

**Economic Research Initiative on the Uninsured
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**THE EFFECTS OF STATE OUTREACH EFFORTS ON TAKE UP AND CROWD
OUT RATES FOR THE STATE
CHILDREN'S HEALTH INSURANCE PROGRAM**

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Cynthia Bansak
Department of Economics
San Diego State University
cbansak@mail.sdsu.edu

Steven Raphael
Goldman School of Public Policy
University of California, Berkeley
raphael@socrates.berkeley.edu

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

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Abstract

We evaluate the effects of state outreach and anti-crowd out efforts on SCHIP take up rates and on the degree to which SCHIP benefits crowd out private benefits. The results indicate that overall program take up rates range from 10.1 to 10.5 percent. However, considerable heterogeneity is found across states and several outreach strategies have had significant and substantial positive effects on take up. We find the use of out-stationed eligibility workers, eliminating the face-to-face interview in the application process, and extending benefits to the parents of eligible children all have sizable positive effects on take up rates while a number of other efforts have no measurable effect. Regarding crowd out, our regression results indicate that between one quarter and one third of the increase in public health insurance coverage for SCHIP eligible children was offset by a decline in private health insurance coverage. Concerning specific anti-crowd out strategies, we find that requiring a premium does lead to higher rates of private coverage among SCHIP eligible, while insisting that a child be uninsured is associated with lower levels of public coverage. Lastly, state outreach efforts to increase enrollment do not seem to be exacerbating crowd-out.

JEL Codes: I18, I38, H31, G22, J13

Key Words: State Children's Health Insurance Program (SCHIP), Crowd Out, Take Up

I. Introduction

In 1997, Congress created the State Children's Health Insurance Program (SCHIP) in an attempt to expand insurance coverage to children in low-income families. Unlike Medicaid, which provides health insurance benefits to poor households, SCHIP extends benefits to children in near-poor households, with some states extending coverage to children in families with income levels as high as 350 percent of the federal poverty level. SCHIP has dramatically increased the number of children eligible for and enrolled in public health insurance programs. Between 1997 and 2001, the proportion of children eligible for public health insurance increased from roughly one-third to one-half. Concurrently, SCHIP program enrollment increased from 1 million children in December 1998, to 5.3 million children in fiscal year 2002 (CMS 2003).

The ability of the SCHIP program to increase insurance coverage rates for children in near-poor families depends on a number of factors. First, states must enroll previously ineligible children in a new public health insurance program. Encouraging take up among near poor families may be particularly difficult, as fewer such families collect other forms of public assistance and stigma effects are likely to be large. The fact that state-level spending on SCHIP benefits has been consistently below the allotment of SCHIP funds suggests that the rate at which eligible children take up program benefits is far below potential¹.

Moreover, to the extent that newly eligible children that take up SCHIP benefits substitute public health insurance for privately provided benefits, the effect of the SCHIP expansion on overall coverage will be mitigated. At the program's inception, policy makers expressed concern about the potential for SCHIP to crowd out private health insurance, since the

¹ By the end of Fiscal year 2002, eight states had used less than 25 percent of their available allotment, twenty-one states had used between 25 and 50 percent, and the remaining twenty-two states had spent more than 50 percent. However, of these twenty-two states, only two (New Jersey and Rhode Island) had spent more than 75 percent (Green Book 2004).

majority of children made eligible for public insurance under the program already had private health insurance coverage (LaSasso and Buchmueller 2002).

To facilitate take-up yet control the degree of private coverage crowd out, states have experimented with a number of outreach and anti-crowd out measures. For example, some states have simplified the application process, others have eliminated face-to-face eligibility interviews, while others have extended coverage to the parents of eligible children. Anti-crowd out efforts include measures designed to limit the relative attractiveness of public health insurance for those with private benefits, and in some instances states limit the eligibility of income eligible children with existing coverage. While researchers have estimated overall take up and crowd out rates associated with the introduction of SCHIP (LaSasso and Buchmueller 2002), there has been no attempt to evaluate the efficacy of state outreach and anti-crowd out efforts.

In this project, we evaluate the effects of state outreach and anti-crowd out efforts on SCHIP take up rates and on the degree to which SCHIP benefits crowd out private benefits. Using a characterization of state policy variation presented in Shore-Sheppard (2003) and data from the 1998 and 2002 March Current Population Surveys, we assess the extent to which interstate differences in take-up and crowd-out are attributable to interstate differences in outreach and anti-crowd out policies. Our principal estimates are based on the relative change in public and private sector coverage rates among SCHIP eligible households between 1997 and 2001.

We find that overall program take up rates range from 10.1 to 10.5 percent, but that there is considerably heterogeneity across states. States have implemented various outreach measures and several strategies have significant and substantial positive effects on take up. For example, the use of out-stationed eligibility workers, eliminating the face-to-face interview in the

application process, and extending benefits to the parents of eligible children all have sizable positive effects on take up rates. We also find a number of efforts that have no measurable effect on take up, such as offering continuous coverage, presumptive eligibility, and using one streamlined application for both Medicaid and SCHIP. Our results suggest that a fair portion of the inter-state variation in SCHIP take up rates is attributable to inter-state differences in outreach policy. Specifically, our model explains approximately 40 percent of the considerable variation across states in the change in public coverage rates among SCHIP eligible children between 1997 and 2001.

Concerning the crowding out of private health insurance benefits, we find that between one quarter and one third of the increase in public health insurance coverage for SCHIP eligible children is offset by a decline in private health coverage. To assess whether state outreach efforts are exacerbating this problem by enrolling children with a high likelihood of private coverage, we estimate whether the crowd out caused by outreach-induced take up differs from the overall crowd out rate for the program. While we do find significant crowd out associated with policy-induced take up, the estimated crowd out rate is comparable to that for the program overall.

II. The SCHIP Program and the Effect on Child Eligibility for Public Health Insurance

As part of the Balanced Budget Act of 1997, Congress created the State Children's Health Insurance Program (SCHIP) in an attempt to expand insurance coverage to children in low-income families. The original legislation provides \$40 billion in Federal matching funds through fiscal year 2007 for state-designed and operated public health insurance programs. Aimed at children in “near-poor” families, SCHIP is one of the largest expansions of health insurance to

children since the introduction of Medicaid (Centers for Medicare and Medicaid Services (CMS) 2004).²

SCHIP targets children in low-income families with incomes too high to qualify for Medicaid benefits. For the most part, children in families with income less than 200 percent of the poverty line are eligible,³ although the legislation grants states some flexibility in setting eligibility cutoffs.⁴ States with Medicaid eligibility cutoffs at or above 200 percent of the poverty line were granted the option to increase the SCHIP income cutoff by an additional 50 percentage points. As a result, some states have extended coverage to children in families with income levels up to 350 percent of the poverty line. Unlike Medicaid, SCHIP benefits are not an entitlement. States are allotted funds based on a matching formula and each state is allowed to define the “targeted” group of low-income children to receive health insurance through the SCHIP program.⁵

The introduction of SCHIP greatly expanded the proportion of children eligible for public health insurance. Table 1 presents the proportion of all children and uninsured children that are

² Several laws associated with SCHIP have been enacted since its creation in 1997. For example, the Omnibus Consolidated and Emergency Supplemental Appropriations Act of 1999 changed the allotment formula to classify children covered under Indian Health Services as “uninsured” and thereby making them eligible for SCHIP. In addition, technical corrections to title XXI were made in the Balanced Budget Refinement Act of 1999 to stabilize the allotment formula and improve data collection. More recently, several laws have modified the redistribution rules for unspent funds (in fiscal years 1998 and 1999 (Public Law 106-554) and in FY 2000 and 2001 (Public Law 108-74)) and have extended the availability of such funds (Green Book 2004).

³ While SCHIP is aimed at low-income children, there are some groups of low-income children who are not eligible. For example, children eligible for Medicaid and children who are members of families currently eligible for state employee insurance are not eligible to receive coverage under SCHIP (CMS 2004). In addition, and children who live in an Institution for Mental Diseases are also ineligible to receive coverage under SCHIP (CMS 2004) see <http://www.cms.hhs.gov/schip/about-SCHIP.asp>

⁴ For example, states can use geography, age, income and resources, residency, disability status, access to other health insurance, and duration of SCHIP enrollment in determining eligibility (Green Book 2004).

⁵ Each state has a fixed allotment of SCHIP funds that are distributed as a Federal match with an enhanced matching rate, ranging from 65% to 85% (Green Book 2004). State allotments are determined through a formula that takes into account both the “number of children” and a “state cost factor” that reflects the cost of health care in a given state. The number of children is based on 50% of the low-income uninsured children in the state plus 50% of the number of low-income children in the state. The state cost factor is based on annual health service industry wages in the state compared to the national average. For most states, allotments available for a fiscal year can be used over

eligible for Medicaid and SCHIP benefits in 1997 and 2001. These figures are based on tabulations from the 1998 and 2002 March Current Population Survey.⁶ In 1997, 34 percent of U.S. children were eligible for public health insurance through the Medicaid program. In 2001, this increases to 51 percent with 19 percent eligible for SCHIP benefits and 32 percent eligible for Medicaid. Restricting the focus to uninsured children, roughly half are eligible for Medicaid benefits while one quarter are eligible for SCHIP benefits. These figures suggest that much of the problem of uninsured children in the U.S. could be addressed via existing programs, with SCHIP filling a substantial gap.

The expansion depicted in Table 1 occurred along several margins and reduced much of the unevenness in eligibility for public health insurance created by state-level variation in the implementation of the Medicaid program. First, the program increased eligibility for children in families above the poverty line. Figure 1 depicts the effect of the introduction of SCHIP on the proportion of children eligible for benefits by family income relative to the poverty line in 2001.⁷ The figure presents the proportion of children in each group eligible for public health insurance under the 1997 Medicaid criteria and under the combination of the 1997 and 2001 Medicaid and SCHIP eligibility criteria.⁸ In the absence of SCHIP, nearly all children living below the poverty line would be eligible for Medicaid benefits. As income increases, the proportion eligible for Medicaid declines precipitously. With SCHIP, nearly all children with income-to-poverty ratios less than 1.5 are eligible for public health insurance. Roughly 90 percent of children in families

the next 3 years; however, funds still available after such time may be redistributed among those states that fully expend their allotments (CMS 2004).

⁶ The data and our definitions of eligibility are discussed in greater detail below.

⁷ For Figures 1 to 5, children are put into 17 income groups where an income group is defined by family income relative to the Federal Poverty Level and each group represents a range of twenty-five percentage points.

⁸ The figure is based on tabulations from the 2002 March Current Population Survey.

with income between 150 and 200 percent of the poverty line are eligible. Beyond 200 percent of the poverty line, however, eligibility rates drop off quickly.

In addition to extending eligibility further up the family income distribution, the introduction of SCHIP reduced the degree of inter-state variation in eligibility criteria for public health benefits. Specifically, states with the least generous Medicaid programs (--i.e., the most stringent eligibility criteria) experienced the largest increases in the proportion of children eligible for public benefits under SCHIP. Figure 2 and 3 depict this fact. Figure 2 shows the proportion of children in 2001 that would be eligible for Medicaid benefits under the 1997 eligibility criteria for states with relatively small SCHIP expansions and states with large SCHIP expansions.⁹ Figure 3 displays the average change in eligibility by family income for these two groups of states. On average, small expansion states offer Medicaid benefits to more children within each income category and have eligibility cutoffs that extend further up the income distribution than states experiencing large expansions. Thus, the SCHIP expansion reduced the degree of cross-state variation in eligibility criteria for public health insurance.

Finally, SCHIP reduced the unevenness in eligibility among children of different ages. Given the imperfect coverage of older children under state Medicaid programs in 1997, the SCHIP expansion disproportionately impacted the eligibility of this group. Appendix Table A compares the family income eligibility cut-offs for Medicaid in 1997 to the SCHIP eligibility cutoffs in 2001. In nearly half the states, the 1997 Medicaid cutoffs for older children (15 to 18 years of age) are below 100 percent of the poverty line, while a large share of states also have

⁹ To identify states with small and large SCHIP expansions, we used the 2002 March CPS to calculate the proportion of children in each state in 2001 that is eligible for SCHIP benefits given the SCHIP eligibility criteria and the 1997 Medicaid eligibility criteria. We then stratify states into two groups: states with a proportion eligible that is greater than the proportion in the median state and states with a proportion eligible that is less than or equal to the proportion in the median states. We identify the former group as large expansion states and the latter group as small expansion states.

tighter Medicaid eligibility criteria for children 6 to 14 years of age relative to younger children. By contrast, the SCHIP eligibility criteria are, for the most part, uniform across age groups. Thus, in addition to expanding eligibility to children in near poor families and reducing interstate variation in eligibility criteria, the SCHIP expansion also filled in the eligibility gaps for poor older children created by the uneven eligibility criteria of the Medicaid program.

Under the 1997 legislation, states were required to implement the SCHIP program in one of three manners: (1) by expanding the state Medicaid program to children who previously did not qualify for the program (Medicaid Expansion (ME)), (2) by creating a stand-alone, state-designed program (SCHIP separate program (SP)), or (3) by implementing a combination of the two by initially expanding Medicaid programs and then adding a state-designed portion (Combination (Combo)). If a state chooses to expand their existing Medicaid program (ME), the eligibility rules of Medicaid apply (CMS 2004). However, states may make changes to their Medicaid expansion programs (such as establishing waiting periods and implementing enrollment fees) through an 1115 waiver (Green Book 2004). As of September 30, 1999, all states and territories had a SCHIP plan approved and in place (CMS 2004). By December 2003, 13 states plus the District of Columbia (and several U.S. territories) expanded Medicaid, 18 states had created separate state-designed programs, and 19 states had a combination program in place (CMS 2004).

III. SCHIP Take-Up and the Crowding Out of Private Health Insurance Coverage

The net effect of the introduction of the SCHIP program on insurance coverage rates depends on both the extent to which eligible children take up benefits and the extent to which public coverage crowds out private coverage. In previous expansions of public health programs

in the United States, take-up rates vary considerably but are typically low for targeted uninsured low-income children (Currie 2003). Following the Medicaid expansions of the late 1980s and early 1990s, a number of studies examined the ensuing take-up by children of public health insurance (Cutler and Gruber 1996; Dubay and Kenney 1997; Shore-Sheppard 2000; Yacizi and Kaestner 2000; Card and Shore-Sheppard 2001; and Ham and Shore-Sheppard 2003).

Depending on the data and the time period studied, take up rate estimates indicate that between one-tenth and one-third of children newly eligible for Medicaid enroll in the program and receive benefits. For example, Cutler and Gruber (1996) conclude that of newly eligible children, 23 percent take up coverage. In a study of the effects of OBRA 1989 and OBRA 1990, Card and Shore-Sheppard (2001) found a 10 to 15 percentage point rise in Medicaid coverage among poor children born after September 30, 1983 when all of these children were made eligible. Studies have also found that take-up declines when eligibility extends to higher income families (Card and Shore-Sheppard 2001; Currie and Gruber 1996).

The existing research on SCHIP finds take-up rates that are fairly low (LoSasso and Buchmueller 2002), a pattern that is well evident in Figure 4. The figure presents the proportion of children covered by public health insurance in 1997 and 2001 by family income relative to the poverty line. While there is some evidence that public coverage increased for children principally affected by the introduction of SCHIP, coverage rates are considerably lower than the proportion eligible displayed in Figure 1.¹⁰

Low SCHIP take-up rates are likely to be a function of several factors. Newly eligible children and their families are likely to be unaware of the change in their eligibility status, especially if such households do not receive other public benefits, such as food stamps or income

assistance. In addition, transaction costs and/or the possible stigma associated with public programs may further inhibit take up (Currie 2003). For example, transaction costs per child are likely to be higher for households with fewer children and higher income households that have never received public assistance. Currie (2003) posits that the stigma associated with receiving public benefits may be larger when recipients are forced to divulge personal information on applications. Indeed, Cunningham (2001) finds evidence that low take-up rates for SCHIP in high uninsurance areas are likely due to non-economic factors such as stigma, lower preferences for health coverage, language barriers, lack of awareness, and lack of understanding of the importance of access to health care.

In light of the low take up rates associated with previous Medicaid expansions, many states included a number of specific outreach policies designed to facilitate enrollment in their designated SCHIP program. For example, to encourage take up, many states grant presumptive eligibility to applicants, some have simplified the application process by reducing paperwork and eliminating face-to-face interviews, many states have implemented bilingual outreach efforts, and some have even offered payment to private vendors for successful enrollments (Rosenbach et al. 2001).

In addition to concerns over low take up rates, policy makers and individual states were also concerned that currently insured persons made eligible for SCHIP would drop their private coverage and take advantage of the expanded public health insurance for their children.¹¹ Such substitution may result from several behavioral responses to becoming eligible for SCHIP benefits. Employers that are aware that the children of their employees are eligible for a new

¹⁰ At lowest income levels, public coverage fell and likely reflects the decline in welfare rolls over this period. It is possible that the push to help families move from welfare-to-work may have mistakenly resulted in children being dropped from Medicaid (Shore-Sheppard 2003).

state program may cease to offer health insurance to family members and encourage employees to seek public benefits.¹² Alternatively, parents who are locked into a job for the family health benefits may feel less constrained with the existence of SCHIP and may seek employment where other dimensions of compensation (wages, scheduling flexibility etc.) are more attractive. To address such concern regarding “crowd-out,” the legislation itself included language indicating that SCHIP funds are explicitly designed to provide health insurance coverage only to uninsured children.

Moreover, most states have attempted to limit crowd-out by implementing a combination of deterrents. For example, several state plans include waiting periods for moving from private to public insurance. Others have implemented sliding-scale premium contributions for higher income families among the eligibles. Although less frequent, other states assist or subsidize employer supplied insurance premiums in an attempt to limit crowd out.

An initial look at the data suggests that early concerns regarding the potential for crowd out were well founded. Figure 5 present the proportion of children with private health insurance coverage by income relative to the poverty line for 1997 and 2001. While private coverage increased for children in households with income below the poverty line, there are notable declines in private coverage for children in families with income between 100 and 300 percent of the poverty line. As a proportion of the increase in public insurance coverage displayed in Figure 3, the declines in private coverage for children in families with income between 100 and 300 percent of the poverty line range from 0.03 to 0.66, with an un-weighted average relative

¹¹In addition to this type of “crowd-out”, employers could also adjust their behavior increasing out-of-pocket costs of private insurance to encourage employees to switch to public health insurance.

¹² Shore-Sheppard, Buchmueller, and Jensen (2000) examine the mechanism by which crowding out occurs for small firms. They find no evidence of employers *changing* insurance offerings to workers following the expansions. However, they find a negative relationship between Medicaid eligibility of a firm’s employees and the take-up rate for health insurance offered by the firm.

decrease across these income categories of 0.38. As an initial estimate of the degree of crowd-out caused by the SCHIP expansion, this figure lies in the middle of the range of extant estimates and suggests that crowd-out is at least as much of a problem in SCHIP despite the specific measures taken by individual states.¹³

Concurrent with the cross-state policy variation, there is considerable variation across states in observable take up and crowd out rates. Figure 6 presents a scatter plot of the 1997 to 2001 change in the proportion of SCHIP eligible children covered by private health insurance against the comparable change in the proportion of eligible children covered by public health insurance, where each observation corresponds to an individual state. Each data point is weighted by the number of observations from the 1998 March Current Population Survey. There are large cross state differences in the proportion of eligible children that take up benefits, ranging from slight declines to increases on the order of 0.3. Similarly, changes in the proportion covered by private insurance vary considerably across states. The scatter plot reveals a negative relationship between the changes in private and public coverage. A weighted regression suggests that each percentage point change in public health coverage causes a 0.25 percentage point decrease in private coverage (an alternative crowd out estimate based on cross state variation in take up that is comparable to that derived from Figure 5). However, the figure suggests that there is considerable heterogeneity in crowd out across states.¹⁴

Despite the evident crowd out in Figures 5 and 6, the SCHIP expansion does indeed appear to have increased insurance coverage among the targeted group of children. Figure 7

¹³ In empirical studies of crowd out, researchers typically estimate the share of enrollment in expanded or newly introduced public program that can be attributed to a reduction in private coverage. Estimate of crowd out for Medicaid expansions range considerably, from finding no crowd out (Hamm and Shore-Sheppard 2003) to approximately 50 percent crowd out (Cutler and Gruber 1996). See Davidson et al. (2004) for a thorough review of the empirical evidence on crowd out.

¹⁴ Those observations lying above the regression line exhibit declines in private coverage for a given increase in public coverage that is less than expected, while the latter is true for states lying below the regression line.

presents the proportion of children with any form of insurance coverage in 1997 and 2001 by family income relative to the poverty line. In 1997, the coverage income profile was U-shaped with relatively high coverage rates for very low-income and middle and upper income children and the lowest coverage rates for children in near-poor families. The introduction of the SCHIP program eliminates the dip in coverage rates for children in near poor families, yielding a coverage-income profile that increases uniformly in income.¹⁵

The patterns in Figure 7 suggest that the introduction of SCHIP had a substantial effect on coverage, despite the low take up rates and evidence of crowd out. Knowledge of which state policies boost take up could perhaps improve the efficacy of the program and insure more children in families just above the poverty line. In what follows, we present a more formal analysis of the impact of policy variation on take up, crowd out and overall coverage.

IV. Data Description and Methodological Approach

To estimate the effect of state outreach and anti-crowd out efforts, we pursue the following estimation strategy. First, using data from the March Current Population Surveys in conjunction with state level eligibility criteria for SCHIP and Medicaid, we identify children eligible for SCHIP benefits. We identify observations that are income eligible for SCHIP benefits in 2001 as well as children that would have been eligible in 1997 (under 2001 income criteria) had the program been in existence. The effect of SCHIP on public insurance and the effect of the expansion on private coverage are estimated by calculating the change over time in the proportion of eligible children receiving public and private health insurance benefits.

¹⁵ Shore-Sheppard (2000) demonstrates that the Medicaid expansions during the late 1980s had a similar impact on the coverage-income profile.

Second, we assess the effect of state policy variation by estimating the differences in the change in coverage rates and private sector crowd out for states with and without various outreach and anti-crowd out policies. We use a classification of state outreach policy presented by Shore-Sheppard (2003) to characterize state-level policy variation and estimate the effect of specific outreach efforts, holding constant all other efforts made by the state to enroll eligible children and to deter private sector crowd out. In this section, we describe in detail our data and methods for identifying eligible children as well as our estimation methodology.

Data Description and Identifying Eligible Children

We draw samples of children from the 1998 and 2002 Current Population Survey (CPS) Annual Social and Economic Supplement (formerly called the March Supplement or the Annual Demographic Supplement). Since income and health insurance coverage questions in the March CPS refer to the prior calendar year, the 2002 data are used to estimate coverage and eligibility for the year 2001 while the 1998 data are used to estimate coverage and eligibility for the year 1997.¹⁶

Identifying children in the CPS that are eligible for public health insurance benefits requires two sources of information: (1) information on family income net of allowable disregards, and (2) state level information on Medicaid and SCHIP eligibility criteria. The income eligibility criteria for both Medicaid and SCHIP are based on family net income relative to the federal poverty line. To gauge income, we construct a family income variable from the person level records of the CPS applying the Medicaid definition of families. The federal definition of a family for the purpose of assessing Medicaid eligibility includes the child (applicant), the child's siblings, and the child's legally responsible relatives living in the

household (as opposed to all relatives or individuals living in the household). Thus, for the family of each child, we cumulate person level income for all children, for the child's identified parent, and when identified, for the identified parent's spouse.

Countable income under Medicaid includes income from the child's legally responsible relatives living in the household, as well as any income from other members of the household that is given to the family. The Medicaid income eligibility calculation disregards income from child support payments, work-related expenses, and child-care costs. As of 2001, the maximum monthly deductions were \$90 per worker for work costs and between \$175 and \$200 per child (\$200 for children under 3 years old and \$175 per child 3 years and older) for child care costs. In calculating annual family income, we deducted \$2100 (or \$175 per month) for each child under 12 years of age for annual childcare expenses and \$1080 (or \$90/month) for work-related expenditures. Finally, we divide the constructed family income variable by the family-size specific federal poverty line for either 1997 or 2001.

To be sure, SCHIP income calculations differ from those specified by Medicaid eligibility rules in many states. States that choose to implement SCHIP through a Medicaid expansion must conform to existing federal rules and provide the full range of mandatory Medicaid benefits, and are required to use the federal definitions of family and countable income. Thus for these states, our definition of family income is likely to work quite well. States that design their own programs, however, have discretion in defining income, allowable disregards, and family size.¹⁷ For these states, we would prefer to use these state-level family income definitions. However, states with stand-alone programs often do not clearly outline their

¹⁶ Several studies (Shore-Sheppard 1996, Swartz 1986, Berger et al. 1998) have found that respondents often appear to be answering the question at a point-in-time rather during the previous year (as the question is posed). However, for the purposes of this study, we treat the insurance variables as pertaining to the prior year.

income eligibility criteria. According to Rosenbaum and Markus (2002), “the majority of state plans lacked clarity on the income standards and methodologies they would apply to determine eligibility under separately-administered SCHIP programs”. Thus, for consistency and simplicity, we apply the Medicaid income definitions to all states.

For 1997, we identify children that are eligible for Medicaid as those children who, given their age and family income relative to the poverty line, meet the eligibility criteria listed in Appendix Table A. We identify children in 1997 who are hypothetically eligible for SCHIP benefits by identifying children who meet the SCHIP income criteria listed in Appendix Table A but did not meet the Medicaid criteria. Note, since SCHIP did not exist in 1997 and the income criteria listed refer to the state programs in 2001, this second group of children essentially identifies the SCHIP target group prior to the program’s implementation.

For 2001, we apply the 1997 Medicaid criteria to identify Medicaid eligible children and the 2001 SCHIP income criteria in conjunction with Medicaid income and age limits to identify the SCHIP eligible population. Note this schema attributes all expansions in coverage between 1997 and 2001 to the introduction of SCHIP.¹⁸

We measure whether a child is covered by insurance and the type of insurance using the retrospective coverage items from the CPS. Since the insurance questions from the March CPS refer to the past calendar year, a respondent may report coverage from several sources. We define children that receive either Medicaid or SCHIP benefits as being covered by public health insurance. We define private coverage as having private insurance either provided by an employer or purchased individually. Total coverage consists of public coverage, private

¹⁷ State SCHIP plans do not consistently report the use of income disregards, nor whether the stated income standards include or exclude these disregards (Green Book 2000).

¹⁸ Note, several states provide SCHIP benefits through an expansion of their existing Medicaid programs, and thus Medicaid eligibility criteria are currently more generous in many states relative to the eligibility criteria for 1997.

coverage plus a few other categories such as being covered by Medicare, CHAMPUS (military health insurance), or other government health insurance.

Table 1 presents sample averages by year for overall coverage, public and private coverage, and the proportion eligible for public coverage by program. Between 1997 and 2001, the proportion of children with health insurance benefits increased by 3.3 percentage points, with an increase in public coverage of 2.3 percentage points and an increase in private coverage of 1.5 percentage points. The table also shows that while 34 percent of children were eligible for public health insurance in 1997¹⁹ under Medicaid, slightly over half of children are eligible for either Medicaid or SCHIP benefits in 2001. These eligibility figures correspond quite closely with the estimates of Dubay et. al. (2002), who use detailed information on state eligibility criteria and income definitions to gauge the eligible population. This consistency suggests that our application of the Medicaid income definitions in defining the SCHIP eligible population is a reasonable strategy.

To depict the relative characteristics of the SCHIP eligible population of children, Table 2 presents average personal, family, and parent characteristics for children by their eligibility status for public health insurance. The table presents figures for the Medicaid-eligible and SCHIP-eligible populations, as well as for those children who by our imputations are ineligible for public health insurance. Within each group, the table provides separate calculations by whether the children take up benefits. All figures are for the year 2001. Relative to the Medicaid-eligible population, children eligible for SCHIP are slightly more likely to have health insurance coverage (84 vs. 82 percent), while both eligible populations are considerably less likely to be covered than ineligible children (94 percent covered). SCHIP children have higher rates of private insurance than Medicaid eligible children (66 vs. 40 percent) and are

considerably less likely to take up public insurance benefits (22 vs. 46 percent). A small fraction of children who we impute as ineligible for public insurance actually receive benefits (roughly 6 percent).

With respect to other characteristics listed in Table 2, SCHIP children are somewhat older than the Medicaid-eligible children (10.2 years old versus 7.2 years old), have higher incomes, are less likely to be minority, and reside in smaller families. In addition, the parents of SCHIP children are somewhat older and considerably more likely to be married.

Within populations defined by eligibility status, those who take up benefits have lower incomes, are somewhat younger, and are considerably less likely to reside in a family where the parents are married. Take up also differs by type of public program. While 46 percent of Medicaid eligible children are covered by public health insurance, only 22 percent of SCHIP-eligible children are covered by public insurance in 2001. This difference could be due to the fact that SCHIP is a relatively new program and that new programs take time to get off the ground. In addition, SCHIP-eligible children by definition come from wealthier families who are more likely to have access to private health insurance.

Estimating Take Up and Crowd Out and Assessing the Policy Effects

We estimate the effects of state level outreach and anti-crowd out efforts on the take up of SCHIP benefits and the degree of crowd out by augmenting the standard approach to estimating take up rates to allow for inter-state policy variation. A typical methodological approach to estimating program take up following a program expansion involves calculating the pre-post change in the proportion of the eligible population receiving benefits. For example, one could assess the overall take up rate for the SCHIP expansion by estimating the pooled equation

¹⁹ This is similar to the estimates in Shore-Sheppard (2000, 1997).

$$Public_i = \alpha_0 + \alpha_1 Y2001_i + \gamma' X_i + \varepsilon_i \quad (1)$$

where $i=(1,\dots,N)$ indexes observations in the data set, $Public_i$ is a dummy variable equal to one if child i has publicly-provided health insurance, $Y2001_i$ is a dummy variable indicating an observation for the year 2001 (from the 2002 CPS), X_i is a vector of control variables, α_0 , α_1 , and γ are parameters to be estimated, and ε_i is a normally-distributed error term. One would estimate the regression using pooled data from the 1998 and 2002 CPS restricting the sample to those children that meet the 2001 eligibility criteria for SCHIP. Given the introduction of SCHIP between 1997 and 2001, variation in the year dummy variable captures variation in program eligibility among otherwise similar children. Thus, the estimate of the coefficient α_1 provides the difference in public coverage rates between SCHIP eligible children in 1997 and 2001 after adjusting for observable differences, providing a fairly straightforward estimate of the program take up rate.

Measuring crowd out requires estimating the additional regression equation

$$Private_i = \beta_0 + \beta_1 Y2001_i + \delta' X_i + \varepsilon_i \quad (2)$$

where $Private_i$ is a dummy variable equal to one if child i has private health insurance and all other variables are as defined above. The coefficient β_1 gauges the difference in average private coverage rates between 1997 and 2001 after adjusting for observable characteristics. Given the introduction of SCHIP during this period, the coefficient can be interpreted as the decline in private health insurance among the SCHIP eligible population induced by the SCHIP expansion of public health insurance.

The rate of crowd out equals the absolute value of the decline in private health insurance coverage divided by the program take up rate. Thus, calculating crowd out from regression

equations (1) and (2) requires simply dividing the absolute value of β_1 from equation (2) by α_1 from equation (1).²⁰

To estimate the effect of outreach and anti-crowd out policies, we augment equations (1) and (2) to permit take up and crowd out rates that vary with state policy efforts. Specifically, let $Policy_i$ be a $J \times 1$ vector of dummy variables, where each dummy variable indicates whether the state of residence of child i uses the outreach or anti-crowd out policy in implementing their SCHIP program, and $Policy_i^j$ be an element in this vector. We estimate the differential effect of each policy variable with the equation

$$Public_i = \alpha_0 + \alpha_1 Y2001_i + \kappa' Policy_i + \sum_{j=1}^J \theta_j * Policy_i^j * Y2001_i + \gamma' X_i + \varepsilon_i \quad (3)$$

where the principal differences between equations (3) and (1) are the additions of the vector of policy dummy variables and a complete set of interaction terms between the policy dummy variables and the Y2001 dummy variable. The base policy effects, captured by the vector of coefficients κ , net out inter-state variation in public coverage that may be correlated with the adoption of a specific outreach or anti-crowd out policy. The coefficients on the interaction terms, $\theta_1, \dots, \theta_J$, measure the extent to which public coverage increased by a differential amount in states that adopt policy j , holding constant all other policy efforts of the state. The coefficients on these interactions terms are our principal estimates of the effect of specific policies on take up.

To assess policy effects on crowd out, we similarly augment equation (2) to allow for state policy variation, or

²⁰ To address the possible endogeneity of eligibility, we also computed instrumental variable estimates of the effect of the SCHIP expansions on the change in the proportion of children with health insurance in state-income group cells. The change in the proportion eligible for SCHIP is instrumented with the hypothetical proportion of children

$$Private_i = \beta_0 + \beta_1 Y2001_i + \lambda' Policy_i + \sum_{j=1}^J \psi_j * Policy_i^j * Y2001_i + \delta' X_i + \varepsilon_i. (4)$$

Here the base policy effects given by the vector of coefficients, λ , capture inter-state differences in private coverage rates correlated with the adoption of specific policies. The coefficients on the interaction terms, ψ_1, \dots, ψ_J , gauge the extent to which the change in private coverage in states with policy effort j differ from the comparable change in states not making this effort, holding constant all other policies implemented by the state.

Figures 8 and 9 list state outreach and anti-crowd out policy efforts and graph the number of states that use each policy in the implementation of their SCHIP program. A complete state-by-state accounting for policy efforts culled from Shore-Sheppard (2003) is provided in Appendix Table B. Concerning outreach efforts, the figures indicate considerable heterogeneity in the policies employed by states. For example, basic outreach efforts are made by nearly all states. On the other hand, only four states extend benefits to parents, while only one state pays brokers for successful applications.

V. Estimation Results

In this section we present the main results of the paper. We begin by estimating the overall take up rate for the expansion between 1997 and 2001 and compare these estimates to the findings from existing research. We then present our assessment of the effect of policy variation on inter-state differences in take up rates and crowd out.

Base Estimates

Table 3 presents tabulations of the proportion of children with any health insurance

who would have been eligible in 1997 for SCHIP under the 2001 eligibility criteria. Our IV results are qualitatively similar to those without IVs presented in this paper and are available from the authors upon request.

coverage (Panel A), with publicly provided health insurance coverage (Panel B), and with private health insurance coverage (Panel C) by year and by eligibility status for public programs. Within each panel, the tables provides the proportion covered by year, the change in the proportion covered between 1997 and 2001, and the regression adjusted change in coverage from two alternative specifications. The first specification controls for a third-order polynomial in age, a male dummy, and a full set of dummy variables indicating income relative to the poverty line in 25 percent increments (with the omitted category being over 400 percent of the poverty line). The second specification adds a full set of state dummy variables to the first specification. For the SCHIP eligible population in Panel B, the unadjusted change and the adjusted changes correspond to the coefficient on the year dummy in equation (1). For the SCHIP eligible population in Panel C, the changes in coverage correspond to the coefficient on year from various specifications of equation (2).

Beginning with Panel A, both Medicaid eligible and SCHIP eligible children experience an increase in overall coverage, with a 5 percentage point increase in coverage rates for the Medicaid eligible and a 6.2 percentage point increase for the SCHIP eligible. Ineligible children experience a smaller yet statistically significant increase in coverage of 1.2 percentage points. In all specifications, the relatively larger increases in coverage among SCHIP eligible children are statistically significant at either the 5 percent or one percent level of confidence (both relative to ineligible and Medicaid eligible children).

Panel B reveals much larger relative changes in the proportion of children covered by public health insurance. Among SCHIP eligible children, the proportion receiving public health insurance increases by 10.5 percentage points. Moreover, adjusting for observable characteristics does not appreciably impact this increase. Among the Medicaid eligible, public

coverage declines by a statistically significant 2.1 percentage points, while among those who we impute as ineligible, public coverage declines by 1.2 percentage points.

The tabulations reveal that roughly 11 percent of the children we identify as SCHIP eligible yet Medicaid ineligible receive public health insurance benefits in 1997, even though the SCHIP programs were not up and running. This problem in imputing eligibility is observed throughout the literature on take up and crowd out. For example, Cutler and Gruber (1996) find in tabulations from the 1998 CPS that 21 percent of those made eligible for Medicaid between 1987 and 1992 reported public health insurance benefits in 1987, while 8 percent of those not eligible by 1992 did so. Similarly, LoSasso and Buchmueller (2002) find that 20 percent of children receiving public health insurance benefits are imputed to be ineligible for both Medicaid and SCHIP. We believe that this imputation problem is likely to impart a downward bias to our take up rate estimates, although the direction is theoretically ambiguous.²¹

The patterns in Panel C indicate substantial differences in the change in private insurance coverage across our three groups of children. Among Medicaid eligible children, the proportion with private health insurance increased by 6.6 percentage points, a pattern most likely driven by the strong labor market and the impact of welfare reform on Medicaid take up rates. For SCHIP-eligible children, the proportion with private health insurance declined by 3.2 percentage points, although adjusting for observable characteristics and state-level trends reduces this decline to

²¹ Our reasoning concerning the direction of bias is as follows. The take up rate is essentially the proportion of eligible children that receive benefits. The fact that a proportion of the SCHIP eligible receive public benefits in a year when SCHIP did not exist suggests that our imputation procedure is incorporating too many very low-income children among the eligible population, thus increasing the denominator of the take up ratio. However, proper calculation of countable income is likely to increase the number of relatively higher income families with children eligible for SCHIP benefits. In other words, the imputation used here leaves out some upper income households, thus reducing the denominator. Thus, the net effect of the imperfect imputation is ambiguous. However, the empirical density of children by family income is more concentrated around the lower eligibility boundary than the higher eligibility boundary. Based on this pattern, we believe that the number of low income children wrongly counted as SCHIP eligible is likely to exceed the number of higher income children that are wrongly counted as SCHIP ineligible.

roughly 2 percentage points. Among the ineligible, private insurance coverage declines by approximately 1 percentage point.

The results for the SCHIP eligible population presented in Table 3 indicate overall program take up rates ranging from 10.1 to 10.5 percent. Combined with the declines in private coverage observed in Panel C, these figures suggest that between 21 percent (based on adjusted changes 2) and 30 percent (based on the unadjusted changes) of the increase in public coverage is offset by a decline in private coverage. LoSasso and Buchmueller (2002) present the most thorough study of take up and crowd out in the SCHIP program. Using a somewhat different eligibility imputation procedure, the authors find take up rates ranging from 3.5 to 10.5 percentage points and crowd out ranging from 18 to 50 percent. Thus, our base estimates are consistent with existing research.

The Effects of State Level Policy Efforts

Table 4 presents regression results for two specifications of equation (3). The first specification includes a 2001 year dummy, dummy for the outreach and anti-crowd out policies, and interaction terms between the policy dummies and the year dummy. The second regression expands the specification to include a third-order polynomial in age, a male dummy, dummies for income relative to the poverty line in 25 percent increments (over 400 percent being the omitted category), dummies for the race of the child and parent, dummies for the parent's marital status, and whether the parent and child are immigrants. The specification also includes dummies indicating states in the Northeast, Midwest, and South and interaction terms between these regional dummies and the 2001 year dummy. The sample here is restricted to SCHIP-eligible children in 1997 and 2001.

The coefficients on the interaction terms between the policy variables and the year dummy indicate the degree to which employing the policy in question had a differential effect on take up rates after controlling for all other state efforts. The results indicate that several outreach policies are particularly effective. Among the policies used by more than one state, using out-stationed eligibility workers increases take up rates by approximately 11 percentage points, eliminating face-to-face interviews increases take up by between 5.6 and 7 percentage points, while extending benefits to the parents of eligible children increases take up by between 10.8 and 14.7 percentage points. Several of the policies employed by a single state exert significant effects on take up. For example, paying outside brokers for successful applicants increases take up rates between 6.3 and 9.5 percentage points, while making use of automated application decreases take up rates considerably. Since each of these policies are used by a single state only, however, these estimated effects are effectively the coefficients on interaction terms between state dummies and the year dummy.

Concerning the effects of the anti-crowd out efforts, all of the points estimates on the interaction terms are negative, indicating that these efforts marginally reduce take up rates. However, with the exception of the variable indicating that the child must be uninsured, none of the coefficients are statistically significant. For the uninsured variable, the interaction terms are negative in both specifications, significant at the 3 percent level of confidence in specification (1), and significant at the 9 percent level of confidence in specification (2).

Table 5 presents comparable results where the dependent variable is a dummy indicating whether the child is covered by private health insurance. Here, the interaction terms between the policy variables and the year dummy indicate the extent to which the policy differentially displaces private coverage taking into account all of the other policy efforts of the state. For two

of the three policies that are used by more than one state and that have significant positive effects on take up, there are significant negative effects on the likelihood of having private insurance coverage. For example, out-stationing eligibility workers is predicted to decrease private coverage by 21 percentage points, while eliminating face-to-face interviews reduces private coverage by approximately 8 percentage points. While the point estimate for the interaction term between extending coverage to parents is negative in the first specification, the coefficient is not statistically significant. For the first two policies, the predicted negative effects on private coverage exceed the predicted positive effects on public coverage from Table 3.

The results in Table 5 also indicate that several of the policy instruments have significant positive effects on the likelihood of having private insurance coverage. Including an insurance premium increases the inter-year change in private insurance coverage by roughly 13 percent. In addition, simplifying the application process and eliminating the asset test both have significant positive effects on the overall change in private coverage rates.

In Figure 6, we documented the fact that there is considerably heterogeneity across states in the degree to which eligible children took up SCHIP benefits as well as in the changes in private coverage rates during the time period corresponding to the implementation of SCHIP. A natural question to ask of the results presented in Tables 4 and 5 concerns the extent to which inter-state differences in outreach and anti-crowd out policies explain this variation.

To explore this question, we begin by using our most inclusive specification of equation (3) (the second regression in Table 4) to predict the change in public coverage rates that would have occurred for a given state for an individual with personal characteristics corresponding to the sample averages based on the state's outreach and anti crowd out choices. The expected value of public coverage for 1997 for a person residing in state j is given by the equation

$$E(\text{Public} | Y2001 = 0, \hat{X}, \text{Policy}_j) = \alpha_0 + \kappa' \text{Policy}_j + \gamma' \hat{X}, \quad (5)$$

where Policy_j is the vector of values for the policy dummies for state j . The comparable expected value for 2001 is given by the equation

$$E(\text{Public} | Y2001 = 1, \hat{X}, \text{Policy}_j) = \alpha_0 + \alpha_1 + (\kappa + \theta)' \text{Policy}_j + \gamma' \hat{X}. \quad (6)$$

Subtracting equation (5) from equation (6) gives the predicted take up rate attributable to the state's outreach and anti-crowd out policy efforts as captured by the vector Policy_j . Thus, the policy-induced portion of take up is given by the equation

$$E(\text{Public} | Y2001 = 1, \hat{X}, \text{Policy}_j) - E(\text{Public} | Y2001 = 0, \hat{X}, \text{Policy}_j) = \alpha_1 + \theta' \text{Policy}_j \quad (7)$$

which is simply the sum of the coefficients on the year dummy variable and the relevant policy interaction terms.

Figure 10 presents a scatter plot of the actual state-level changes in public coverage among SCHIP eligible children against the predicted state changes in public coverage that results from each state's policy efforts (as given in equation (7)). Each data point is weighted by the number of observations used to calculate the public coverage rate in 1997.²² There is a strong positive correlation between the predicted policy-induced take up and the actual degree of take up across states. Inter state differences in quantifiable implementation strategies accounts for roughly 40 percent of the variation in take up across states.

Figure 11 presents a scatter plot of the change in private health insurance at the state level against the predicted policy-induced change in program take up. In conjunction with the results in Figure 6, the results in Figure 11 permit an assessment of whether policy induced take up encourages a greater degree of private coverage crowd out than the take up that would normally

occur among children eligible for SCHIP benefits. The figure reveals a marginally-significant negative relationship between predicted take up rates and the change in private coverage. A one percentage point policy-induced increase in take up rates is predicted to decrease private sector coverage by approximately 0.33 percentage points. In Figure 6, which presented similar results where the observed change in public coverage is substituted for the predicted take up, the comparable crowd out estimate is 0.25. While this is lower than the crowd out associated with outreach efforts, the figures are fairly close and statistically indistinguishable from one another.

To summarize the results, we find evidence that state outreach efforts matter, and that specific outreach efforts such as extending benefits to parents, eliminating the face-to-face interview, and making use of out-stationed eligibility workers have significant and substantial effects on take up. Such take up boosting policy efforts do create private sector crowd out, yet the degree of crowd out is comparable to that observed for the program overall.

VI. Conclusion

The findings of this paper are several. Using data from the 1998 and 2002 CPS, we find evidence that the introduction of SCHIP has reduced the proportion of near poor children lacking health insurance, although the overall take up rate is quite low (approximately 10 percent). While not all state outreach efforts have been effective, several outreach policies have significantly boosted take up rates. Specifically, the use of out-stationed eligibility workers, eliminating the face-to-face interview in the application process, and extending benefits to the parents of eligible children all have sizable positive effects on take up rates. Moreover, our results suggest that approximately 40 percent of the inter-state variation in SCHIP take up rates between 1997 and

²² Weighting by the 2001 total and the average of the 1997 and 2001 total yields similar results to those presented in the picture. In addition, an un-weighted regression yields a considerably higher R-squared.

2001 is attributable to inter-state differences in outreach policy choices. Given that the vast majority of uninsured children are eligible for Medicaid or SCHIP, much of the problem of uninsured children in the U.S. could be addressed through existing programs and more effective outreach efforts.

To be sure, states must balance enrollment growth against private coverage crowd out in order to minimize the average program costs per newly insured individual. Given that SCHIP targets children at higher income levels who are more likely to have access to private health insurance, substitution of public for private insurance could be quite high. We find overall crowd out rates ranging from one quarter to one third of the increase in public coverage. Regarding specific anti-crowd out strategies, our results suggest that requiring a premium does lead to higher rates of private coverage among SCHIP eligible, while insisting that a child be uninsured is associated with lower levels of public coverage. Finally, while we do find that the policy induced variation in take up does crowd out some private coverage, the degree of crowd out is no worse than that for the program overall. Thus, state outreach efforts do not exacerbate this problem.

Nevertheless, some degree of crowd out is inevitable when extending public benefits to those who have access to private insurance, and the costs of crowd out may be partially offset by other collateral benefits to recipient households. Those who drop coverage may actually be better off if they end up with lower out-of-pocket costs and a more stable source of health insurance for their children and possibly themselves (if SCHIP benefits are extended to parents). In addition, working parents may no longer be “locked” into current jobs by the need to maintain health coverage for their children. Job mobility may rise for those with SCHIP eligible children

and the average quality of parental job matches may rise. Both issues provide fertile areas of inquiry for future research.

Moreover, some state efforts to limit crowd out raise concerns regarding equity in the implementation of SCHIP. Precluding low-income families who have paid for private insurance in the past from coverage under the SCHIP program while extending benefits to those who did not raises obvious horizontal equity concerns.

While our results suggest that states may be able to boost enrollment through outreach efforts, ongoing state budget crises are likely to limit such efforts, and thus the efficacy of the program. According to Hill, Stockdale, and Cournot (2004), most of the thirteen states in their study cut spending *entirely* on SCHIP outreach. In addition, nearly one-third either reduced eligibility or capped enrollment. While political support for SCHIP remains strong and cuts in SCHIP budgets have been small relative to those imposed on other state programs, our findings suggest that these program rollbacks are likely to hamper further efforts to increase coverage among the target population.

References

- Blumberg, Linda J, Lisy Dubay and Stephen A. Norton. 2000. "Did the Medicaid Expansions for Children Displace Private Insurance? An Analysis Using the SIPP." *Journal of Health Economics*, Vol:19, pp. 33-60.
- Card, David and Lara D. Shore-Sheppard. 2001. "Using Discontinuous Eligibility Rules to Identify the Effects of the Federal Medicaid Expansions." [JCPR Working Papers](#) 248, Northwestern University/University of Chicago Joint Center for Poverty Research.
- Centers for Medicare and Medicaid Services. 2004. <http://www.cms.hhs.gov>
- Centers for Medicare and Medicaid Services. "Fiscal Year 2002 Number of Children Ever Enrolled in SCHIP – Preliminary Data", January 31, 2003.
- Cunningham, Peter J. 2001. "Targeting Communities with High Rates of Uninsured Children." *Health Affairs*, (July).
- Currie, Janet. 2003. "The Take-Up of Social Benefits." Berkeley Symposium on Poverty, the Distribution of Income, and Public Policy. (December), pp1-37.
- Cutler, David M. and Jonathan Gruber. 1996. "Does Public Insurance Crowd Out Private Insurance?" *The Quarterly Journal of Economics*, Vol 111:1 (May), pp.391-460.
- Davidson, G et al. 2004. "Public Program Crowd-out of Private Coverage: What are the Issues?" The Robert Wood Johnson Foundation. Research Synthesis Report No.5.
- Dubay, Lisa C. and Genevieve M. Kenney. 1996. "The Effects of Medicaid Expansions on Insurance Coverage of Children." *The Future of Children*, Vol. 6:1 (Spring) pp.152-161.
- Dubay, Lisa C; Haley, Jennifer and Genevieve M. Kenney (2002), "Children's Eligibility for Medicaid and SCHIP: a View from 2000," The Urban Institute, Series B, No-B-41.
- Ham, John C. and Lara Shore-Sheppard. 2003. "The Effect of Medicaid Expansions for Low-Income Children on Medicaid Participation and Private Insurance Coverage: Evidence from the SIPP." [NBER Working Papers](#) 8063, National Bureau of Economic Research, Inc.
- Hill, Ian; Holly Stockdale; and Bridgette Courtot. 2004. "Squeezing SCHIP: States Use Flexibility to Respond to the Ongoing Budget Crisis". Series A, No. A-65, June 2004. Urban Institute. Policy Briefs/ANF: Issues and Options for States.
- LoSasso, Anthony T. and Thomas C. Buchmueller. 2002. Working Paper 9405 National Bureau of Economic Research, Cambridge, MA.

- Rosenbach ML, M; Ellwood, M.; Czajka, J.; Irvin, C.; Coup'e; Quinn,B. 2001. Implementation of the State Children's Insurance Program: Momentum is Increasing After a Modest Start. Mathematica Policy Research, Inc.
- Rosenbaum, Sara and Anne Markus. 2002. "State Eligibility Rules Under Separate State SCHIP Programs- Implications for Children's Access to Health Care." Center for Health Services Research and Policy. Policy Brief #4 (September).
- Shore-Sheppard, Lara D. 2003. "Expanding Public Health Insurance for Children" in Changing Welfare. Gordon, Rachel and Herbert Walberg. New York: Plenum Publishers, 2003, pp.95-117 (Shore-Sheppard, Lara,).
- Shore-Sheppard, Lara D. 2003. "Summary of State SCHIP Plans as of March 2001" (Unpublished Appendix to the chapter on Medicaid and SCHIP in Changing Welfare, Rachel A. Gordon and Herbert J. Walberg, eds.)
http://lanfiles.williams.edu/~lshore/SCHIP_Plans_March_2001.pdf
- Shore-Sheppard, Lara D. 2000. "The Effect of Expanding Medicaid Eligibility on the Distribution of Children's Health Insurance Coverage." *Industrial and Labor Relations Review*, Vol. 54, No. 1 (October), pp.59-76.
- Shore-Sheppard, Lara D. 1997 "Stemming the Tide? The Effects of Expanding Medicaid Eligibility on Health Insurance Coverage." Working paper, University of Pittsburgh.
- Shore-Sheppard, Lara D., Thomas C. Buchmueller, and Gail A. Jensen. 2000. "Medicaid and crowding out of private insurance: a re-examination using firm level data." *Journal of Health Economics*, Vol. 19 (January), pp.61-91.
- "State Requirements Regarding Medicaid Substitution." 2004. Agency for Health Care Research and Quality. <http://www.statecoverage.net/matrix.htm>
- U.S. Committee on Ways and Means. 2000 Green Book (Washington D.C.: U.S. Government Printing Office), 2000.
- U.S. Committee on Ways and Means. 2004 Green Book (Washington D.C.: U.S. Government Printing Office), 2004.
- Yazici, Esel Y. and Robert Kaestner. 2000. "Medicaid Expansions and the Crowding Out of Private Health Insurance Among Children." *Inquiry- Excellence Health Plan*, Vol. 37:1 (Spring): 23-32.
- Zukerman, Stephen, [G. Kenney](#), [L. Dubay](#), [J. Haley](#) and [J. Holahan](#). 2001 "Shifting Health Insurance Coverage." *Health Affairs*, Vol. 20: 1 (January/February):169-77).

Figure 1

Proportion of Children 18 and Under Eligible for Public Health Insurance Benefits Under the Medicaid and SCHIP Programs by Income Relative to the Poverty Line, 2001

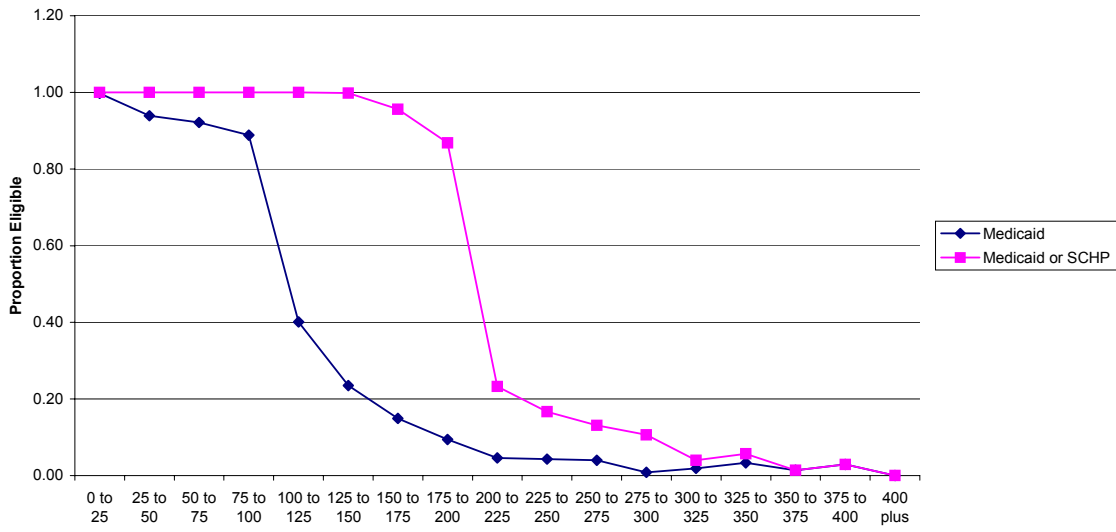


Figure 2

Proportion of Children Eligible for Medicaid by Income Relative to the Poverty Line, States with Small and Large SCHIP Expansions

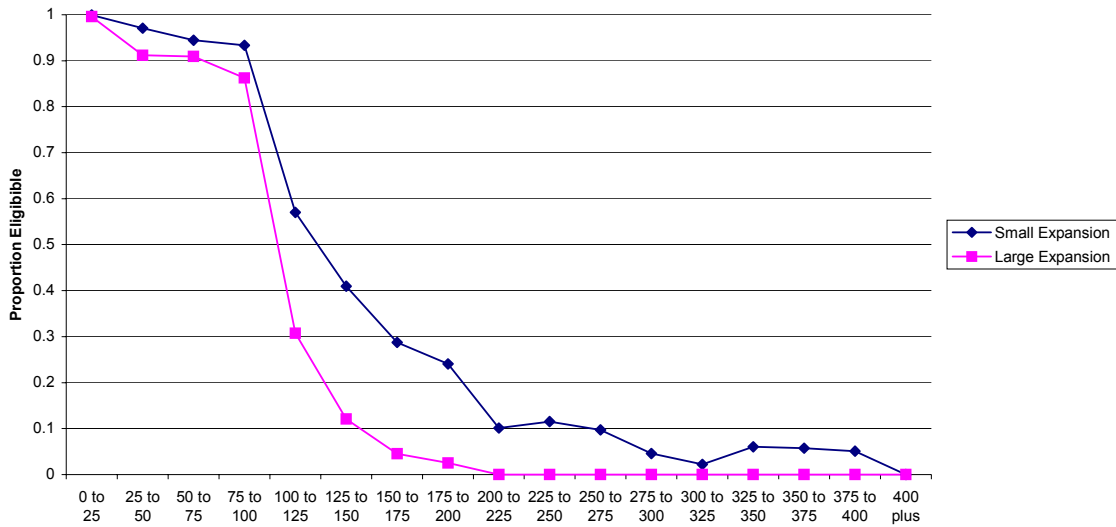


Figure 3

Change in the Proportion of Children Eligible for Public Health Insurance by Income Relative to the Poverty Line, States with Small and Large SCHIP Expansions

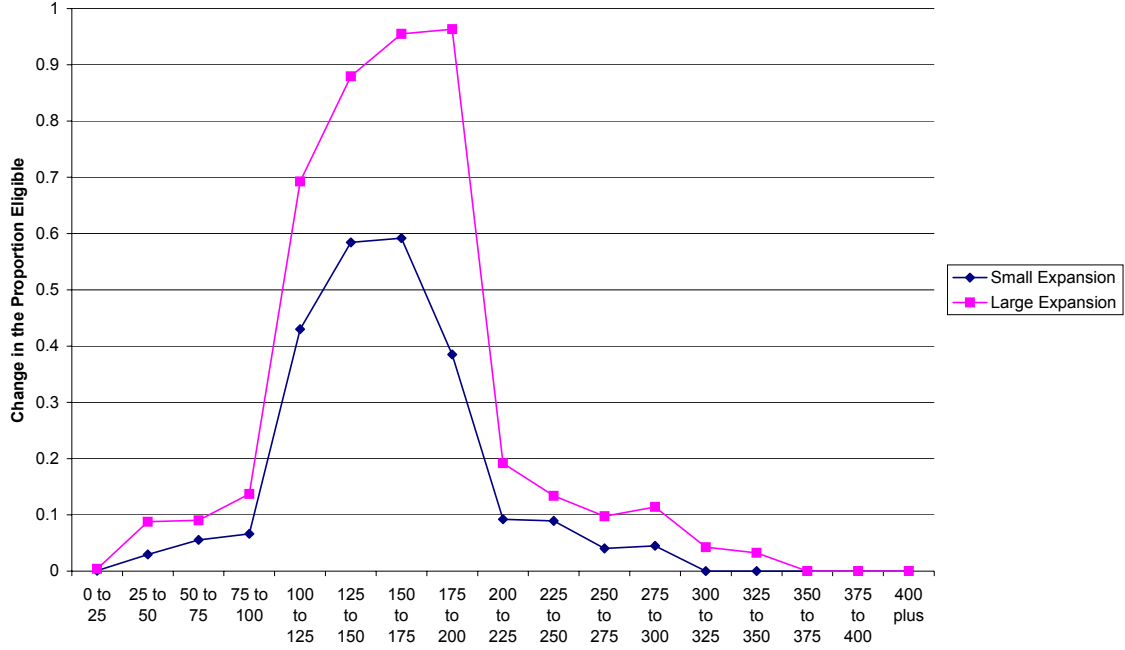


Figure 4

Proportion of Children 18 and Under Covered by Public Health Insurance by Income Relative to the Poverty Line, 1997 and 2001

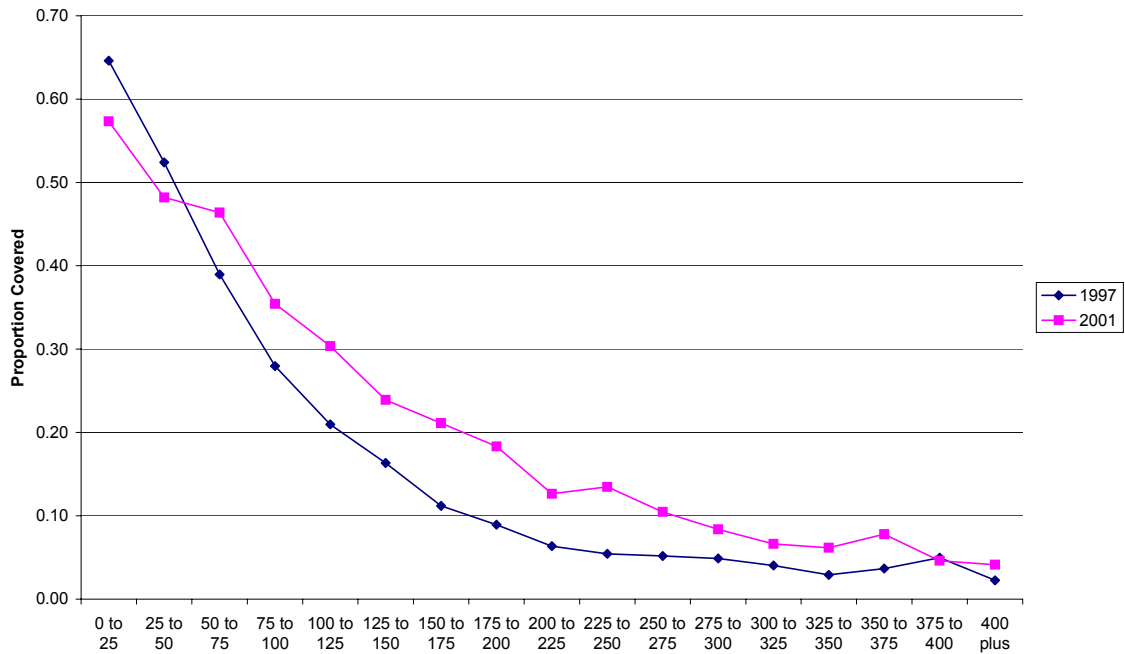


Figure 5

Proportion of Children 18 and Under with Private Health Insurance Benefits by Income Relative to the Poverty Line, 1997 and 2001

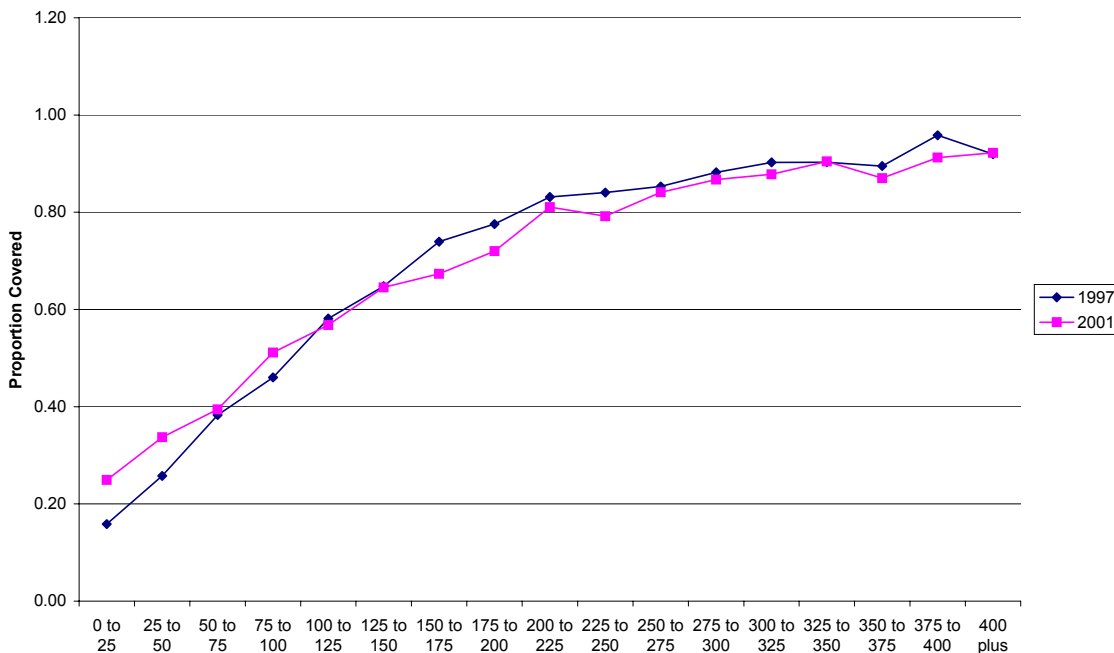


Figure 6

Scatter Plot of the 1997 to 2001 State Level Change in Private Health Insurance Coverage Among SCHIP Eligible Children Against the Comparable Change in Public Health Insurance Coverage

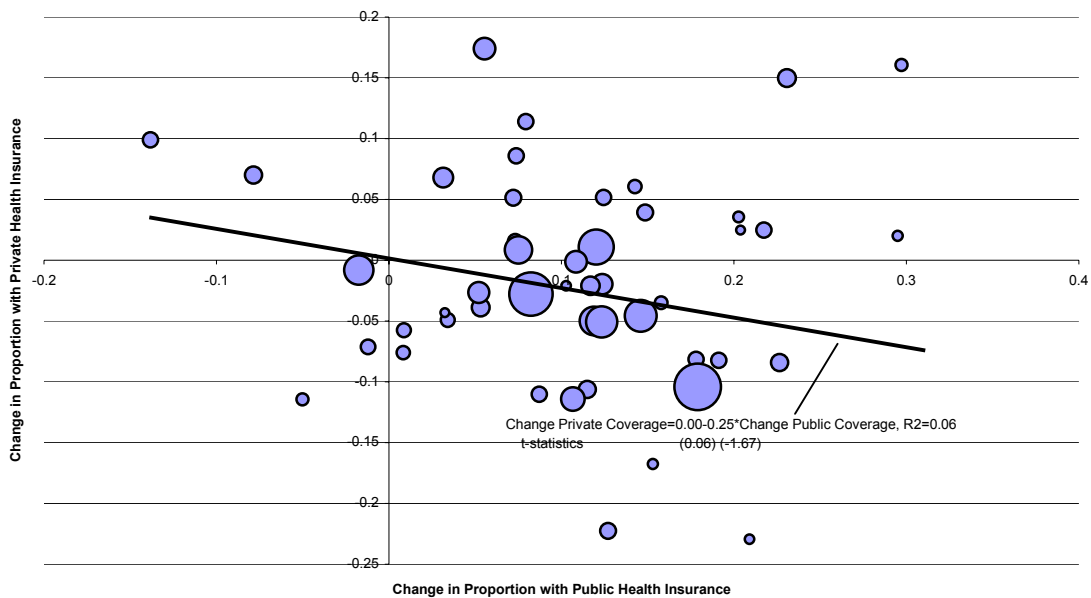


Figure 7

Proportion of Children Under 18 With Health Insurance Coverage by Income Relative to the Poverty Line, 1997 and 2001

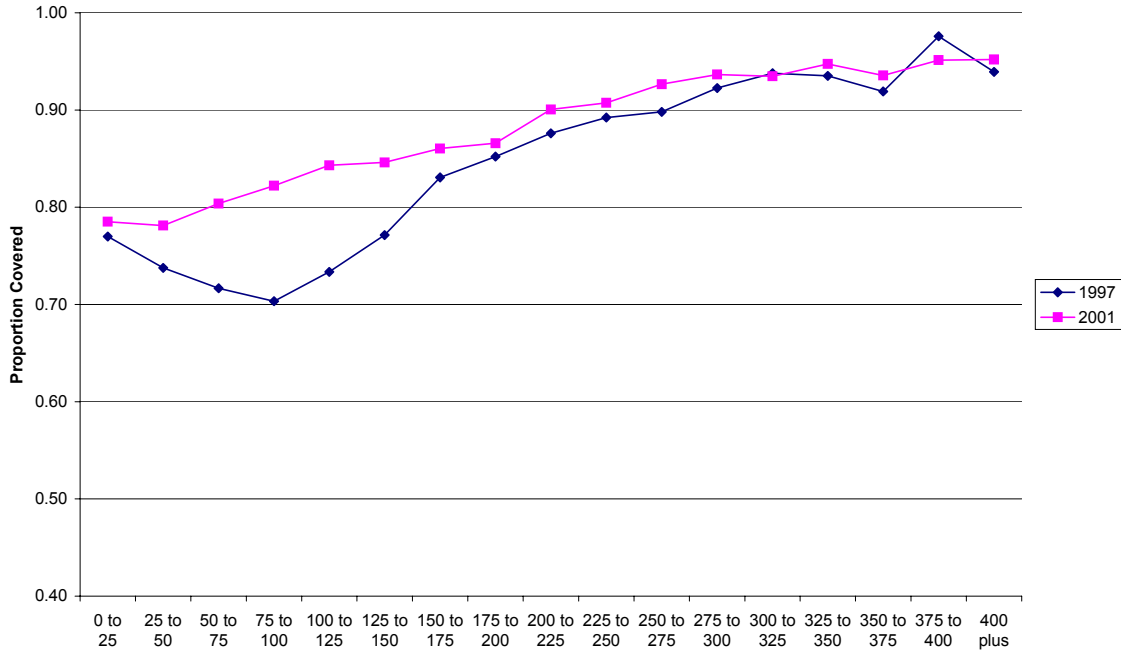


Figure 8

The Number of States Adopting Making Use of Each Outreach Effort in Implementing the SCHIP Expansion

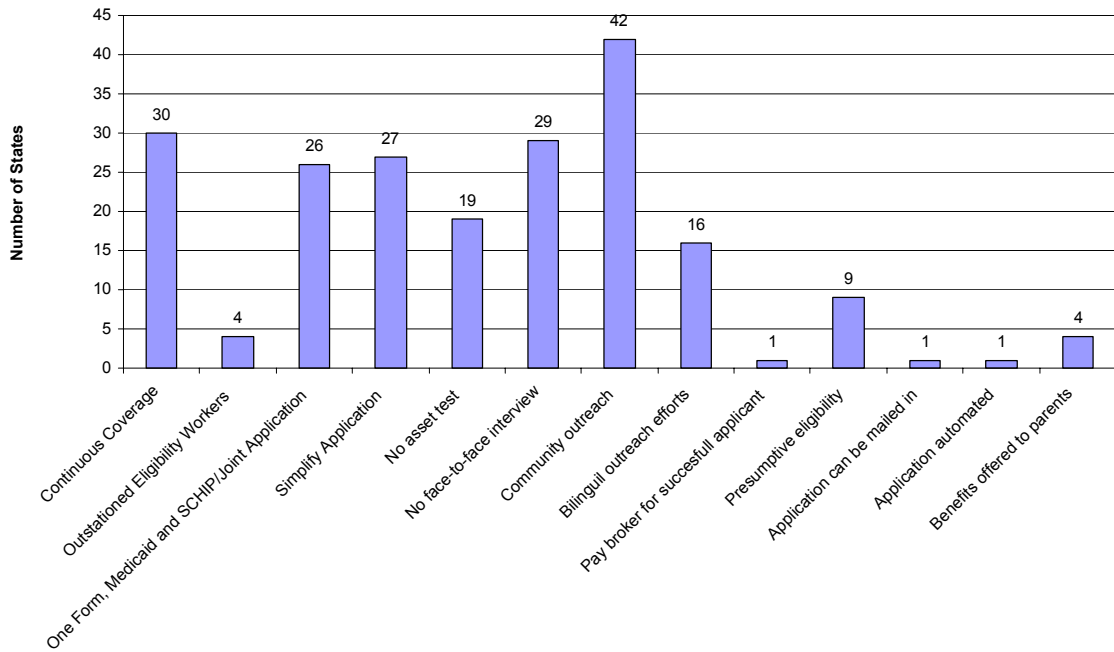


Figure 9

Number of States Adopting Specific Anti-Crowd Out Provisions in Implementing the SCHIP Expansion

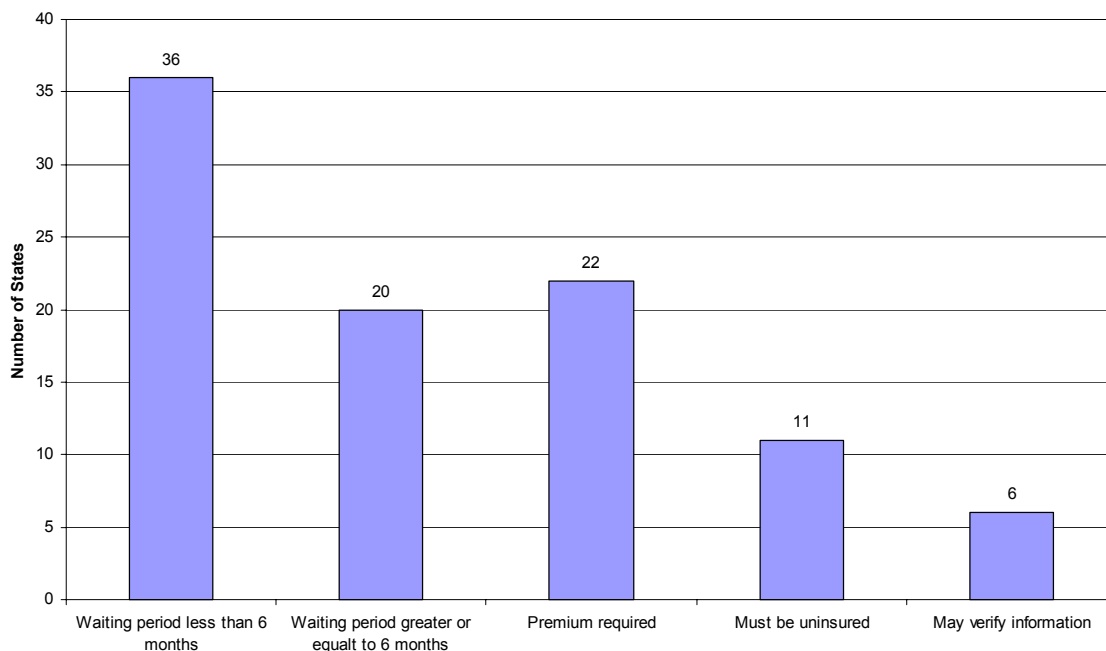


Figure 10

Scatter Plot of the 1997 to 2001 State Level Change in Public Health Insurance Coverage Among SCHIP Eligible Children Against the Predicted Policy-Induced Change in Public Health Insurance Coverage

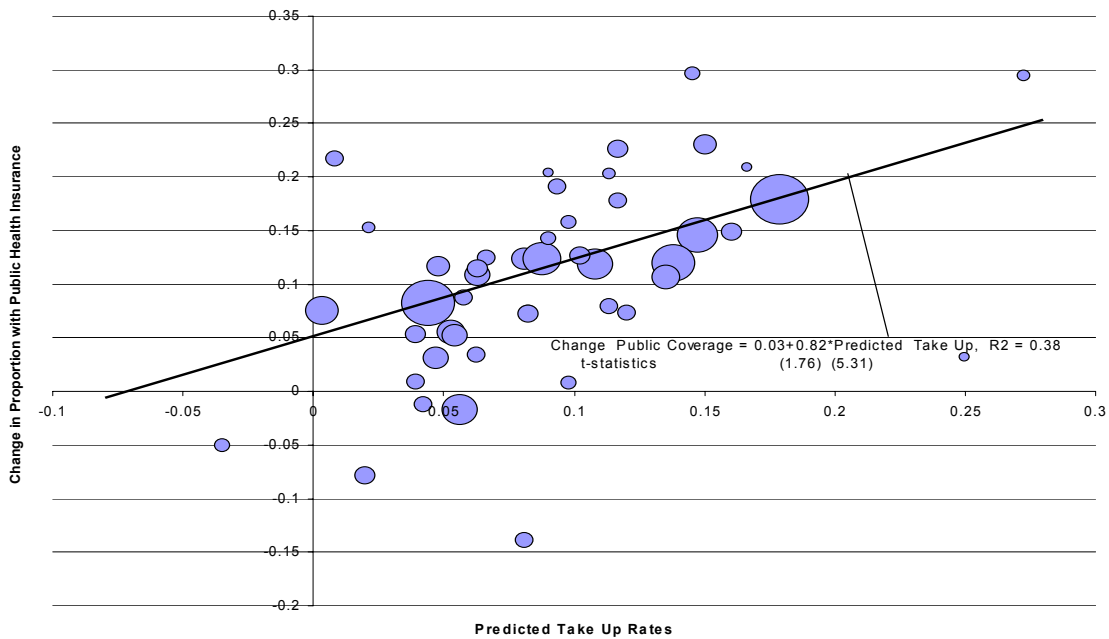


Figure 11

Scatter Plot of the 1997 to 2001 State Level Change in Private Health Insurance Coverage Among SCHIP Eligible Children Against the Predicted Policy-Induced Change in Public Health Insurance Coverage

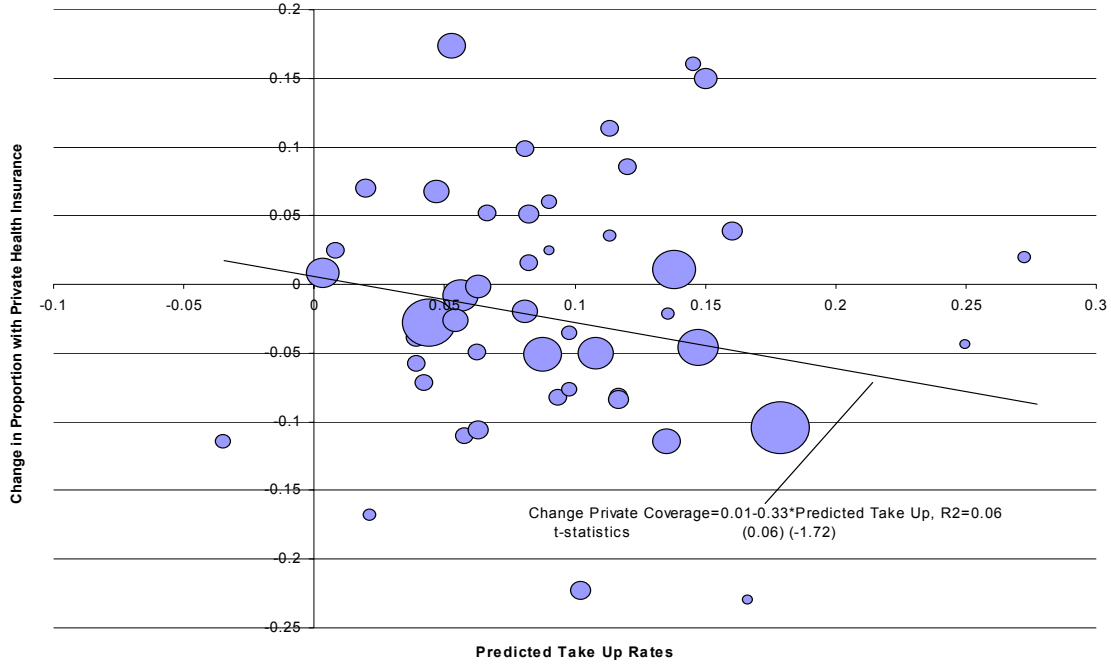


Table 1
Proportion of Children 18 and Under Covered by Health Insurance by Type and the
Proportion Eligible for Public Health Insurance, 1997 and 2001

	1997	2001	Change
Coverage Rates			
Covered	0.847 (0.002)	0.880 (0.001)	0.033 (0.002)
Public	0.200 (0.002)	0.223 (0.001)	0.023 (0.002)
Private	0.668 (0.002)	0.682 (0.002)	0.015 (0.003)
Eligible Among All Children			
Medicaid Eligible	0.339 (0.002)	0.323 (0.002)	-0.016 (0.003)
SCHIP Eligible	0.000 (0.000)	0.190 (0.001)	0.190 (0.001)
Eligible Among Uninsured Children			
Medicaid Eligible	0.513 (0.006)	0.495 (0.006)	-0.019 (0.009)
SCHIP Eligible	0.000 (0.000)	0.250 (0.005)	0.250 (0.005)

Standard errors are parentheses. Figures for 1997 are calculated from the 1998 March CPS. Figures for 2001 are calculated from the 2002 March CPS.

Table 2
Descriptive Statistics for Children and Parent Characteristics by Eligibility Status for Medicaid and SCHIP During 2001 and by Whether the Child Received Medicaid or SCHIP Benefits

	Medicaid Eligible			SCHIP Eligible			Not Eligible for Either SCHIP or Medicaid		
	Total	No Public Coverage	Public Coverage	Total	No Public Coverage	Public Coverage	Total	No Public Coverage	Public Coverage
Child Characteristics									
Covered	0.816	0.659	1.000	0.842	0.799	1.000	0.937	0.932	1.00
Public	0.463	0.000	1.000	0.216	0.000	1.000	0.068	0.000	1.00
Private	0.396	0.626	0.129	0.657	0.773	0.239	0.883	0.918	0.404
Age	7.688	8.123	7.185	10.434	10.496	10.209	9.560	9.606	8.938
Black	0.243	0.190	0.305	0.171	0.161	0.209	0.103	0.095	0.205
Income/poverty	0.487	0.627	0.324	1.554	1.588	1.429	5.186	5.275	3.965
# of kids	3.541	3.530	3.562	3.185	3.221	3.053	2.535	2.534	2.562
Family size	4.535	4.594	4.465	4.620	4.691	4.367	4.145	4.167	3.841
Parent Characteristics									
Age	36.943	38.781	34.855	40.709	41.055	39.432	42.489	42.578	41.143
Immigrant	0.212	0.212	0.213	0.203	0.187	0.259	0.114	0.112	0.144
Married	0.433	0.506	0.348	0.651	0.667	0.593	0.789	0.800	0.644

Tabulations are based on data from the March 2002 CPS.

Table 3
Proportion of Children Covered by Types of Coverage and by Medicaid and SCHIP
Eligibility Status

Eligibility Status	1997	2001	Unadjusted Change	Adjusted Change 1	Adjusted Change 2
Panel A: Has Health Insurance Coverage					
Medicaid	0.768 (0.004)	0.816 (0.003)	0.049 (0.004)	0.049 (0.004)	0.050 (0.004)
SCHIP	0.780 (0.005)	0.842 (0.003)	0.062 (0.005)	0.068 (0.005)	0.069 (0.005)
Ineligible	0.925 (0.002)	0.937 (0.001)	0.012 (0.002)	0.011 (0.002)	0.013 (0.002)
Δ SCHIP - Medicaid	-	-	0.014 (0.007)	0.020 (0.007)	0.020 (0.007)
Δ SCHIP - Ineligible	-	-	0.050 (0.005)	0.057 (0.005)	0.057 (0.005)
Panel B: Has Publicly-Provided Health Insurance Coverage					
Medicaid	0.483 (0.004)	0.462 (0.003)	-0.021 (0.005)	-0.009 (0.005)	-0.007 (0.005)
SCHIP	0.111 (0.003)	0.216 (0.004)	0.105 (0.005)	0.101 (0.005)	0.101 (0.005)
Ineligible	0.036 (0.001)	0.068 (0.001)	0.032 (0.002)	0.034 (0.002)	0.033 (0.002)
Δ SCHIP - Medicaid	-	-	0.125 (0.008)	0.110 (0.008)	0.108 (0.008)
Δ SCHIP - Ineligible	-	-	0.072 (0.004)	0.067 (0.004)	0.068 (0.004)
Panel C: Has Private Health Insurance Coverage					
Medicaid	0.329 (0.004)	0.396 (0.003)	0.066 (0.005)	0.054 (0.005)	0.053 (0.004)
SCHIP	0.690 (0.006)	0.657 (0.004)	-0.032 (0.007)	-0.023 (0.006)	-0.021 (0.006)
Ineligible	0.894 (0.002)	0.882 (0.002)	-0.012 (0.003)	-0.014 (0.003)	-0.011 (0.003)
Δ SCHIP - Medicaid	-	-	-0.098 (0.008)	-0.077 (0.008)	-0.074 (0.008)
Δ SCHIP - Ineligible	-	-	-0.020 (0.006)	-0.009 (0.005)	-0.009 (0.005)

Standard errors are in parentheses. SCHIP eligible in 1997 refer to those children that would be hypothetically eligible in 1997 for SCHIP benefits under the 2001 eligibility criteria. Unadjusted changes refer to the difference in means between the coverage rates reported in the second and third columns. Adjusted change 1 refers to the corresponding regression-adjusted change, where the regression specification includes a third-order polynomial in age, a male dummy variable and a full set of dummy variables indicating household income relative to the poverty line in 25 percent increments (omitted category includes children with households incomes that are 400 percent or more of the poverty line). Adjusted change 2 refers to the regression-adjusted change including all variables in the previous specification plus a full set of state dummy variables. Separate models are estimated for the Medicaid-eligible, SCHIP-eligible, and ineligible populations.

Table 4
Regression Estimates of the Effect of State Outreach and Anti-Crowd Out Policy on the Take Up of Public Benefits

	Without Controls		Control Variables Included	
	Base Effect	Interaction with 2001 dummy	Base effect	Interaction with 2001 dummy
Intercept	0.075 (0.022)	0.121 (0.001)	-0.006 (0.030)	0.115 (0.030)
Outreach Policy				
Continuous Coverage	0.006 (0.015)	0.028 (0.020)	0.002 (0.016)	0.037 (0.020)
Out-stationed elig. Workers	0.033 (0.033)	0.117 (0.045)	0.020 (0.033)	0.116 (0.044)
One form, Med. and SCHIP	0.039 (0.012)	-0.034 (0.016)	0.037 (0.014)	-0.059 (0.018)
Simplify application	0.024 (0.013)	-0.038 (0.018)	0.005 (0.013)	-0.039 (0.017)
No asset test	-0.018 (0.017)	0.013 (0.023)	0.008 (0.017)	0.000 (0.023)
No face-to-face interview	-0.007 (0.016)	0.073 (0.022)	-0.008 (0.017)	0.056 (0.023)
Community outreach				
Bilingual outreach	0.036 (0.027)	-0.020 (0.027)	0.027 (0.022)	-0.033 (0.030)
Presumptive eligibility	-0.003 (0.013)	0.003 (0.018)	-0.015 (0.014)	0.002 (0.018)
Pay broker for applicants	0.039 (0.015)	-0.004 (0.020)	0.026 (0.018)	0.015 (0.024)
Mail-in applications	0.009 (0.032)	0.063 (0.044)	-0.010 (0.034)	0.095 (0.046)
Automated application	0.085 (0.072)	0.214 (0.091)	0.036 (0.073)	0.188 (0.093)
Extend benefits to parents	0.062 (0.056)	-0.179 (0.074)	0.026 (0.057)	-0.131 (0.075)
Anti-Crowd Out Policy				
Waiting period, < 6 months	-0.067 (0.026)	0.108 (0.035)	-0.090 (0.030)	0.147 (0.041)
Waiting period ≥ 6 months	-0.020 (0.016)	-0.003 (0.022)	-0.038 (0.016)	0.008 (.023)
Premium required	-0.004 (0.014)	-0.029 (0.019)	0.031 (0.014)	-0.027 (.020)
Must be uninsured	-0.023 (0.012)	-0.031 (0.017)	-0.045 (0.012)	-0.018 (0.017)
Verifies information	-0.023 (0.013)	-0.039 (0.018)	-0.005 (0.014)	-0.032 (0.018)
	-0.043 (0.016)	-0.024 (0.023)	-0.017 (0.017)	-0.027 (0.023)

White corrected standard errors are presented in parentheses. Control variables in the second specification include a third order polynomial in age, a male dummy, dummies for income relative to the poverty line in 25 percentage point increments (above 400 percent omitted), race of child and parent, marital status of parents, immigrant status of the child and parent, dummies for Northeast, Midwest, and South, and a set of interaction terms between the region dummies and the year 2001 dummy.

Table 5
Regression Estimates of the Effect of State Outreach and Anti-Crowd Out Policy on the Likelihood of Being Covered by Private Health Insurance

	Without Controls		Control Variables Included	
	Base Effect	Interaction with 2001 dummy	Base effect	Interaction with 2001 dummy
Intercept	0.523 (0.037)	0.085 (0.045)	0.725 (0.053)	0.032 (0.045)
Outreach Policy				
Continuous Coverage	0.022 (0.020)	-0.055 (0.025)	0.037 (0.021)	-0.043 (0.026)
Out-stationed elig. Workers	0.175 (0.047)	-0.219 (0.058)	0.187 (0.045)	-0.212 (0.056)
One form, Med. and SCHIP	0.010 (0.019)	-0.072 (0.023)	0.069 (0.020)	-0.084 (0.025)
Simplify application	-0.037 (0.018)	0.046 (0.022)	-0.024 (0.018)	0.049 (0.022)
No asset test	-0.040 (0.024)	0.074 (0.029)	-0.100 (0.023)	0.085 (0.029)
No face-to-face interview	-0.001 (0.022)	-0.080 (0.027)	0.068 (0.023)	-0.085 (0.029)
Community outreach	0.216 (0.031)	-0.119 (0.038)	0.184 (0.033)	-0.133 (0.041)
Bilingual outreach	-0.082 (0.019)	0.007 (0.023)	-0.046 (0.019)	-0.000 (0.023)
Presumptive eligibility	0.003 (0.020)	0.007 (0.025)	-0.043 (0.023)	0.029 (0.029)
Pay broker for applicants	0.039 (0.045)	-0.151 (0.056)	0.086 (0.047)	-0.101 (0.059)
Mail-in applications	-0.052 (0.094)	-0.154 (0.111)	0.161 (0.096)	-0.218 (0.110)
Automated application	0.167 (0.065)	-0.067 (0.084)	0.141 (0.066)	-0.101 (0.086)
Extend benefits to parents	0.063 (0.039)	-0.025 (0.048)	-0.039 (0.044)	0.012 (0.054)
Anti-Crowd Out Policy				
Waiting period, < 6 months	0.053 (0.024)	0.043 (0.031)	0.013 (0.028)	0.043 (0.033)
Waiting period ≥ 6 months	0.029 (0.021)	-0.034 (0.026)	0.016 (0.023)	-0.041 (0.028)
Premium required	-0.096 (0.020)	0.135 (0.024)	-0.102 (0.021)	0.135 (0.025)
Must be uninsured	0.045 (0.019)	-0.029 (0.023)	0.060 (0.019)	-0.029 (0.023)
Verifies information	0.039 (0.028)	0.031 (0.035)	0.047 (0.028)	0.019 (0.033)

White corrected standard errors are in parentheses. Control variables in the second specification include a third order polynomial in age, a male dummy, dummies for income relative to the poverty line in 25 percentage point increments (above 400 percent omitted), race of child and parent, marital status of parents, immigrant status of the child and parent, dummies for Northeast, Midwest, and South, and a set of interaction terms between the region dummies and the year 2001 dummy.

Appendix Table A
Expanding Public Health Insurance for Children
Medicaid and SCHIP Income Eligibility Guidelines by State

State	Plan Type (as of March 2001)	Plan Name	Medicaid % FPL <1/<6/6-14/15-18 (1997)	SCHIP %FPL infants/1-18 (2001)
Alabama	Combo	All Kids	33/133/100/15	200
Alaska	ME	Denali KidCare	133/100/100/76	200
Arizona	SP	KidsCare	140/ 133/100/32	200
Arkansas	ME	ARKidsFirst	200/200/200/200	200
California	Combo	Access for Infants and Mothers & Healthy Families	200/133/100/82	300/200
Colorado	SP	Children's Health Plan Plus (CHP+)	133/133/100/39	185
Connecticut	Combo	Husky A & Husky B	185/185/185/185	300
Delaware	SP	Delaware Healthy Children Program	185/133/100/100	200
DC	ME	Healthy DC Kids	185/133/100/37	200
Florida	Combo	Florida KidCare Program	185/133/100/28	200
Georgia	SP	PeachCare for Kids	185/133/100/39	235
Hawaii	ME	QUEST	185/133/100/100	200
Idaho	ME		133/133/100/29	150
Illinois	Combo	KidCare Assist, KdCare Share and KidCare Premium	133/133/100/46	200/185
Indiana	Combo	Hoosier Healthwise	150/133/100/100	200
Iowa	Combo	Healthy and Well Kids in Iowa (HAWK-I)	185/133/100/39	200
Kansas	SP	Health Wave	150/133/100/100	200
Kentucky	Combo	KCHIP	185/150/150/150	200
Louisiana	ME	LaCHIP	133/133/100/100	150
Maine	Combo	Cub Care	185/133/125/125	200
Maryland	ME	Maryland Children's Health Program	185/185/185/34	200
Massachusetts	Combo	MassHealth Standard, MassHealth, & MassHealth Family Assistance	185/133/133/133	200
Michigan	Combo	Healthy Kids & MICHild	185/150/150/150	200
Minnesota	ME	Minnesota Care	275/275/275/275	280/275
Mississippi	Combo		185/133/100/34	200

State	Plan Type (as of March 2001)	Plan Name	Medicaid <1/<6/6-14/15-18 (1997)	SCHIP infants/1-18 (2001)
Missouri	ME	MC+ For Kids	185/133/100/100	300
Montana	SP	MT CHIP	133/133/100/41	150
Nebraska	ME	Kids Connection	150/133/100/34	185
Nevada	SP	Nevada CheckUp	133/133/100/45	200
New Hampshire	Combo	Healthy Kids Gold & Healthy Kids Silver	185/185/185/185	300
New Jersey	Combo	NJ FamilyCare Plan A & NJ FamilyCare Plans B, C, D	185/133/100/41	350
New Mexico	ME		185/185/185/185	235
New York	Combo	Child Health Plus (CHPlus)	185/133/100/87	185
North Carolina	SP	NC Health Choice for Children	133/133/100/100	200
North Dakota	Combo		133/133/100/100	140
Ohio	ME	Healthy Start	133/133/100/32	200
Oklahoma	ME	Sooner Care	150/133/100/48	185
Oregon	SP	OR CHIP	133/133/100/100	170
Pennsylvania	SP	PA CHIP	185/133/100/100	235
Rhode Island	ME	RItE Care	250/250/250/250	300
South Carolina	ME	Partners for Healthy Children	185/133/100/18	150
South Dakota	Combo	SD CHIP & CHIP NM	133/133/100/100	200
Tennessee	ME	TennCare 1115 Waiver	400/400/400/400	400
Texas	Combo	TX CHIP	185/133/100/17	200
Utah	SP	Utah CHIP	133/133/100/100	200
Vermont	SP	Dr. Dynassaur	225/225/225/225	300
Virginia	SP	FAMIS (Family Access to Medical Insurance Security Plan)	133/133/100/100	200
Washington	SP	Washington CHIP	200/200/200/200	250
West Virginia	Combo	WV CHIP	150/133/100/100	200
Wisconsin	ME	BadgerCare 1115 Waiver	185/185/100/100	185
Wyoming	SP	Wyoming Kid Care	133/133/100/55	133

ME: Medicaid Expansion; SP: Stand-alone program Combo: Combination (Medicaid expansion and stand-alone program) Sources: Shore-Sheppard (2003) and Green Book (2004)

Appendix Table B – Outreach and Anti-Crowdout Measures by State

State	OUTREACH											ANTI CROWDOUT							
	Parent eligibility	Bilingual outreach	Presumptive eligibility	Continuous coverage	Simplified application	Asset disregards	Joint application with Medicaid	Community outreach	Eliminated face-to-face interview	Pays broker for successful appl.	Application can be mailed in	Application automated	Outstationed eligibility workers	less than 6 month waiting period	waiting period of 6 months or more	Must be uninsured when apply	Premium required for recipients	States will monitor crowdout	Verifies private insurance status
Alabama	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	1	0	0	
Alaska	0	0	0	1	1	1	0	0	1	0	0	0	0	1	0	0	0	0	
Arizona	0	1	0	1	1	0	1	0	0	0	0	1	0	1	0	1	0	0	
Arkansas	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	
California	0	1	0	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	
Colorado	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	1	0	
Connecticut	0	0	1	1	0	0	1	1	0	0	0	0	0	0	1	0	1	0	
Delaware	0	1	0	1	0	1	1	1	1	0	0	0	0	0	1	0	1	0	
DC	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	
Florida	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	
Georgia	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	0	1	0	
Hawaii	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
Idaho	0	1	0	1	1	0	0	1	1	0	0	0	0	0	0	1	0	0	
Illinois	0	0	0	1	1	0	1	1	0	0	0	0	0	1	0	0	1	0	
Indiana	0	0	0	1	1	1	0	1	1	0	0	0	0	0	0	1	1	0	
Iowa	0	0	0	1	0	1	1	1	1	0	0	0	0	0	1	1	1	0	
Kansas	0	0	0	1	1	1	1	1	1	0	0	0	0	0	1	1	1	0	
Kentucky	0	0	1	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	
Louisiana	0	0	0	1	1	1	0	1	1	0	0	0	0	1	0	0	0	0	
Maine	0	0	1	1	0	0	1	1	1	0	0	0	0	1	0	0	1	0	
Maryland	0	0	0	1	1	1	0	1	1	0	0	0	0	0	1	1	0	0	
Massachusetts	0	0	1	0	1	1	1	0	1	0	0	1	1	0	0	0	1	0	
Michigan	0	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0	1	0	
Minnesota	1	1	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	
Mississippi	0	0	0	1	1	1	0	1	1	0	0	0	0	0	1	0	0	1	
Missouri	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	
Montana	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	
Nebraska	0	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	0	1	
Nevada	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	
New Hampshire	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	1	0	
New Jersey	1	0	1	0	1	0	1	1	1	0	0	0	0	0	1	0	1	0	
New Mexico	0	1	1	1	0	1	0	1	1	0	0	0	0	0	1	0	0	0	
New York	0	1	1	0	0	0	1	0	0	0	0	0	1	0	0	1	1	1	
North Carolina	0	1	0	1	0	0	1	1	1	0	0	0	0	0	1	0	1	0	
North Dakota	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
Ohio	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	
Oklahoma	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	1	
Oregon	0	0	0	0	1	0	1	1	0	0	0	0	0	0	1	0	0	0	
Pennsylvania	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	1	0	1	
Rhode Island	1	1	0	1	0	0	0	1	0	0	0	0	0	1	0	0	1	0	
South Carolina	0	1	0	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	
South Dakota	0	0	0	0	1	1	1	1	1	0	0	0	0	0	1	0	0	0	
Tennessee	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
Texas	0	1	0	1	0	0	1	1	0	0	0	0	0	1	0	0	1	0	
Utah	0	1	0	1	1	0	0	1	0	0	0	0	0	1	0	0	0	1	
Vermont	0	0	0	1	0	1	1	1	1	0	0	0	0	1	0	0	1	1	
Virginia	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	0	1	0	
Washington	0	0	0	1	0	1	1	1	1	0	0	0	0	1	0	0	1	0	
West Virginia	0	0	0	1	1	1	0	1	1	0	0	0	0	0	1	0	0	0	
Wisconsin	1	0	0	0	0	0	1	1	1	0	0	0	0	1	0	1	1	0	
Wyoming	0	0	0	1	1	0	1	1	0	0	0	0	0	1	0	0	0	0	
TOTALS	4	16	9	30	27	19	26	42	29	1	1	1	4	15	20	11	24	11	6

Source: Shore-Sheppard, Lara. (2003)