marquis and Moore 1990). The approach to this problem that has been used in the past is to use index functions or transition rates that apply to the four month period covered by the interview. However, this approach has the disadvantage that the information on the timing of transitions that reportedly occurred in months other than the seam month is lost. To avoid this disadvantage, we use the data in monthly form and follow our earlier suggestion (Ham, Li, and Shore-Sheppard 2008) to put a dummy variable for the fourth month in each transition rate equation as a simple alternative to a more complex seam bias correction.

Using the state of residence information available in the SIPP, we link information from other sources to our data, including the Medicaid or SCHIP eligibility limits applying to each child, welfare and welfare reform variables, state-level Medicare expenditure data, the EITC

maximum credit and initial phase-in rate applying to each family, the monthly unemployment rate in the state, and the minimum wage in the state. (Information about the sources of these variables is provided in the Data Appendix.) Means by year of each of these variables are in Table 1.

V. Estimating Dynamic Models of Children's Health Insurance

A. Econometric Approach

To examine the dynamics of children's health insurance, we estimate discrete time hazard models of insurance transitions. Insurance can be obtained through a variety of means—most commonly through a parent's employer, but also by purchase in the individual market, by enrollment in Medicaid or SCHIP through expansion eligibility, or automatically as a consequence of enrollment in a qualifying welfare program. The latter method of obtaining insurance complicates our analysis somewhat, since transitions to and from public insurance obtained through welfare participation may reflect different underlying behavior than other public insurance transitions. Because of this, we do not analyze a child's health insurance status while his or her family is on welfare. Instead we estimate the equivalent of a switching regression in a duration model. We estimate on-welfare and off-welfare hazards which determine whether a child is in a family receiving welfare, and if the child is not in a family receiving welfare then we estimate insurance transitions.[3] We discuss the transition rates for the insurance states first, followed by the welfare transitions.[4] We describe both transitions out of

[3] We do include a child's previous time on welfare (and thus Medicaid) in calculating duration in public insurance spells, however.

[4] In about two percent of the person-months in the data, individuals report having both public and private insurance. Since it would be prohibitively complex to add a fourth state ("both public and private") to the model, we consider months with both to be part of a private insurance spell. In future drafts we will examine the robustness of this assumption to two

fresh spells—spells beginning after the start date of the sample—and *left censored or interrupted spells*—spells in progress at the start date of the sample.

Define the transition intensity or transition rate (Lancaster 1990) for moving from a fresh spell of private insurance (that started at calendar time τ) to no insurance (i.e. a transition to being uninsured) conditional on being on private insurance for t months as

(1a) $\lambda_{pni}(t \mid \bullet, \theta_{pni}) = \left[1 + \exp -(h_{pn}(t) + \gamma_{1pn} X_i(t+\tau) + \gamma_{2pn} L_{is}(t+\tau) + \theta_{pni}\right]^{-1}.$

where $h_{pn}(t)$ denotes duration dependence, $X_i(t+\tau)$ is a vector of possibly time-changing explanatory variables at calendar time $t+\tau$ that capture demographic factors, economic conditions at $t+\tau$, a measure of the cost of health services in the state at $t+\tau$, and other policies at $t+\tau$, $L_{is}(t+\tau)$ represents the Medicaid/SCHIP income limits for the child in state s at $t+\tau$, and θ_{pni} is an unobserved heterogeneity component which is independent across children in different families but not necessarily across children in the same family.[5] Define the transition rate for moving from a fresh spell of private insurance to public insurance conditional on being on private insurance for t months as

(1b) $\lambda_{pmi}(t \mid \bullet, \theta_{pmi}) = \left[1 + \exp -(h_{pm}(t) + \gamma_{1pm} X_i(t+\tau) + \gamma_{2pm} L_{is}(t+\tau) + \theta_{pmi}\right]^{-1}.$

(Note that the coefficient γ_{2pm} indicates the importance of "crowding out".) The overall probability of leaving private insurance is given by

(2) $\lambda_{pi}(t \mid \bullet, \theta_{pni}, \theta_{pmi}) = \lambda_{pni}(t \mid \bullet, \theta_{pni}) + \lambda_{pmi}(t \mid \bullet, \theta_{pmi}).$

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alternative assumptions (considering months with both to be part of a public insurance spell, and dropping children who ever report having both types of coverage simultaneously).

[5] For ease of exposition in this draft we treat children from the same family as independent.

We define the transition intensities out of public insurance as

(3) $\lambda_{mki}(t \mid \bullet, \theta_{mki}) = \left[1 + \exp -(h_{mk}(t) + \gamma_{1mk} X_i(t+\tau) + \gamma_{2mk} L_{is}(t+\tau) + \theta_{mki}\right]^{-1}, \; k = p, n$

Finally, we define the transition intensities out of no insurance as

(4) $\lambda_{nki}(t \mid \bullet, \theta_{mki}) = \left[1 + \exp -(h_{nk}(t) + \gamma_{1nk} X_i(t+\tau) + \gamma_{2nk} L_{is}(t+\tau) + \theta_{nki}\right]^{-1}, \; k = p, m.$

Note that we define the overall transition rate out of public insurance $\lambda_{mi}(t \mid \bullet, \theta_{mn}, \theta_{mp})$, and the overall transition rate out of no insurance $\lambda_{ni}(t \mid \bullet, \theta_{np}, \theta_{nm})$ analogously to (2).[6]

The density of a spell of no insurance of length t is given by

(5) $$f_{ni}(t \mid \bullet) = \iint \prod_{r=1}^{t-1} \lambda_{ni}(r \mid X_i(r+\tau), L_{is}(r+\tau), \theta_{np}, \theta_{nm})) \\ \lambda_{ni}(t \mid X_i(t+\tau), L_{is}(t+\tau), \theta_{np}, \theta_{nm}) dG(\theta_{np}, \theta_{nm})$$

where $G(\theta_{np}, \theta_{mm})$ is the distribution function for $(\theta_{np}, \theta_{mm})$. An interesting quantity for policy purposes is the expected duration of a spell of no insurance

(6) $ED_n(X_i, L_i) = \sum_{r=1}^{\infty} r f_{ni}(r \mid \bullet),$

where (X_i, L_i) represents the entire history of $X_i(r+\tau), L_{is}(r+\tau)$. The idea is that one can see how (6) changes as demographics, economic conditions, the cost of health care and state Medicaid/SCHIP income limits change for each individual.

To analyze our data, we must also consider the *left censored spells*, or the spells in progress at the start of the sample. These spells are difficult to analyze, particularly since we do not observe the length of the spells prior to the start of the sample.[7] To deal with them, we follow

[6] To keep the notation manageable, we have dropped the 'i' subscript on the unobserved heterogeneity terms.

[7] While the SIPP survey attempts to record the start date of insurance spells, this

the pragmatic suggestion of Heckman and Singer (1984) and give the transition rates for these spells different parameters from the fresh spell transition rates. In some cases researchers discard these left censored spells. While this strategy is temptingly simple, excluding these spells can seriously bias the estimates of the fresh spell transition rates (Ham and LaLonde 1996), although Eberwein, Ham and LaLonde (1997) argue that the Ham and LaLonde result may be due to the special circumstances of the program they investigate (National Supported Work). Perhaps more importantly, time spent in the left censored spells constitutes a significant portion of all time spent in a health insurance state over the SIPP sample period, and this is especially true for the welfare durations we consider below. Thus we also analyze the left censored spells. We define the conditional transition intensity for leaving a left-censored spell in health insurance state j to move to state k analogously as

$$(7) \qquad \lambda_{j'k}(t \mid \bullet, \theta_{j'k}) = \left[1 + \exp -(h_{j'k}(t) + \gamma_{1j'k} X_i(t+\tau) + \gamma_{2j'k} L_{is}(t+\tau) + \theta_{j'k}\right]^{-1}$$

where $j' = n', m' p', k = n, m, p, k \neq j'$ and n' denotes a left censored no insurance spell, m' denotes a left censored public insurance spell and p' denotes a left censored private insurance spell.

For this draft we do not maximize the entire likelihood function. Instead we assume there is no heterogeneity, and we use the approximation

$$(8) \qquad 1 - \lambda_{pi}(t \mid \bullet) \approx 1 - \lambda_{pni}(t \mid \bullet) - \lambda_{pmi}(t \mid \bullet) + ((\lambda_{pni}(t \mid \bullet) * \lambda_{pmi}(t \mid \bullet)),$$

which allows us to estimate the parameters of the different transition rates separately using a standard software package.[8]

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information is missing for most of the children in the data.

[8] While we would not want to make this approximation in a final draft of the paper, our previous work and that of Jurajda (2002) indicates that it makes very little difference to the

As discussed above, we estimate on-welfare and off-welfare hazards to determine whether a family is on welfare. We define the hazard function for leaving welfare conditional on having been on welfare for the previous *t* periods as

$$\lambda_{ki}(t \mid X_i(t+\tau), B_{is}(t+\tau), \theta_{ki}) = \left[1 + \exp -(h_k(t) + \gamma_{1k} X_i(t+\tau) + \gamma_{2k} B_{is}(t+\tau) + \theta_{ki}\right]^{-1}, k = w, w'. \quad (9)$$

In equation (9) *w'* denotes a left censored on-welfare spell in progress at the start of the sample (with duration measured from the start of the sample), *w* denotes a fresh welfare spell which began after the start of the sample, and $B_{is}(t+\tau)$ reflects (maximum) welfare benefits in place in state s at calendar time $t+\tau$. The hazard function for leaving an off-welfare spell, (i.e. entering welfare), is given by

$$\lambda_{ki}(t \mid X_i(t+\tau), B_{is}(t+\tau), \theta_{ki}) = \left[1 + \exp -(h_k(t) + \gamma_{1k} X_i(t+\tau) + \gamma_{2k} B_{is}(t+\tau) + \theta_{ki}\right]^{-1}, k = ow, ow'. \quad (10)$$

In equation (10) o*w'* denotes a left censored off-welfare spell in progress at the start of the sample (with duration measured from the start of the sample) and o*w* denotes a fresh off-welfare spell which began after the start of the sample. The index function determining whether the child goes to public insurance when his or her family leaves welfare at calendar time t is given by

$$M_{lt}^{*} = \phi_m X_{it} + \pi_m L_{sit} + \theta_m + \nu_{mit}. \quad (11a)$$

Thus the probability that the child goes to public insurance is

$$\Pr(M_{it} = 1 \mid \theta_m) = \Pr(M_{it}^{*} > 0 \mid \theta_m) = \Pr(\nu_{mit} > -[\phi_m X_{it} + \pi_m L_{sit} + \theta_m]). \quad (11b)$$

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results.

The index function determining whether the child goes to private insurance when his or her family leaves welfare at calendar time t is given by

(12a) $P_{lt}^{*} = \phi_p X_{it} + \pi_p L_{sit} + \theta_p + \nu_{pit}$.

The probability that the child goes to private insurance when the family leaves welfare at calendar time t is

(12b) $\Pr(P_{it} = 1 | \theta_p) = \Pr(P_{it}^{*} > 0 | \theta_p) = \Pr(\nu_{pit} > -[\phi_p X_{it} + \pi_p L_{sit} + \theta_p])$.

For this draft we assume that ν_{pit} and ν_{mit} are independent, although it is straightforward to relax this. Note that we would expect θ_p and θ_m to be negatively correlated although we will continue to assume no heterogeneity for this draft.

B. Predicted Policy Effects

We expect the policy changes that expanded access to public insurance to increase the probability a child obtains public coverage, possibly at the expense of private coverage, while the policy changes restricting welfare are predicted to reduce the probability a child obtains public coverage through welfare. Expansions of the EITC have ambiguous effects on insurance coverage–they increase the return to working, which may increase transitions into private coverage, but if the jobs obtained do not offer insurance to their workers, it is possible that transitions out of public coverage may increase while private coverage transitions remain unchanged. Also, conditional on working family incomes will be higher, which should raise the demand for private insurance. Increases in the minimum wage are also predicted to have ambiguous effects on insurance coverage, both because the minimum wage may have ambiguous effects on employment and for many of the same reasons that the EITC is predicted to have ambiguous effects. Increases in the unemployment rate are predicted to increase transitions out

of private insurance, and to decrease transitions into private insurance from public insurance or from no insurance, as family heads are less likely to find jobs offering health insurance benefits. Health care price increases (which we proxy for with state-level Medicare expenditures per enrollee) may also have an ambiguous effect, with employees being more likely to value health insurance and therefore seek jobs offering it when prices are higher, but with employers and states being more likely to restrict access to coverage due to higher costs. We include year dummies to control for unobserved national-level insurance trends and macroeconomic shocks.

Demographic variables that increase a family head's earnings capability, such as age and education, are expected to increase transitions out of public insurance and reduce transitions into public insurance. We would also expect higher education levels to raise income and therefore increase the demand for private insurance–thus we would expect higher education levels to decrease the transition rate out of private insurance and increase the transition rate into private insurance. The demographic variables for race and ethnicity will affect transitions because they affect income. They may also reflect higher transaction costs of obtaining public insurance for Hispanics who do not have a good command of English or who may be concerned about immigration status. Following the literature we include family structure and the age of the child. The latter variable is important since the Medicaid/SCHIP income limits depend on the age of the child (as well as the time period and state of residence), and age may directly affect the transition rates if parents are reluctant to pay the transaction costs of enrolling their child in Medicaid if they only have a short period of eligibility, as will tend to be true for older children. Finally, we enter the sex of the child to see if parents perceive different benefits from enrolling a male child and a female child.

VI. An Overview of Children's Health Insurance, 1986-1999

Figures 1-3 show estimates of coverage or uninsured rates by month in the SIPP data. Each point in the figure is the mean rate for a month from a particular panel, calculated using the weight for the first year of the panel. Because the SIPP is composed of overlapping panels, most months have data from more than one panel. The data are sparse in early 1990 and 1995, however, as those years were only covered by at most one panel (the 1990 and 1993 panels, respectively). Another caveat is that since the SIPP, like all panel data sets, suffers from attrition, means from later in each panel are likely to be more noisy as they are estimated from fewer observations. In addition to plotting the estimated rates, we plot the trend smoothed using a locally weighted regression smoothing method (lowess).

According to the SIPP, uninsurance rates fell slightly in the early part of the period, were flat through the early 1990s, and then fell again at the end of the period. Looking at the underlying types of coverage, it appears that the decline in uninsurance can be attributed to a slight increase in private coverage, with public coverage remaining flat. In the early 1990s, however, the flatness of the uninsurance rate masks significant changes in public and private coverage, with public coverage increasing substantially and private coverage declining. This was the period of the initial Medicaid expansions as well as a recession, and this figure makes clear why researchers focused on examining whether the expansions led to crowding out. At the end of the period, the fall in uninsurance appears to be due to increasing levels of private coverage that compensated for a decline in public coverage rates. While all three of the trends have some cyclical features, private coverage rates appear most clearly cyclical, declining during the slight recession of the early 1990s and rising during the economic boom of the late 1990s. This is not surprising, as private coverage is tied so closely to employment.

We next move from examining static coverage rates to investigating transitions. Descriptive statistics by spell type are presented in Tables 2 and 3. The most common type of spell is an interrupted private insurance spell, which is not surprising given that private insurance coverage levels are much higher than public coverage or uninsured levels. Many children start the sample on private coverage and never leave it, which can be seen by comparing the number of right-censored spells with the total number of spells. Overall, private insurance spells tend to be longer than other types of spells, followed by public insurance spells and then no insurance spells. The spell lengths include right-censored spells, so mean elapsed duration of all kinds of spells would be considerably higher than the numbers shown here. The length of the interrupted spells will be underestimated since we do not know the start date of the spell and instead measure duration from the start of the sample. Looking at the distribution of spell lengths, spells either seem to end fairly quickly–within 8 months–or to continue for a longer time.

Table 3 contains demographic characteristics of children in the data (as of the first month of each spell). Consistent with evidence from cross-sectional data, younger children, nonwhite children, children with less-educated or disabled family heads, and children in female-headed families or families with more children tend to be more likely to have public or no insurance. Unsurprisingly, children in private or uninsured spells have lower Medicaid and SCHIP eligibility levels. Children in welfare spells are also more likely to be nonwhite, to have a less-educated family head, to be in a female-headed household, or to have a disabled head, and much less likely to have anyone in their family working. The connection between private insurance and the labor market is clear: in 85% of the first months of fresh private insurance spells and 96% of the first months of interrupted private insurance spells the family has at least one earner. However, in 81 percent of the first months of fresh no insurance spells and 80 percent of the first

months of interrupted no insurance spells the family had at least one earner, indicating that despite the connection to the labor force, the families were not obtaining insurance for their children through their employer.

In Figure 4 we graph the rate at which transitions into insurance occur, while in Figure 5 we graph the rate of transitions to uninsurance. Over the 1986-1999 period, children appeared to gain and lose insurance at a fairly steady rate, despite the many changes in policy. The rate at which children gain insurance appears to have fallen slightly at the beginning and the end of the period, though the estimated rates are quite noisy, indicating that parents had more difficulty obtaining insurance for their children in these years. Between about 1991 and 1996, however, the entry rate appeared to rise slightly. The pattern in insured to uninsured transitions is very similar to the insurance entry pattern, rather than mirroring it as one might expect if transitions out of insurance increased when transitions into insurance fell. Instead, both sets of transition rates appeared to rise slightly between 1991 and 1996, indicating an overall higher level of turnover in insurance during this period.

In order to understand transitions between the insured and uninsured states better, we next plot estimated unconditional transition probabilities for the six different types of transitions: no insurance to public insurance, no insurance to private insurance, public to none, public to private, private to none, and private to public, along with the probability of observing no transition at all. For clarity in the graph and to ensure that all of the transition probabilities are calculated using enough data, we average all of the observed transitions over the year for the first year of each SIPP panel (once again, because there was no panel in 1989, 1994, or 1995, we do not have estimates for those years).

The observation that turnover appeared to increase post-1991 is borne out in this graph, as the probability of no transition at all falls substantially. Looking at transitions by type, the increase in the transition probability appears to be due to an increase in transitions involving public insurance, with increases in all four types of transitions into and out of public coverage. Private-to-public transitions increased, but so did public-to-private. One possible explanation for this observed pattern is as public insurance eligibility was expanded further up the income distribution, a larger number of children had encounters with public coverage. Alternatively, as welfare reform further loosened the automatic nature of Medicaid enrollment, public coverage became more tenuous. We investigate these hypotheses further using our econometric model. Before turning to the model, however, it is informative to compare the transitions out of the various insurance states. This figure suggests that children who are in an uninsured spell are more likely to transition to public insurance and less likely to transition to private insurance at the end of the period. Similarly, children who are in a private insurance spell are less likely to lose coverage altogether than to replace their private coverage with public coverage. Finally, as noted previously both types of transitions out of public coverage increased. In the next section, we investigate the sources of these changes to determine whether they can be attributed to the policy changes that took place during this period.

VII. Results from Hazard Models

Our preliminary empirical results are presented in Tables 4-7. For each type of state (welfare, no insurance, public insurance, and private insurance), we estimate separately the four transition intensities (interrupted and fresh entry into and exit from the state) using a logit model (the numbers in the table are logit coefficients). Turning first to the welfare models in Table 4,

we find results that largely accord with our expectations. Higher welfare benefits tend to reduce the probability of exit from welfare and to increase the probability of entry, as do higher unemployment rates. Children in months and states where TANF has been implemented have a higher probability of leaving welfare, and a lower probability of starting welfare, although these results only hold for interrupted welfare and non-welfare spells. Surprisingly given the literature on welfare participation and the EITC (see Grogger 2004, for example), we find no relationship or (in the case of welfare entry from interrupted off-welfare spells) a perverse relationship between more generous EITC and welfare transition probabilities. Similarly, our results indicate no relationship or a perverse relationship between the presence of a welfare waiver and the probability of exiting from a fresh welfare spell. The demographic variables generally enter the model with the expected signs (though the coefficients are not always statistically different from 0)–children who are younger, nonwhite, Hispanic, in a single-parent family, in families with more children, and who have less educated or disabled family heads are less likely to exit welfare and more likely to enter. There is evidence of duration dependence in both welfare and non-welfare spells.

The models for the other three insurance states also show a reassuringly low rate of hard-to-explain signs for the demographic variables. Variables indicating that a family faces better labor market prospects tend to increase transitions to private insurance from both states and to reduce exits from private insurance and entries to no insurance and public insurance. More interesting are the policy parameters. As expected, higher Medicaid/SCHIP eligibility limits increase the probability of a transition to public insurance from both interrupted and fresh spells of no insurance, however they also appear to increase the probability of a transition to private

insurance. One explanation for this result could be policy endogeneity–states may be more likely to increase coverage when their economies are thriving. However, we control for unemployment rates (which have the expected negative sign for the transition to private insurance) which should account for such policy endogeneity. An alternative explanation is that because the expansions target children in families further up the income distribution, such children are more likely to be suffering short-term loss of coverage that ends with a parent obtaining a job offering health insurance. There is also some evidence of an effect of the expanded EITC, although the different EITC parameters, which would be expected to have similar effects, instead enter in opposite directions and significantly only for interrupted none-to-private and fresh none-to-public transitions. Higher unemployment rates appear to reduce the probability of transitioning to private insurance from no insurance, as would be expected since higher unemployment rates make obtaining a job with health insurance benefits more difficult. Higher levels of Medicare spending per enrollee in a state, our proxy for higher health care costs, also reduce the probability a child gains insurance, although the effect is only statistically significant in the case of transitions to private insurance from interrupted uninsured spells.

Higher levels of spending per enrollee also reduce transitions out of interrupted public insurance spells (Table 6), perhaps because parents are more concerned about maintaining their child's enrollment when health care costs are high. Similarly, worse economic conditions tend to increase transitions from public insurance to no insurance and reduce transitions to private insurance. Higher minimum wages and higher Medicaid/SCHIP eligibility limits have the opposite effect, reducing transitions out of public insurance to no insurance and increasing transitions to private insurance. The latter effect on public to private transitions may be a result

of expanding public insurance eligibility up the income distribution, so that families with typically stronger attachment to the labor market spend some time in public insurance, leaving for private insurance rather than becoming uninsured. Once again the EITC variables have inconsistent effects, not allowing us to draw any firm conclusions about the impact of the EITC on health insurance coverage.

Finally, we examine exits from private insurance (Table 7). Here higher public insurance eligibility limits consistently increase transitions from private insurance to public insurance and reduce transitions to no insurance. This finding is consistent with crowding out, though it is also consistent with families who are being forced to leave private insurance for reasons other than the availability of public coverage choosing to enroll their children in public coverage rather than letting them become uninsured. Interestingly, none of the other policy variables enter in a statistically significant way, though once again the unemployment rate enters as expected, with higher unemployment rates increasing transitions to no insurance from both types of private insurance spells. As before, variables indicating greater attachment to the labor force tend to reduce all types of transitions from private insurance.

VIII. Conclusion

In this paper, we use data from the 1986-1996 SIPP panels to provide both descriptive and analytical evidence about the dynamics of children's health insurance between 1986 and 1999. We find that insurance turnover increased during this period, with a marked increase in transitions involving public insurance. This increase in turnover was evident both in the unconditional transition probabilities and when we conditioned on policies in the econometric

models, indicating that the increase was not due solely to the policy changes. Children who gained insurance were more likely to gain public insurance and less likely to gain private insurance at the end of the period than they were in the beginning. Also by the end of the period, children who lost private coverage became more likely to move into public coverage and less likely to lose coverage entirely.

Our preliminary estimates of discrete time duration models for transitions of children's insurance coverage across the insurance states of public insurance, private insurance, and no insurance show that in addition to demographic and family structure factors, several of the policy changes that took place over the 1990s had important effects on health insurance transitions for children. Examining welfare participation as the primary way for a child to obtain public insurance, not surprisingly we find that higher welfare benefits tend to reduce welfare exit and spur welfare entry, as do higher unemployment rates. However, we also find some evidence that the implementation of TANF (though not welfare waivers nor the expansion of the EITC) tended to increase welfare exit and reduce entry. In the case of insurance obtained while not on welfare, we find strong and consistent evidence that the expansions of Medicaid and the implementation of SCHIP (as proxied by higher income limits) increased transitions out of uninsurance, explaining the pattern we saw in the descriptive statistics. Better economic conditions (as proxied by lower unemployment rates) also tend to increase transitions out of uninsurance, particularly transitions to private insurance. We find evidence that higher health care costs (as proxied by higher spending on Medicare in a state) tend to reduce the frequency of transitions– both transitions into insurance and transitions out of insurance.

Overall, our results indicate that policies affecting children's health insurance directly have important effects on children's health insurance dynamics, not surprisingly. Of the other policy changes that took place, we find evidence of an impact of welfare reform on coverage, but only a weak relationship between coverage and expansions of the EITC. We also find that cyclical factors (as reflected in unemployment rates) and factors affecting the cost of health care influence insurance dynamics. Finally, we find some evidence of a secular trend towards an increase in the rate of transitions even after accounting for changes in policy.

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Data Appendix

Information about the policies and economic conditions studied in our analysis was gathered from a variety of sources and merged to the SIPP data by date, state, and (in some cases) age of the child or family size or structure. Information about the sources of each of these variables is given below.

Medicaid or SCHIP eligibility limits: Information on the Medicaid expansions was obtained from a variety of sources, particularly the National Governors' Association Maternal and Child Health (MCH) Updates. Information on SCHIP eligibility limits was gathered from the Centers for Medicare and Medicaid Services (CMS) Fact Sheets and the National Governors' Association state SCHIP summaries. Other sources include some reports from the Kaiser Commission on Medicaid and the Uninsured and press releases from the Department of Health and Human Services. Information on the income limits was merged to the SIPP data by date, state, and age of the child.

Economic conditions: State-level unemployment rates were obtained from the Bureau of Labor Statistics, as were data on the level of the minimum wage in each state. These data were merged to the SIPP data by year and state.

AFDC/TANF rules: Information on the maximum benefit available by state, year, and size of family was obtained primarily from the Green Book and from the Urban Institute for years prior to welfare reform and from the Urban Institute's Welfare Rules Database for the years following welfare reform. Information on the welfare waivers states were granted and the TANF implementation dates came from the Council of Economic Advisors, the State Policy Documentation Project, and the Office of the Assistant Secretary for Planning and Evaluation in the Department of Health and Human Services.

EITC parameters: The maximum credit for the EITC for each state, year, number of children, and filing status was calculated using the NBER's TAXSIM tax calculator. Data on the EITC initial phase-in rate (also by state, year, number of children, and filing status) came from Jon Bakija's IncTaxCalc tax calculator.

Health care costs: We used Medicare expenditures on personal health care per enrollee by state and year as our proxy for health care costs. These data were obtained from the Centers for Medicare and Medicaid Services.

Figure 1.

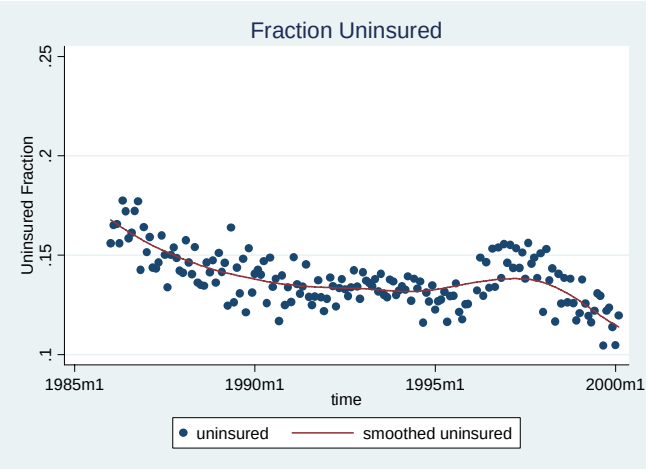

Figure 2.

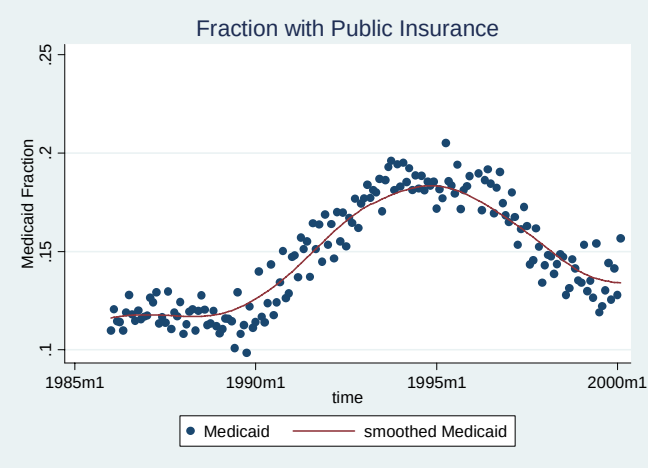

Figure 3.

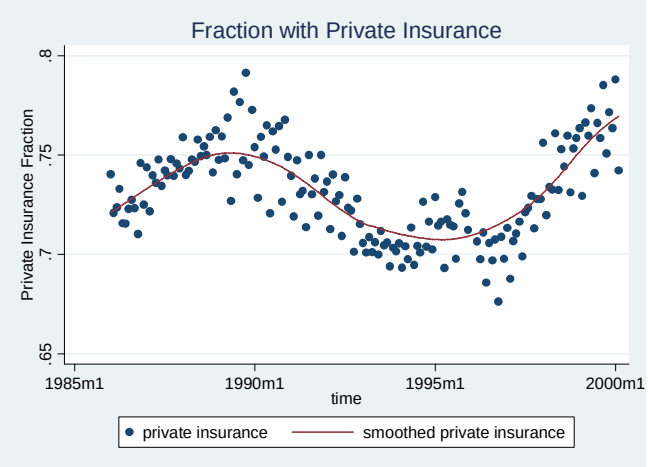

Figure 4.

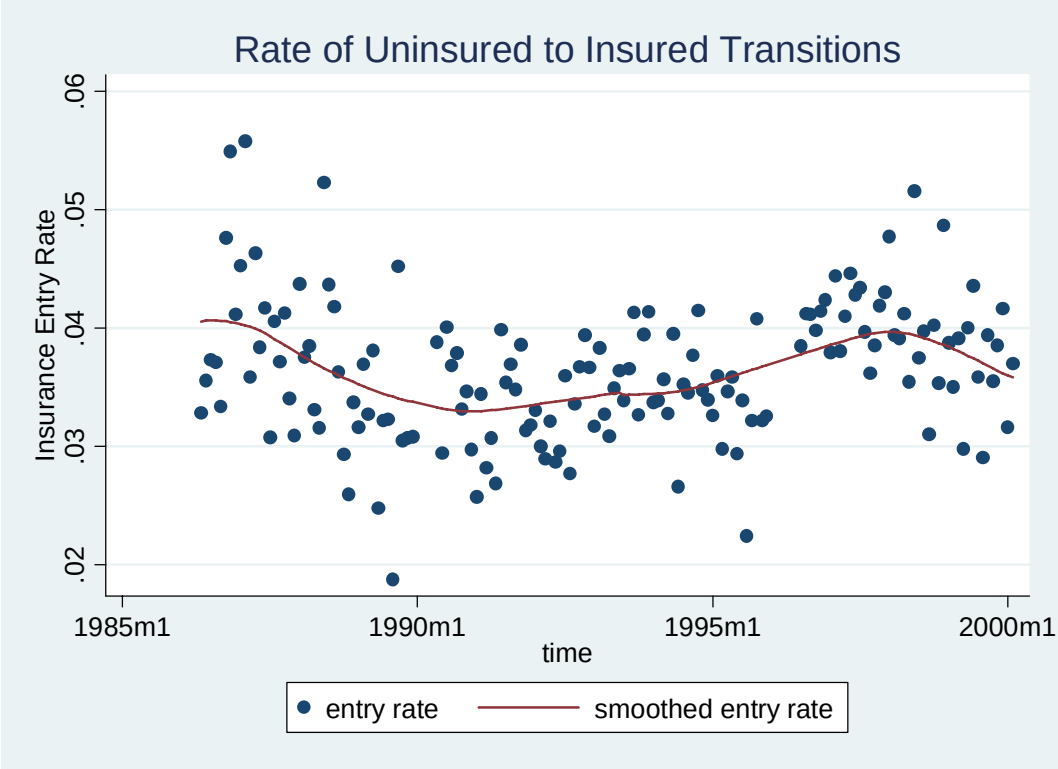

Figure 5.

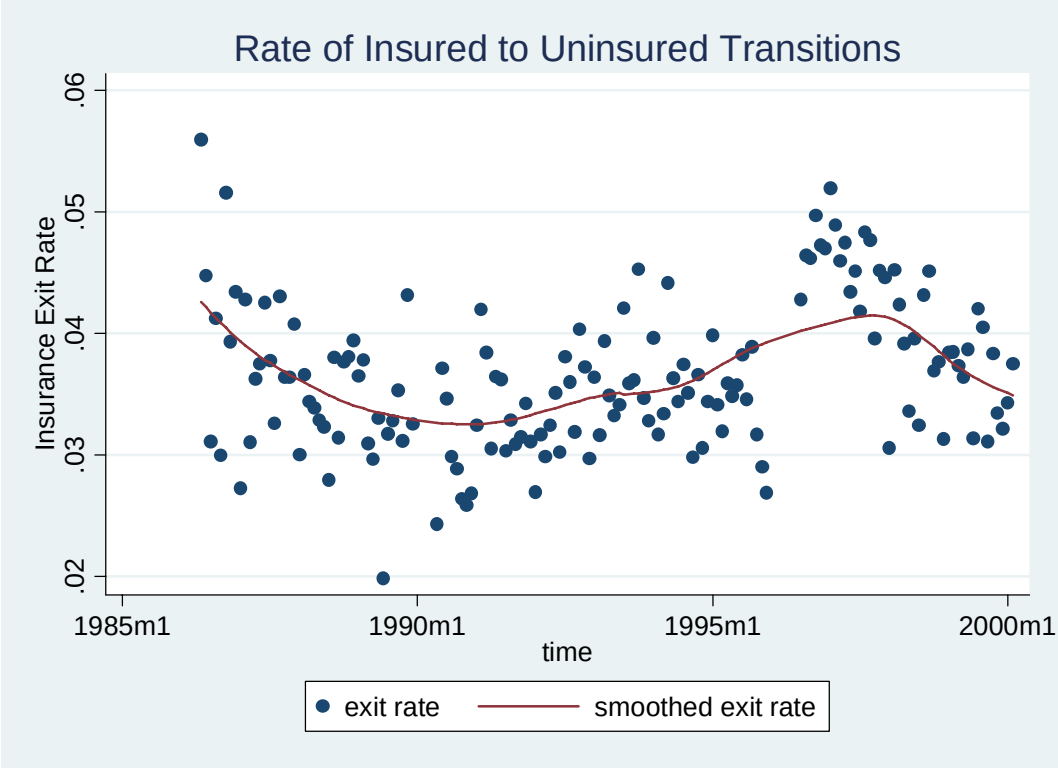

Figure 6: Transition Probabilities, First Years of SIPP Panels

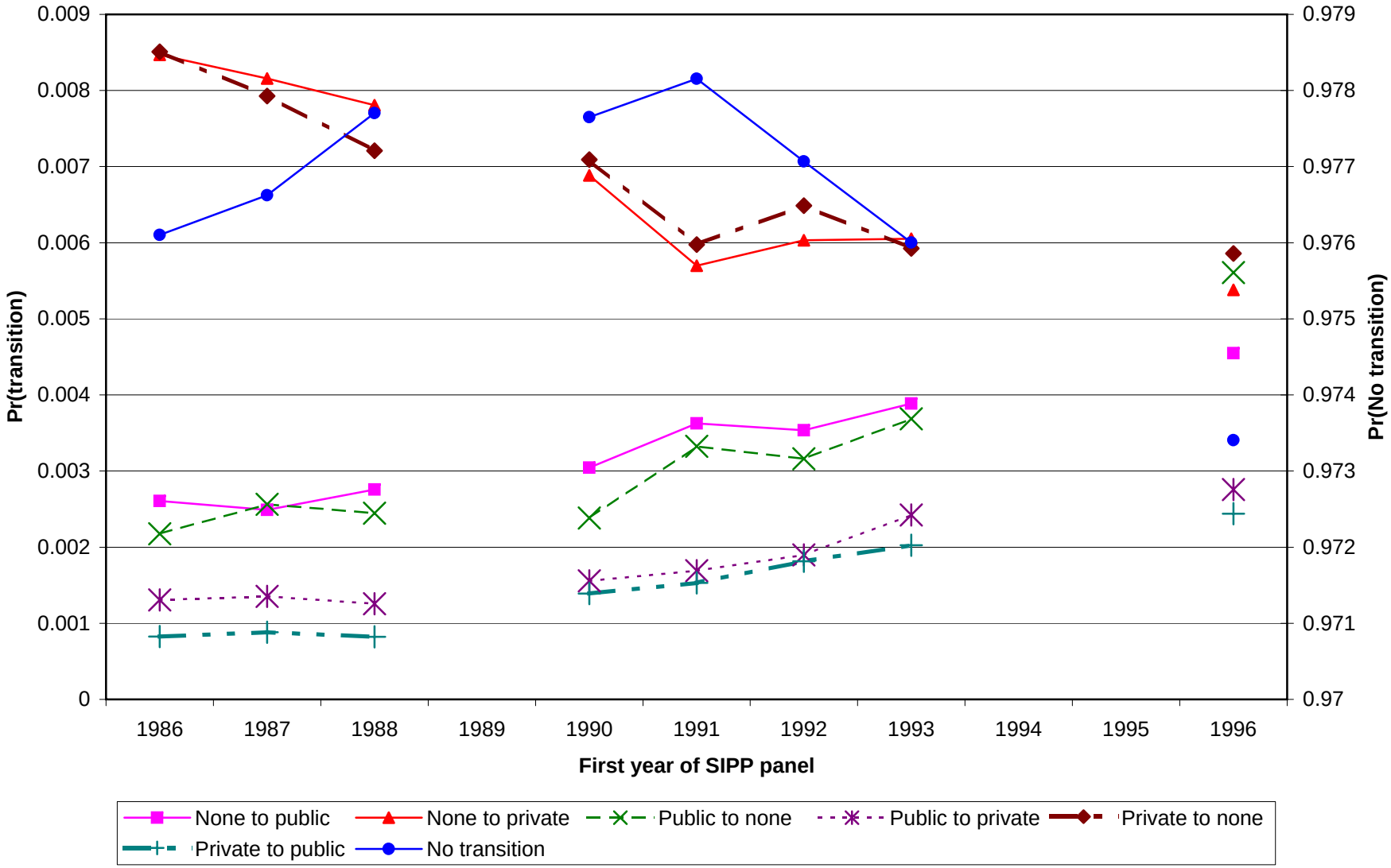

Table 1. *Means of Policy Variables, 1986-1996 SIPP*

Year	Medicaid/SCHIP elig. limit (%FPL)	Medicare exp. per enrollee	AFDC/TANF max. benefit (%FPL)	Major waiver implemented	TANF implemented	Fed. and state max. EITC credit	Fed. and state EITC phase-in rate	Unemployment rate	Minimum wage
1986	47.09	2410.65	47.19	0.00	0.00	548.82	10.98	7.06	3.35
1987	46.63	2539.89	46.63	0.00	0.00	855.97	13.97	6.30	3.36
1988	47.10	2709.66	45.78	0.00	0.00	878.53	13.96	5.70	3.43
1989	48.62	3026.44	44.13	0.00	0.00	923.83	14.10	5.44	3.52
1990	68.83	3241.83	43.10	0.00	0.00	965.58	14.08	5.68	3.81
1991	76.96	3463.00	42.13	0.00	0.00	1242.09	17.42	6.88	4.17
1992	89.06	3824.56	40.40	0.01	0.00	1390.13	18.40	7.60	4.28
1993	106.22	4086.69	38.27	0.23	0.00	1513.17	19.46	7.09	4.29
1994	109.31	4511.82	37.23	0.31	0.00	2469.42	29.64	6.20	4.30
1995	110.82	4944.68	36.32	0.36	0.00	2962.80	39.34	5.78	4.30
1996	105.76	5235.67	35.50	0.48	0.14	3305.92	39.55	5.51	4.43
1997	110.25	5487.42	34.11	0.04	0.93	3421.76	39.72	5.05	4.42
1998	157.50	5557.85	34.06	0.00	1.00	3534.58	39.76	4.58	4.78
1999	193.37	5432.49	34.48	0.00	1.00	3604.67	39.82	4.29	4.95
2000	208.24	5621.76	34.01	0.00	1.00	3699.23	40.12	4.07	5.01

Means are calculated over all person-months in the indicated year, and are weighted using the weights for the first year of the panel.

Table 2. *Welfare and Insurance Spells, 1986-1996 SIPP*

	Welfare Spells		Public Insurance Spells		Private Insurance Spells		No Insurance Spells	
	Interrupted Spells	Fresh Spells	Interrupted Spells	Fresh Spells	Interrupted Spells	Fresh Spells	Interrupted Spells	Fresh Spells
Number of Spells	11908	9032	19319	15997	84959	25212	19970	29757
Number of right-censored	6502	4322	10295	7285	70941	14567	8606	12125
Mean length (months)	16.7	8.77	16.07	8.66	23.67	9.88	12.39	6.63
(Standard deviation)	(12.3)	(7.5)	(12.19)	(7.46)	(13.74)	(8.79)	(10.93)	(6.09)
Spell distribution (%)								
1-4 months	23.54	45.58	16.57	46.38	9.89	44.69	24	60.79
5-8 months	16.3	21.67	21.23	21.35	11.13	18.21	27.5	18.13
9-12 months	10.12	12.08	12.87	11.35	7.79	10.87	12.83	8.97
13-16 months	7.73	7.03	8.71	7.7	6.24	7.39	8.13	4.77
17-20 months	6.83	5.18	7.1	5.11	5.86	6.04	5.73	3.24
21-24 months	7.92	3.48	7.39	3.18	10.51	4.45	6.12	1.75
25-28 months	5.84	2.6	5.52	2.36	7.57	3.53	3.99	1.1
> 28 months	21.72	2.38	20.61	2.59	41.02	4.81	11.7	1.25

Spell length is the length observed in the sample, and is calculated for both spells observed to end in the data and right-censored spells.

Table 3. *Individual Characteristics, by Type of Spell, 1986-1996 SIPP*

	Welfare Spells		Public Insurance Spells		Private Insurance Spells		No Insurance Spells	
	Interrupted Spells	Fresh Spells	Interrupted Spells	Fresh Spells	Interrupted Spells	Fresh Spells	Interrupted Spells	Fresh Spells
Age	6.15	7.12	5.56	7.02	7.95	8.28	7.83	8.21
Male	0.51	0.51	0.51	0.52	0.52	0.52	0.52	0.51
Black	0.41	0.34	0.34	0.26	0.11	0.22	0.18	0.20
Other Race	0.07	0.04	0.06	0.05	0.04	0.06	0.05	0.05
Hispanic	0.22	0.22	0.24	0.28	0.09	0.19	0.26	0.19
Age of the Head	30.67	32.16	30.57	32.90	36.85	34.62	34.59	35.26
Education of the Head	10.82	11.03	10.86	10.94	13.45	11.78	11.18	11.85
Head Disabled	0.22	0.25	0.20	0.20	0.10	0.15	0.14	0.16
Female Head	0.81	0.67	0.68	0.51	0.15	0.39	0.33	0.37
Male Only Head	0.02	0.03	0.03	0.04	0.03	0.04	0.06	0.05
One Earner	0.17	0.31	0.30	0.46	0.39	0.48	0.50	0.47
Two Earners	0.03	0.08	0.07	0.14	0.57	0.37	0.30	0.34
Number of Children	2.80	2.66	2.65	2.56	2.22	2.36	2.41	2.38
Medicaid/SCHIP Elig. Lim.	103.97	111.50	112.45	118.73	88.85	101.90	86.14	107.61
AFDC Max Benefit	44.57	39.69	41.88	38.09	41.74	38.43	38.61	37.78
Number of People	11908	7719	19319	12541	84959	21050	19970	23999

Table 4. *Welfare Exits and Entries, 1986-1996 SIPP*

	Welfare exit		Welfare entry	
	Interrupted	Fresh	Interrupted	Fresh
AFDC/TANF maximum benefit	-0.015	-0.006	0.004	0.012
(%FPL)	(0.001)**	(0.001)**	(0.001)**	(0.001)**
Major AFDC waiver implemented	0.057	-0.190	-0.073	-0.094
	(0.051)	(0.062)**	(0.048)	(0.073)
TANF implemented	0.385	0.163	-0.237	0.101
	(0.094)**	(0.103)	(0.107)*	(0.133)
Federal and state maximum	0.076	-0.079	-0.045	-0.043
EITC credit (/$1000)	(0.080)	(0.076)	(0.066)	(0.096)
Federal and state EITC initial	-0.013	0.013	0.028	-0.008
phase-in rate	(0.013)	(0.012)	(0.010)**	(0.015)
Unemployment rate	-0.084	-0.039	0.090	0.006
	(0.011)**	(0.013)**	(0.010)**	(0.016)
Minimum wage rate	0.012	0.038	0.070	-0.025
	(0.044)	(0.044)	(0.048)	(0.046)
Age	0.042	0.028	-0.043	-0.021
	(0.004)**	(0.004)**	(0.003)**	(0.005)**
Male	0.052	-0.040	-0.017	-0.027
	(0.029)	(0.033)	(0.027)	(0.039)
Black	-0.302	-0.170	0.663	0.292
	(0.033)**	(0.038)**	(0.034)**	(0.046)**
Other race	-0.667	-0.210	0.283	0.275
	(0.072)**	(0.081)**	(0.074)**	(0.092)**
Hispanic	-0.162	-0.071	0.169	0.080
	(0.040)**	(0.045)	(0.041)**	(0.057)
Family has single female head	-0.787	-0.573	1.778	0.438
	(0.043)**	(0.040)**	(0.033)**	(0.049)**
Family has single male head	-0.079	-0.228	1.039	0.487
	(0.116)	(0.102)*	(0.073)**	(0.118)**
Number of children in family	-0.142	-0.033	0.210	0.140
	(0.012)**	(0.013)*	(0.011)**	(0.015)**
Family head's education	0.052	0.037	-0.153	-0.064
	(0.007)**	(0.007)**	(0.005)**	(0.008)**
Family head disabled	-0.364	-0.331	0.881	0.443
	(0.036)**	(0.040)**	(0.035)**	(0.046)**
Age of family head	-0.006	0.001	-0.049	-0.007
	(0.002)**	(0.002)	(0.003)**	(0.003)*
Duration (months)	-0.032	-0.033	-0.050	-0.103
	(0.002)**	(0.003)**	(0.002)**	(0.004)**
Observations	192422	74839	2659379	107503

Robust standard errors in parentheses (* significant at 5%; ** significant at 1%)

In addition to the variables shown, all models include a constant, a set of year dummies, and a dummy for the fourth month of the wave. Standard errors have been corrected for the presence of multiple observations/person.

Table 5. *Exits from No Insurance, 1986-1996 SIPP*

	Interrupted no insurance spells		Fresh no insurance spells	
	To Public	To Private	To Public	To Private
Medicaid/SCHIP eligibility limit	0.004	0.001	0.002	0.001
	(0.000)**	(0.000)**	(0.000)**	(0.000)**
Federal and state maximum	0.018	0.200	-0.183	0.064
EITC credit (/$1000)	(0.095)	(0.070)**	(0.069)**	(0.052)
Federal and state EITC initial	-0.013	-0.026	0.037	-0.008
phase-in rate	(0.015)	(0.011)*	(0.011)**	(0.008)
Unemployment rate	0.018	-0.060	0.012	-0.037
	(0.015)	(0.009)**	(0.014)	(0.008)**
Minimum wage rate	-0.002	0.017	-0.028	0.019
	(0.054)	(0.040)	(0.035)	(0.026)
Medicare expenditures	-0.038	-0.100	-0.043	-0.003
per enrollee (/$1000)	(0.033)	(0.023)**	(0.028)	(0.018)
Age	-0.046	0.018	-0.045	0.019
	(0.005)**	(0.003)**	(0.004)**	(0.003)**
Male	0.011	-0.004	-0.018	-0.000
	(0.037)	(0.025)	(0.032)	(0.022)
Black	0.289	0.005	0.206	-0.104
	(0.050)**	(0.035)	(0.041)**	(0.029)**
Other race	-0.052	-0.247	0.176	-0.162
	(0.094)	(0.056)**	(0.076)*	(0.053)**
Hispanic	0.155	-0.277	0.015	-0.241
	(0.046)**	(0.034)**	(0.046)	(0.031)**
Family has single female head	0.566	-0.112	0.441	-0.240
	(0.043)**	(0.030)**	(0.036)**	(0.026)**
Family has single male head	0.133	-0.082	-0.041	-0.182
	(0.090)	(0.057)	(0.086)	(0.054)**
Number of children in family	0.049	-0.159	0.150	-0.087
	(0.014)**	(0.011)**	(0.014)**	(0.010)**
Family head's education	-0.052	0.089	-0.081	0.105
	(0.007)**	(0.005)**	(0.006)**	(0.005)**
Family head disabled	0.491	-0.205	0.504	-0.309
	(0.050)**	(0.038)**	(0.042)**	(0.032)**
Age of family head	-0.025	-0.008	-0.020	0.004
	(0.003)**	(0.002)**	(0.003)**	(0.002)*
Duration (months)	0.004	-0.002	-0.047	-0.065
	(0.002)	(0.002)	(0.003)**	(0.002)**
Observations	245062	245062	200978	200978

Robust standard errors in parentheses (* significant at 5%; ** significant at 1%)
In addition to the variables shown, all models include a constant, a set of year dummies, and a dummy for the fourth month of the wave. Standard errors have been corrected for the presence of multiple observations/person.

Table 6. *Exits from Public Insurance, 1986-1996 SIPP*

	Interrupted public insurance spells		Fresh public insurance spells	
	To None	To Private	To None	To Private
Medicaid/SCHIP eligibility limit	-0.002	0.000	-0.002	0.001
	(0.000)**	(0.000)	(0.000)**	(0.000)**
Federal and state maximum	0.018	-0.265	-0.116	0.053
EITC credit (/$1000)	(0.077)	(0.102)**	(0.082)	(0.101)
Federal and state EITC initial	0.003	0.042	0.007	0.011
phase-in rate	(0.012)	(0.016)**	(0.014)	(0.016)
Unemployment rate	0.042	-0.048	0.009	-0.050
	(0.012)**	(0.016)**	(0.013)	(0.018)**
Minimum wage rate	-0.011	0.146	-0.094	0.074
	(0.047)	(0.070)*	(0.037)*	(0.052)
Medicare expenditures	-0.105	-0.090	-0.010	0.008
per enrollee (/$1000)	(0.027)**	(0.036)*	(0.027)	(0.034)
Age	0.009	0.021	0.019	0.023
	(0.004)*	(0.006)**	(0.004)**	(0.005)**
Male	-0.060	0.072	-0.015	0.049
	(0.032)	(0.044)	(0.032)	(0.043)
Black	-0.087	-0.091	0.082	0.098
	(0.041)*	(0.056)	(0.043)	(0.054)
Other race	0.031	-0.132	0.021	0.161
	(0.074)	(0.109)	(0.076)	(0.101)
Hispanic	0.117	-0.395	0.190	-0.193
	(0.041)**	(0.064)**	(0.042)**	(0.059)**
Family has single female head	-0.007	-0.255	-0.184	-0.050
	(0.036)	(0.051)**	(0.038)**	(0.049)
Family has single male head	0.289	-0.503	0.219	-0.151
	(0.084)**	(0.137)**	(0.082)**	(0.123)
Number of children in family	-0.064	-0.072	-0.008	-0.100
	(0.013)**	(0.019)**	(0.014)	(0.020)**
Family head's education	-0.011	0.088	-0.022	0.101
	(0.006)	(0.011)**	(0.006)**	(0.010)**
Family head disabled	-0.041	-0.291	-0.155	-0.358
	(0.043)	(0.062)**	(0.042)**	(0.061)**
Age of family head	-0.010	-0.014	-0.007	-0.006
	(0.002)**	(0.004)**	(0.002)**	(0.003)
Duration (months)	0.005	0.003	-0.024	-0.048
	(0.002)**	(0.003)	(0.003)**	(0.004)**
Observations	113689	114071	90323	90323

Robust standard errors in parentheses (* significant at 5%; ** significant at 1%)
In addition to the variables shown, all models include a constant, a set of year dummies, and a dummy for the fourth month of the wave. Standard errors have been corrected for the presence of multiple observations/person.

Table 7. *Exits from Private Insurance, 1986-1996 SIPP*

	Interrupted Private Insurance Spells		Fresh Private Insurance Spells	
	To Public	To None	To Public	To None
Medicaid/SCHIP eligibility limit	0.003	-0.001	0.004	-0.001
	(0.001)**	(0.000)**	(0.000)**	(0.000)**
Federal and state maximum	-0.011	-0.072	0.207	0.003
EITC credit (/$1000)	(0.109)	(0.048)	(0.096)*	(0.059)
Federal and state EITC initial	-0.038	-0.003	-0.007	-0.011
phase-in rate	(0.020)	(0.008)	(0.015)	(0.010)
Unemployment rate	-0.007	0.041	0.024	0.040
	(0.025)	(0.007)**	(0.021)	(0.010)**
Minimum wage rate	0.210	0.013	0.089	-0.017
	(0.082)*	(0.029)	(0.053)	(0.031)
Medicare expenditures	-0.012	0.012	-0.014	0.026
per enrollee (/$1000)	(0.050)	(0.017)	(0.038)	(0.021)
Age	-0.042	-0.008	-0.040	-0.003
	(0.007)**	(0.003)**	(0.007)**	(0.003)
Male	0.009	-0.021	0.129	0.036
	(0.053)	(0.018)	(0.049)**	(0.025)
Black	0.636	0.317	0.582	0.155
	(0.066)**	(0.027)**	(0.059)**	(0.034)**
Other race	0.556	0.434	0.236	0.283
	(0.126)**	(0.044)**	(0.124)	(0.057)**
Hispanic	0.286	0.256	0.035	0.308
	(0.079)**	(0.031)**	(0.075)	(0.036)**
Family has single female head	1.522	0.924	0.991	0.286
	(0.061)**	(0.023)**	(0.054)**	(0.029)**
Family has single male head	0.910	0.899	0.426	0.513
	(0.136)**	(0.043)**	(0.127)**	(0.061)**
Number of children in family	0.231	0.043	0.103	-0.032
	(0.024)**	(0.010)**	(0.021)**	(0.011)**
Family head's education	-0.244	-0.150	-0.138	-0.079
	(0.009)**	(0.004)**	(0.010)**	(0.005)**
Family head disabled	0.829	0.333	0.722	0.119
	(0.072)**	(0.028)**	(0.063)**	(0.037)**
Age of family head	-0.050	-0.021	-0.027	0.002
	(0.005)**	(0.002)**	(0.004)**	(0.002)
Duration (months)	-0.028	-0.009	-0.110	-0.057
	(0.003)**	(0.001)**	(0.005)**	(0.002)**
Observations	2001530	2001530	250400	250400

Robust standard errors in parentheses (* significant at 5%; ** significant at 1%)
In addition to the variables shown, all models include a constant, a set of year dummies, and a dummy for the fourth month of the wave. Standard errors have been corrected for the presence of multiple observations/person.