Draft; comments welcome

CONSEQUENCES OF PUBLIC HEALTH INSURANCE EXPANSIONS FOR HOUSEHOLD WELL-BEING

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ABSTRACT

About 7.4 million children were covered by the State Children's Health Insurance Program (SCHIP) at some point during fiscal year 2008. Many of these children would probably have had private coverage in the absence of SCHIP; recent estimates of the extent of "crowd-out" associated with SCHIP are about 60 percent (Gruber and Simon 2008). The high rate of crowd-out means that the program is not as effective is it might be at reducing the number of uninsured children and has been a political liability for the program. Both political concerns and policy research focusing on crowd-out in SCHIP build on more than a decade of similar attention to the crowd-out associated with the Medicaid expansions of the late 1980s and early 1990s.

This focus on crowd-out has overshadowed a related question about the impact of SCHIP, namely: how has the program affected the overall well-being of targeted households? Well-being depends not only on health insurance coverage but on the full set of economic resources available to a household. While there is little doubt that expanding eligibility for public insurance to children who are not poor will lead some to substitute public for private coverage, this substitution should increase total resources available to these households in two ways. First, those who drop private coverage in order to enroll their children in SCHIP can take whatever they had been spending on health insurance and spend it on something else. Second, public insurance requires less cost-sharing than a typical private insurance policy, providing first-dollar coverage with minimal co-payments. This means that switching from private to public coverage reduces a family's out-of-pocket medical spending, freeing up even more of the family's resources for other uses.

From the perspective of a low-income family, then, crowd-out is a windfall. In this paper we ask how big is this windfall, and what do these families do with it? We address this question with an empirical analysis of consumption data from the Consumer Expenditure Survey. We find that eligibility for SCHIP is associated with an increase in overall spending, and most of this increase appears to come in spending on housing, food and transportation. These results suggest that the SCHIP expansions substantially improved the material well-being of the low-income families it is intended to assist – including those who had previously been paying for their own coverage. This evidence should allow a better accounting of the benefits and not just the costs of recent expansions in public health insurance programs.

1. Introduction

About 7.4 million children were covered by the State Children's Health Insurance Program (SCHIP) at some point during fiscal year 2008 (CMS, http://www.cms.hhs.gov/NationalCHIPPolicy/downloads/CHIPEverEnrolledYearGraph.pdf). Many of these children would probably have had private coverage in the absence of SCHIP; recent estimates of the extent of "crowd-out" associated with SCIHP are about 60 percent (Gruber and Simon 2008). The high rate of crowd-out means that the program is not as effective is it might be at its stated goal of reducing the number of uninsured children in the United States, and has been a political liability for the program. Indeed, the fear that public coverage might substitute for private was a key factor leading then-President George W. Bush to veto two different SCHIP reauthorization bills in 2008.[1] Both political concerns and policy research focusing on crowd-out in SCHIP build on more than a decade of similar attention to the crowd-out associated with the Medicaid expansions of the late 1980s and early 1990s.[2]

This focus on crowd-out has overshadowed a more fundamental question about the impact of SCHIP, namely: how has the program affected the overall well-being of targeted households? Well-being depends not only on health insurance coverage but on the full set of economic resources available to a household. While there is little doubt that expanding eligibility for public insurance to children who are not poor will lead some to substitute public for private coverage, this substitution should increase total resources available to these households in two ways. First, those who drop private coverage in order to enroll their children in SCHIP can take

[1] In his words: "[u]ltimately, our Nation's goal should be to move children who have no health insurance to private coverage -- not to move children who already have private health insurance to government coverage." (George W. Bush, October 6, 2007, quoted on www.whitehouse.gov/infocus/healthcare;downloaded 11/27/07). Senate Minority Leader Mitch McConnell (R – Kentucky) observed on the floor of the Senate that "nine out of ten" children at the upper end of New York State's proposed income eligibility cutoff already had private health insurance and warned that expansions of SCHIP coverage beyond poor children would "bring us down the path of government-run health care for everyone." (CSPAN clip on YouTube: http://www.youtube.com/watch?v=7smjd77iU5o, viewed 11/27/07.)

whatever they had been spending on health insurance and spend it on something else. Consider a family of four with income of $40,000 (about twice the Federal poverty level) that has an employer-sponsored health insurance policy for which they contribute $200 per month. Suppose that the children become eligible for SCHIP, enabling the parents to change their private coverage to adults-only for a $100 reduction in their monthly premium contribution. Even with no additional assumption about the tradeoff between wages and fringes, this represents a three percent increase in their pretax income. If the wages of the working policyholder increase to reflect the reduction in the employer's spending on health insurance, as research suggests they will, the increase in family income will be even greater.[3] Second, public insurance requires less cost-sharing than a typical private insurance policy, providing first-dollar coverage with minimal co-payments. This means that switching from private to public coverage may also reduce a family's out-of-pocket medical spending, freeing up even more of the family's resources for other uses.

From the perspective of a low-income family, then, crowd-out is a windfall. How big is this windfall, and what do these families do with it? We address this question with an empirical analysis of consumption data from the Consumer Expenditure Survey. Researchers are increasingly using consumption as a reliable measure of the well-being of economically vulnerable families (Meyer and Sullivan 2003, Meyer and Sullivan 2004). We find that eligibility for SCHIP is associated with an increase of $2500-$3700 in total spending – about 25 percent of total household spending at baseline. We also find some limited evidence that spending on other goods – especially durable goods and transportation in particular – increases

[2] We review this literature in more detail below.
[3] Gruber (1994), Sheiner (1999) and Olson (2002) all provide evidence that there is a one-for-one tradeoff between wages and health insurance: that is, if an employer's spending on health insurance goes down, the employee's wages should go up by the same amount.

and out-of-pocket spending on medical care and insurance premiums decreases. These results suggest that the SCHIP expansions substantially improved the material well-being of the low-income families it is intended to assist – including those who had previously been paying for their own coverage. This evidence should allow a better accounting of the benefits and not just the costs of this relatively new public program.

2. Background

There is a considerable body of research documenting substantial crowd-out associated with expansions of public coverage. A study by Cutler and Gruber (1996) was the first in a series of papers examining the impact of the Medicaid expansions on both public and private coverage (see also Dubay and Kenney 1996, 1997; Cutler and Gruber 1997; Blumberg, Dubay and Norton 2000; Yazici and Kaestner 2000; Shore-Sheppard 2005; and Ham and Shore-Sheppard 2005). Although there is some disagreement over the extent of crowd out – the studies listed above offer a range of estimates from zero to fifty percent - there is a general consensus that it exists and that it is a problem. More recently, as mentioned above, Gruber and Simon (2008) estimate that increases in public coverage associated with SCHIP between 1996 and 2002 were associated with a sixty percent crowd-out rate. Even those who estimate relatively little crowd-out associated with the initial expansions of Medicaid to poor children acknowledge that coverage expansions targeting higher-income children are associated with higher rates of crowding out (see Dubay and Kenney 1996).

None of these studies of crowd-out has analyzed the impact of coverage expansions on households' overall well-being. This is particularly surprising because research on other public programs routinely acknowledges the impact of in-kind transfers on other types of consumption. For example, it has long been recognized that both Food Stamps and public education are

associated with substantial crowd-out in the sense that they replace private spending with public transfers (see Southworth [1945] on Food Stamps and Pelzman [1971] on education). But in these contexts, this substitution is just one part of the picture, and the impact of transfers is considered in a more general framework of households allocating resources optimally across all goods. The result is a very different interpretation of crowding out. Food Stamp recipients who substitute the stamps for their own food spending, and spend their cash income on other goods (analogous to families with private health insurance that is "crowded out" by SCHIP) are considered "not distorted" – and therefore, efficient – in evaluations of the Food Stamp program (Martini, Fraker and Ohls 1995; Whitmore 2002). Similarly, high-income families are routinely praised, rather than criticized, for sending their children to public schools. Popular support for public education, including public colleges and universities, remains strong. It is unclear why the discussion about public spending on health insurance – and in particular, the substitution of public for private coverage – is so different from discussions of public spending and crowd-out in these other contexts.

Only two studies, to our knowledge, have analyzed the association between expansions of public insurance coverage and the consumption of affected households. Gruber and Yelowitz (1999) document a significant increase in the total consumption of targeted households associated with the Medicaid expansions of the late 1980s and early 1990s. They report that spending on non-durable goods increases by $538 in real 1987 dollars (which would be about $923 in the real 2002 dollars used in our analysis), or about 4 percent of average nondurable spending. This result has been largely overlooked in the literature on crowd-out. More recently, Schaefer, Grogan and Pollak (2009) analyze the impact of switching from private to public health insurance on out-of-pocket spending on medical care and health insurance using data from

the 2001 and 2004 SIPP panels and find that switchers "save" about $2,500 per year, reinforcing the idea that eligibility expansions represent a substantial windfall for targeted households that can increase consumption of other goods.[4]

3. Conceptual framework

We start with a simple diagram of the consumer's budget constraint to represent basic ideas about how the availability of public health insurance affects both medical and non-medical consumption. Figure 1 depicts the budget constraint of a household with pre-tax income M that allocates this income to two different goods: health insurance H and all other goods X. Because most insurance is purchased using pre-tax dollars, the slope of the budget line is 1/(1-t) rather than one. Assume that H_0 is the minimum amount of health insurance that can be purchased, so that the budget line is missing a short segment corresponding to $H<H_0$. In this framework, the SCHIP (or other public insurance) is represented by the single point (H_{pub}, M*{1-t}). This point strictly dominates (0, M*{1-t}) [Note that we are assuming there are no costs associated with signing up – although this is not consistent with the fact that many people remain uninsured when they are eligible! But in terms of the behavioral implications derived below, they don't matter – they are, in effect, the same as the uninsured who take up.] In other words, anyone previously uninsured would be better off signing up for SCHIP because it gives them H_{pub} worth of health insurance while not affecting their consumption of other goods. Individuals who are privately insured to begin with – represented by the point (H_{pvt}, M{1-t}-H_{pvt}) – may or may not be better off with (H_{pub}, M*{1-t}), depending on their preferences.

[4] The empirical analysis in Schaefer, Grogan and Pollak (2009) focuses only on switchers, rather than on the average effect of eligibility expansions in the population as most of the crowd-out literature has done. Since they also document that there is adverse selection into public insurance (those with the most to gain from switching do so), their estimate of $2,500 represents an upper bound on the average "savings" associated with eligibility expansions. Schaefer, Grogan and Pollak (2009) use nominal dollars in their analysis; since their data span the period 2001 to 2005, converting their estimate to real 2002 dollars would probably reduce it somewhat.

The figure makes it clear that there are three groups of people whose behavior will be affected differently by becoming eligible for public insurance:

(1) The previously uninsured, all of whom should take up coverage and move from consumption at point A to consumption at point SCHIP.

(2) Those who switch from private to public coverage, with preferences indicated by the blue indifference curve labeled u_1, will move from consumption point B to consumption point SCHIP)

(3) Those who retain their private coverage, with preferences indicated by the red indifference curve labeled u_2, will not alter their consumption in response to the introduction of SCHIP and will remain at consumption point B.

Group (2) – the "switchers" or "crowd-out" group – are the ones whose non-medical consumption should increase by H_{pvt}, the amount they were previously spending on health insurance (ignoring here differences in cost-sharing). The overall effect of eligibility expansions on consumption will be an average across the effects for these three groups. Buchmueller and LoSasso (2004) estimate a take-up rate of about 9 percent associated with SCHIP, and a crowd-out rate of 50 percent.

There are a number of potential effects on spending that are not captured by this simplified figure. For example, for families either previously without insurance or with a private policy that exposed them to some risk of high out-of-pocket spending, the incentive to save is reduced in response to the provision of public health insurance (see Gruber and Yelowitz, 1999). In other words, SCHIP reduces the financial risk that families face from a bad health shock, and they may engage in less precautionary savings as a result. Another effect might be that families

change their out of pocket spending on health care, perhaps because more things are covered, or co-payment levels are lower under SCHIP insurance than their old insurance plan.

To summarize, becoming eligible for public coverage has three effects, not all of which affect all newly eligible households:

(1) Reduces out-of-pocket medical spending (for almost all households – except for a very few that drop private insurance but do not take up public until their out of pocket spending exceeds some threshold.)

(2) Reduces household premium payments (for households that drop private insurance.)

(3) Reduces precautionary savings motive (households that were previously uninsured; potentially households that previously had bare bones private insurance plans.)

We will not be able to empirically separate these effects in the data we use in this paper.

4. Empirical method

Our empirical analysis is modeled on the crowd-out literature, which uses an instrumental variables (IV) approach to estimate the impact of eligibility expansions on insurance coverage; we use a similar IV approach to estimate the impact of eligibility expansions on household consumption, overall and in different categories. Data for the project come from two primary sources: the Consumer Expenditure Survey (CE) Interview Component public use files for 1996 through 2002 and the Survey of Income and Program Participation (SIPP) 1996 and 2001 panels.

The Consumer Expenditure Survey provides detailed data on the quarterly spending patterns of a nationally-representative sample of households. We use data from the Interview Component of the CE for 1996 through 2002; the CE sample includes between 4,000 and 8,000 households in each quarter. We restrict our sample to households with children 18 and younger (i.e. the age group targeted by the SCHIP expansions); the resulting sample includes 50,488

quarterly observations on 18,154 unique households. Our key dependent variables are total consumption and consumption in the following categories: housing, transportation, food at home, food in restaurants, utilities, furniture/appliances, clothing, entertainment, medical care, education, home maintenance, personal care, and a residual "miscellaneous" category. Our methods for imputing consumption flows for durable goods (housing and vehicles) from the CE expenditure data are described in Appendix A. The CE also includes information on income, household composition, and the demographic characteristics of the household reference person. Dollar amounts (both consumption and income) are inflated to real 2002 dollars using the Consumer Price Index for all urban consumers (CPI-U) from the Bureau of Labor Statistics.

Table 1 presents descriptive statistics from the CE on consumption and other household characteristics. Because some of our analyses will be restricted to households in which the reference person has a high school education or less, we present statistics on the full sample and also on this "low-skill" sample, which is about half the size of the full sample. Real quarterly consumption is about $12,000 for the full sample and $9,000 for the low-skill sample – slightly more than real after-tax quarterly income. Basic needs – housing, food, and transportation – take up nearly 60 percent of the average household's budget. Health insurance and medical care account for just under $500 on average, or about four percent of the budget. A supplemental analysis of CE data (not reported in this table) shows that households with private insurance spend much more on health insurance and medical care than those with public insurance; for households with incomes around 200 percent of the Federal poverty level (approximately the target group for SCHIP expansions), privately insured households spend an average of $490 each quarter, compared with only $57 for households with public insurance. Thus, a back-of-the-envelope estimate of how much a privately insured household might save by switching to public

coverage is about $430 per quarter, without any additional assumptions about how wages might increase to offset foregone benefits.

In terms of other characteristics, the average household has just over two adults and just under two children. Most households are headed by a married couple, and the majority has two or more earners.

Our key independent variable is eligibility for public health insurance. We use published information on public insurance eligibility rules in each state, combined with data on income and family structure in CE, to calculate the fraction of family members in each CE household who are eligible for Medicaid or SCHIP.[5] In 1996, 35 percent of our sample households included at least someone who was eligible; by 2002, this had increased to 48 percent. In households with at least one eligible member, on average about three-quarters of household members are eligible. The mean of the "fraction eligible" variable increases from 0.253 to 0.340 between 1996 and 2002 in the full sample, and from 0.318 to 0.439 in the low-skill sample.

This eligibility variable is endogenous in the sense that many of the same factors – both observable and unobservable – that drive eligibility also determine other outcomes such as private health insurance coverage or spending on other goods described above. Therefore, we instrument for eligibility (as is common in the literature) using a variable constructed using data from the SIPP. Following Gruber and Simon (2008), we will use data from the 1996 and 2001 panels of the SIPP to construct the "simulated eligibility" instrument. Table 2 presents mean values of the endogenous variable "percent eligible" and the instrumental variable "simulated eligibility" for the full sample and the low-skill sample over time. As expected, both "percent

[5] Eligibility information is from bulletins published by the National Governors' Association (1996, 1997, 1998, 2000, 2001, 2002, 2003, and 2005) and from publications by Broaddus et al. (2002), Busch and Duchovny (2005), CLSP/CBPP (2000), Guyer (2002), Guyer and Mann (1999), and Ross and Cox (2003, 2004, 2005).

eligible" and "simulated eligibility" increase over time, and "percent eligible" is much higher in the low-skill sample than in the full-sample.[6]

We estimate the impact of public insurance expansions on consumption using the same method that has been used to estimate crowd-out. Specifically, we estimate the following equation:

$$Spending_{fjt} = \alpha + \beta ELIG_{fjt} + \varphi X_{fjt} + \nu_j + \rho_t + \varepsilon_{fjt}$$

where $ELIG_{fjt}$ is the fraction of individuals in family f who are eligible for public health insurance coverage (Medicaid or SCHIP) in state j in month t, X_{fjt} is a vector of characteristics including family composition, employment and educational characteristics of adults in the family, and demographic characteristics.[7] The regression also includes a vector of state dummies ν_j and a vector of month dummies ρ_t. The dependent variable $Spending_{fjt}$ may be either the family's total spending or spending on a particular good such as housing or food. This model is based on the one in Gruber and Simon (2008); the equation above is the same as their equation (1) except that our outcome variable is spending in contrast to theirs which is private health insurance coverage. We report the results of the naïve model estimated using ordinary least squares and also several different specifications of the model estimated using IV as described above. All estimates are weighted using the sampling weight FINLWT21 on the CE public use

[6] In theory, the mean values of the two variables should match each other exactly. In practice the CE estimate ("percent eligible") is consistently higher than the SIPP estimate ("simulated eligibility"). We believe this is because the CE measures of income in these years are low relative to estimates from the Current Population Survey (Bavier, forthcoming), so that the CE sample appears more disadvantaged and therefore has apparently higher eligibility for public coverage.

[7] Our unit of analysis is the family rather than the individual for two reasons. First, Gruber and Simon (2008) report that what they call "family eligibility" – the share of family members who are eligible for public coverage – shows a stronger effect of crowd-out than does individual eligibility. Second, spending data are available at the family level only, since major expenses like housing, utilities, and food are almost impossible to assign to individuals within a family.

file. The coefficient β on eligibility from the IV models yields an unbiased estimate of the impact of eligibility on spending among the targeted households.

5. Results

First stage

We begin with the "first stage" of the IV estimation; that is, the results from a regression of percent eligible (the endogenous variable) on simulated eligibility (the IV) and all of the exogenous variables. Table 3 reports the results of this regression for the full sample of all households with children and for the low-skill sample. In both cases, the instrument strongly predicts eligibility for public insurance; the F-statistic on the instrument is 29.1 in the full sample and 49.6 in the low-skill sample, far exceeding the threshold value of 10 proposed by Stock, Wright and Yogo (2002).

OLS and IV estimates of equation (1)

Next, we estimate equation (1) using both OLS and IV. We report results for the dependent variable measured both in levels and in logs, and we report results for the full sample and for the low-education sample only. For each of these four different sets of regressions, we report OLS results and the results of three different IV specifications. The OLS specification and the first IV specification includes state dummies and year dummies in addition to the full vector of exogenous variables. The second IV specification augments the regression with additional variables that vary over time at the state level: the unemployment rate, the average family premium for employer-sponsored health insurance, the average employee's share of that premium, and the fraction of private-sector workers in the state who are offered employer-sponsored health insurance.

Table 4 presents the results for the full sample with the dependent variable measured in levels. As expected, the naïve OLS estimate of the coefficient on "percent eligible" is significant and negative; households that have more members eligible for public insurance have lower consumption, holding other factors constant. The IV estimates with state and year dummies, whether or not they are augmented with additional state/year-level controls, suggest a large positive effect of eligibility on consumption: total consumption increases by about $2,500 to $3,800, or around 25 percent of its baseline value. When scaled by the 0.12 increase in mean eligibility rates, this implies about a $450 increase in quarterly consumption. The standard errors on the estimate are very large, however, so that it is not significantly different from zero.

Looking at the results for different components of consumption, as expected the IV estimates of how eligibility affects spending on health insurance and medical care are consistently negative (although imprecisely measured for both of the IV specifications). The implied total reduction in health spending going from zero percent eligibility to 100 percent eligibility is about $300 to $400.

Other categories of spending are similarly imprecisely measured, but generally show positive coefficients. Interestingly, positive and statistically significant effects are found for the residual "miscellaneous" category, and for transportation spending. The latter is consistent with other recent work on consumption responses of low-income families to income shocks that finds increases in spending on durable goods (Barrow and McGrannahan 2000, Parker 1999, Souleles 1999). In particular, Adams et al. (2009) and Aaronson et al. (2009) find evidence that much of the increase in spending on durables is for transportation.

Estimating the same models with the dependent variable measured as the natural log of consumption yields results that are qualitatively similar. The naïve OLS estimates are still

significant and negative, while the IV1 and IV2 specifications generally are positive (except for medical spending, which is negative as hypothesized) and insignificantly different from zero (Table 5).

Results limited to the low-skill sample yield IV estimates that are small and imprecise whether the dependent variable is in levels or logs (Tables 6 and 7).

Robustness checks.

As a reality check on our estimates of consumption changes for different goods, we consider how we might have expected consumption of goods other than health insurance and medical care to increase in response to a $500 windfall. In order to do this, we use CE data to estimate the marginal propensity to consume (MPC) for all goods excluding health insurance and medical care as described in Appendix B; the idea is that we are simulating the impact of being relieved of all responsibility for spending on health insurance and medical care. Table 8 reports these adjusted MPCs for non-health goods. We then multiply these MPCs by $500 and report the result in the last column of Table 8.

6. Discussion

In this paper, we find some limited evidence that spending on other goods – especially durable goods and transportation in particular – increases when eligibility for public health insurance expands. Consistent with the economic theory of transfers, we estimate (imprecise) decreases in out-of-pocket spending on medical care and insurance premiums.

Our results suggest that SCHIP expansions improved overall well-being among targeted households. This is clearly a positive effect of the program, and one that potentially offsets some of the inefficiency associated with crowd-out. A complete analysis of the costs and benefits of

the SCHIP expansions, however, requires several additional pieces of information. One of these is the *insurance* value of public coverage expansions; after all, as discussed above, SCHIP transferred not cash but insurance. Recent work by Gross and Notowidigdo (2009) demonstrates that SCHIP expansions reduced bankruptcy rates, implying considerable insurance value in addition to the value of increases in consumption. Finkelstein (2008) finds that much of the welfare gain associated with the enactment of Medicare in 1965 was associated with the reduction in risk facing beneficiaries; the potential for risk-reduction among the elderly may be greater than among low-income families with children, but a full accounting of program benefits should include some estimate of consumption smoothing.

Another interesting question is how SCHIP expansions affected access to medical care and health outcomes among targeted families. Dubay and Kenney (2001) compare access and use for low-income children with Medicaid versus private insurance who are otherwise comparable and find that children with Medicaid are more likely than their privately insured counterparts to have received well-child care in the past year. The two groups are similar on many other access measures, such as having a usual source of care. On the other hand, the quality of providers may be lower for Medicaid recipients. In terms of health outcomes, analysis of the Medicaid expansions suggested that they reduced infant mortality and improved child health (Currie and Gruber 1996a; Currie and Gruber 1996b).[8] The health impacts of SCHIP might be different, particularly given the higher rates of crowd-out associated with SCHIP and the possibility that SCHIP enrollees may have come from higher-quality private plans than Medicaid enrollees.

On the other side of the ledger, understanding the true social cost of SCHIP requires a correct estimate of the marginal cost of raising the public funds used to pay for it. Very little

attention has focused on the question of how SCHIP programs are financed, although this question is likely to be of increasing importance as pressure on state budgets continues and revenue streams for other kinds of health care reforms are tapped.

[8] Levine and Schanzenbach (2009) find that Medicaid expansions also improved students' school performance.

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MCH Update: Early State Trends in Setting Eligibility Levels for Children and Pregnant Women (September 1998)
Income Eligibility for Pregnant Women and Children (January 2000)
Maternal and Child Health (MCH) Update: States Have Expanded Eligibility and Increased Access to Health Care for Pregnant Women and Children (February 2001)
MCH Update 2001: Trends in State Health Insurance Coverage of Pregnant Women, Children and Parents (May 2002)
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Appendix A: Imputing Consumption of Durable Goods

We impute consumption of housing and transportation as follows. Housing consumption is imputed following the method of (which Meyer & Sullivan papers? Do Kreuger and Perri do this too?) For the one-third of the sample who are renters, housing consumption is set equal to housing expenditures, which are composed almost entirely of rent. For homeowners, we calculate a quarterly "rental equivalence" amount by multiplying the respondent's assessment of the rental value of his or her home ("If someone were to rent your home today, how much do you think it would rent for monthly, unfurnished and without utilities?") by three. This quarterly rental equivalence estimate is substituted for home ownership spending (mortgage interest plus property taxes plus maintenance, repairs, and homeowners' insurance) in the CE measure of total housing spending to yield a measure of housing consumption that reflects the flow of services homeowners receive each quarter from their homes. To impute transportation spending, we use the method of Krueger and Perri (2006). More specifically, we use households that have positive expenditures for new or used vehicle purchases (about ten percent of the sample in any year) to estimate a linear regression predicting vehicle spending as a function of quadratics in income and total nonvehicle consumption expenditures, weeks worked by household members, expenditures on gasoline, expenditures on public transportation, vehicle maintenance expenditures, the number of cars owned, and a set of household characteristics (including age, education, region of residence, and family composition), plus quarter dummies. We use this regression to predict vehicle "services" for all households (including those that were not observed purchasing a vehicle). Our measure of vehicle consumption is this predicted measure of vehicle service, times the number of vehicles the household owns, divided by 32 (on the assumption that cars

depreciate fully after 8 years). Note that other components of transportation are the same (gas, insurance, public transportation, etc.)

Appendix B: Estimating marginal propensities to consume

We estimate marginal propensities to consume different goods as follows. First, we regress each type of consumption on total consumption and total consumption squared; let b_i and bsq_i denote the coefficients from on total consumption and total consumption squared, respectively, from the regression for good i. (Our results are not particularly sensitive to the omission of the quadratic term or the inclusion of demographic covariates in these regressions.) Next, we calculate the average total consumption C of families with incomes between 100 and 200 percent of the Federal Poverty Level. We use this level of consumption to calculate the MPC for each good as $MPC_i = b_i + 2 \cdot C \cdot bsq_i$. These MPCs are reported below. Next, we "zero out" the marginal spending on health insurance and medical care and adjust upward MPCs for the other goods proportionately (as if the marginal 5.1 cents on the dollar were devoted to those goods instead of to health insurance and medical care). This yields the MPCs reported in Table 4.

	MPCs including health spending
Housing	0.262
Food at home	0.056
Food away	0.043
Transportation	0.191
Health insurance	0.022
Medical care	0.029
Maintenance	0.013
Utilities	0.037
Childcare	0.024
Furniture	0.048
Clothing	0.042
Entertainment	0.035
Alcohol and tobacco	0.008
Personal care	0.007
Education	0.028
Miscellaneous	0.157

Table 1
Spending and household characteristics
CE sample: households with children

	Full sample	Low skill sample
Real quarterly consumption:		
Total	$11,826	$8,807
Housing	$3,028	$2,226
Food at home	$1,316	$1,232
Food away from home	$424	$297
Transportation	$2,103	$1,602
Health insurance	$251	$184
Medical care	$231	$161
Maintenance	$101	$41
Utilities	$815	$725
Childcare	$196	$113
Furniture	$399	$262
Clothing	$498	$377
Entertainment	$663	$431
Alcohol and tobacco	$156	$166
Personal care	$94	$73
Education	$206	$79
Miscellaneous	$1,344	$838
Real quarterly after-tax income	$11,184	$7,798
Household characteristics		
Number of adult males	1.0	1.0
Number of adult females	1.2	1.2
Number of boys	0.8	0.9
Number of girls	0.8	0.9
Number of infants	0.2	0.2
Household head is married	0.718	0.651
Single mother	0.136	0.164
No earner	0.047	0.078
One earner	0.312	0.335
Two or more earners	0.640	0.587
Home is owned	0.661	0.548
Reference person characteristics:		
Age	39.7	39.1
Education = High school or less	0.447	1.000
White	0.768	0.737

Sample size : Quarterly observations	50,488	22,227
Sample size : Unique households	18,154	8,364

Table 2
Average fraction of household members eligible for public insurance, 1996 to 2002
Percent eligible (CE) and simulated eligibility (SIPP)

	Percent eligible: CE	Simulated eligibility: SIPP	Sample n
Full sample (all households with children)			
1996	0.253	0.164	5,357
1997	0.257	0.165	5,589
1998	0.346	0.256	5,838
1999	0.379	0.293	8,416
2000	0.378	0.309	8,579
2001	0.341	0.319	8,195
2002	0.340	0.316	8,514
Low-skill sample			
1996	0.318	0.159	2,598
1997	0.315	0.159	2,533
1998	0.416	0.251	2,492
1999	0.454	0.291	3,763
2000	0.450	0.304	3,712
2001	0.418	0.314	3,576
2002	0.439	0.315	3,553

Table 3
First stage
Dependent variable = percent eligible

	Full sample	Low-skill sample
SIPP Simulated eligibility--unique at state*year	0.517	0.826
	(0.096)**	(0.117)**
CU head is black	0.065	0.059
	(0.008)**	(0.010)**
CU head is non-white, non-black	0.041	0.035
	(0.012)**	(0.016)*
CU head has no HS degree	0.056	0.053
	(0.008)**	(0.008)**
CU head has some college	-0.047	0.000
	(0.007)**	(0.000)
CU head has college +	-0.052	0.000
	(0.008)**	(0.000)
Number of adult males in CU	-0.031	-0.035
	(0.004)**	(0.005)**
Number of adult females in CU	-0.021	-0.022
	(0.004)**	(0.006)**
Number of male children in CU	0.057	0.069
	(0.003)**	(0.005)**
Number of female children in CU	0.058	0.075
	(0.003)**	(0.004)**
Number of infants in CU	0.067	0.095
	(0.005)**	(0.007)**
CU head is married	0.030	0.028
	(0.012)*	(0.015)
female	0.068	0.086
	(0.012)**	(0.015)**
marrfe	-0.053	-0.045
	(0.015)**	(0.019)*
Age of CU head	-0.001	-0.000
	(0.001)	(0.001)
agesq	-0.000	-0.000
	(0.000)	(0.000)
CU has no worker	-0.083	-0.066
	(0.018)**	(0.020)**
CU has 2+ workers	-0.089	-0.130
	(0.006)**	(0.009)**
CU primary earner works in public sector	-0.024	-0.019
	(0.008)**	(0.013)

CU primary earner is self-employed	0.060	0.055
	(0.011)**	(0.015)**
No workers in CU or sector unknown	0.290	0.213
	(0.012)**	(0.015)**
popsize==2	0.014	0.037
	(0.010)	(0.013)**
popsize==3	0.047	0.060
	(0.012)**	(0.016)**
popsize==4	0.109	0.099
	(0.013)**	(0.019)**
popsize==5	0.028	0.055
	(0.018)	(0.019)**
CU own house w/o mortgage	0.054	0.080
	(0.008)**	(0.010)**
CU rents	0.107	0.106
	(0.006)**	(0.008)**
CU lives in a house rent free	0.149	0.135
	(0.021)**	(0.022)**
CU lives in a dorm	0.320	0.395
	(0.082)**	(0.036)**
Constant	-0.022	-0.116
	(0.040)	(0.058)*
Observations	50,488	22,227
R-squared	0.22	0.29

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

Table 4
Regression results: Full sample, dependent variable in levels

	1996 mean	OLS		IV1		IV2	
		Beta	SE	Beta	SE	Beta	SE
Total consumption	11,142	-3,429	149	2,542	2,403	3,742	2,477
Housing	2,656	-354	43	59	828	-84	788
Food at home	1,321	-65	11	-88	207	-8	227
Food away	409	-121	12	189	190	283	195
Transportation	1,967	-567	32	888	515	1,225	546
Health insurance	226	-51	9	-169	155	-200	162
Medical care	229	-82	11	-260	151	-155	166
Maintenance	85	-32	6	184	152	189	151
Utilities	806	-86	8	49	122	179	132
Childcare	190	-113	12	228	229	142	239
Furniture	367	-155	18	209	301	160	289
Clothing	527	-131	13	11	313	26	307
Entertainment	657	-221	27	-215	357	-60	388
Alcohol and tobacco	142	-45	5	-114	103	-54	110
Personal care	104	-19	2	-4	36	-17	39
Education	184	-26	17	276	347	255	347
Miscellaneous	1,272	-1,359	35	1,300	638	1,862	772
State and year dummies?		Y		Y		Y	
Additional state-year controls?		N		N		Y	
Sample n	50,488	50,488		50,488		50,488	

Table 5
Regression results: Full sample, dependent variable in logs

	1996 mean	OLS		IV1		IV2	
		Beta	SE	Beta	SE	Beta	SE
Total consumption	9.1	-0.341	0.012	-0.007	0.145	0.005	0.144
Housing	7.6	-0.192	0.017	-0.447	0.257	-0.567	0.275
Food at home	7.0	-0.079	0.011	0.135	0.156	0.031	0.152
Food away	4.9	-0.733	0.042	0.876	0.650	1.091	0.698
Transportation	7.0	-0.498	0.025	0.295	0.406	0.366	0.444
Health insurance	3.1	-0.749	0.064	-0.227	1.254	-0.675	1.330
Medical care	3.2	-1.086	0.051	-0.454	0.812	0.218	0.830
Maintenance	1.6	-0.642	0.048	0.137	0.815	0.637	0.899
Utilities	6.5	-0.191	0.015	0.061	0.271	0.166	0.278
Childcare	1.5	-0.708	0.052	0.537	0.976	-0.151	1.102
Furniture	3.5	-1.042	0.053	0.632	1.182	0.707	1.094
Clothing	5.4	-0.704	0.041	0.803	0.881	0.940	0.900
Entertainment	5.4	-0.771	0.037	0.035	0.539	0.141	0.557
Alcohol and tobacco	3.0	-0.712	0.052	-0.730	0.914	-0.357	0.947
Personal care	3.6	-0.540	0.038	-0.052	0.687	-0.348	0.746
Education	1.5	-0.398	0.039	0.040	0.699	0.071	0.722
Miscellaneous	5.9	-2.738	0.052	1.776	0.976	2.489	1.154
State and year dummies?		Y		Y		Y	
Additional state-year controls?		N		N		Y	
Sample n	50,488	50,488		50,488		50,488	

Table 6
Regression results: Low-skill sample, dependent variable in levels

	1996 mean	OLS		IV1		IV2	
		Beta	SE	Beta	SE	Beta	SE
Total consumption	8,437	-3,296	168	-291	1,366	-298	1,349
Housing	2,017	-362	46	-688	448	-893	470
Food at home	1,248	-108	20	-19	170	94	175
Food away	283	-131	14	57	112	81	109
Transportation	1,474	-632	40	214	351	149	331
Health insurance	168	-85	11	-318	103	-412	105
Medical care	159	-90	11	-142	83	-124	89
Maintenance	31	-28	4	-31	52	-39	51
Utilities	734	-129	12	-55	100	-35	97
Childcare	110	-75	11	-22	112	-74	119
Furniture	245	-131	22	162	188	14	187
Clothing	384	-135	14	215	140	206	135
Entertainment	474	-250	23	-100	243	-34	271
Alcohol and tobacco	154	-59	8	-96	95	0	98
Personal care	79	-22	3	5	26	-1	25
Education	79	-33	9	-19	126	-80	132
Miscellaneous	796	-1,026	34	545	393	849	396
State and year dummies?		Y		Y		Y	
Additional state-year controls?		N		N		Y	
Sample n	22,227	22,227		22,227		22,227	

Table 7
Regression results: Low-skill sample, dependent variable in logs

	1996 mean	OLS		IV1		IV2	
		Beta	SE	Beta	SE	Beta	SE
Total consumption	8.9	-0.399	0.018	-0.094	0.126	-0.143	0.131
Housing	7.4	-0.239	0.024	-0.655	0.279	-0.834	0.304
Food at home	7.0	-0.133	0.020	0.234	0.174	0.171	0.178
Food away	4.3	-0.915	0.071	0.715	0.703	0.765	0.737
Transportation	6.5	-0.700	0.040	0.111	0.366	0.185	0.414
Health insurance	2.5	-1.017	0.091	-1.724	0.898	-2.594	0.955
Medical care	2.5	-1.221	0.074	-1.490	0.696	-1.400	0.752
Maintenance	1.0	-0.575	0.060	-0.247	0.612	-0.090	0.657
Utilities	6.4	-0.274	0.025	0.147	0.210	0.157	0.213
Childcare	1.0	-0.578	0.073	0.080	0.668	-0.336	0.729
Furniture	2.8	-1.110	0.068	0.034	0.910	-0.395	0.765
Clothing	5.0	-0.773	0.052	0.877	0.711	0.816	0.726
Entertainment	4.8	-0.926	0.062	0.018	0.649	0.057	0.687
Alcohol and tobacco	2.9	-0.794	0.080	-1.179	0.829	-0.486	0.879
Personal care	3.1	-0.607	0.055	-0.499	0.666	-0.810	0.644
Education	1.0	-0.406	0.051	-0.523	0.486	-0.922	0.479
Miscellaneous	5.3	-2.779	0.071	0.737	0.759	1.190	0.808
State and year dummies?		Y		Y		Y	
Additional state-year controls?		N		N		Y	
Sample n	22,227	22,227		22,227		22,227	

Table 8
Marginal propensities to consume and
simulated impact of $500 “windfall”

	Marginal propensity to consume: no health spending	Simulated effect of $500 windfall
Housing	0.276	$138
Food at home	0.059	$29
Food away	0.045	$22
Transportation	0.201	$100
Health insurance	-	-
Medical care	-	-
Maintenance	0.014	$7
Utilities	0.039	$19
Childcare	0.025	$12
Furniture	0.050	$25
Clothing	0.045	$22
Entertainment	0.037	$18
Alcohol and tobacco	0.009	$4
Personal care	0.007	$4
Education	0.030	$15
Miscellaneous	0.165	$83

Figure 1