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# Refundable Tax Credits for Health Insurance

*NOTE: This article summarizes David W. Emmons, Eva Madly, and Stephen A. Woodbury's "Refundable Tax Credits for Health Insurance: The Sensitivity of Simulated Impacts to Assumed Behavior," Upjohn Institute Working Paper 05-119, 2005. See http://www.upjohninstitute.org/publications/wp/05-119.pdf.*

Dissatisfaction with the level and growth of the share of the U.S. population without health insurance has spurred interest in alternatives to the existing system of financing health care, which is dominated by employer-provided health insurance among the nonpoor and nonelderly. One approach to reform would be to adopt a refundable tax credit for health insurance under the federal personal income tax. Such a policy would grant a tax credit up to a prespecified maximum—for example, $1,000 for an individual or $2,000 for a family—on a tax return where the filer purchased a private, nonemployer health insurance policy. For filers whose tax bill was less than the amount paid for insurance, the difference between the tax bill and the credit would be paid to the filer—hence, the refundable nature of the tax credit.

**Clearly, these wide simulated ranges highlight the uncertainty inherent in modeling the effects of health insurance tax credits.**

The refundable tax credit is attractive for at least two reasons. First, it would make the same tax-favored treatment of health insurance available to all individuals, regardless of whether they are employed and regardless of whether their employer provides a health insurance plan. As a result, it should increase the number of insured individuals and decrease uninsurance. Second, a tax credit would generate growth in the market for private nonemployer health insurance and increase the population of health care consumers that have an interest in the characteristics and cost of their coverage. These informed, cost-conscious consumers could put a brake on increasing health care costs.

The extent to which a tax credit for health insurance would reduce the number of uninsured individuals has been controversial. Pauly, Song, and Herring (2001) and others have simulated a variety of different tax credit policies and have found that a "reasonably generous" credit could reduce the number of uninsured individuals on the order of 50 percent. However, simulations by Gruber (2000a,b) suggest that a health insurance tax credit might reduce the number of uninsured by only about 10 percent.

Here, we summarize a recent study replicating and extending Gruber's simulations (Emmons, Madly, and Woodbury 2005). Our goal is to illuminate Gruber's modeling of health insurance coverage under a tax credit and to examine the sensitivity of the results to changes in the model's key parameters; that is, we want to understand what makes the simulation model tick. The findings from this exercise are most relevant to Gruber's widely discussed findings and to the particular tax credit analyzed. The simulations should not be interpreted as being relevant to proposals that, for example, would cover different populations, would apply tax credits of a different amount, or would eliminate the exclusion of employer contributions for employees' health insurance premiums from employees' taxable income.

### Outline of the Simulation Model

The simulation model we use is essentially a set of rules for determining whether a given individual (or family) would take up a federal refundable tax credit of $1,000 (for a single individual) or $2,000 (for a family) for privately purchased health insurance. We follow Gruber in identifying four groups, each facing different circumstances with respect to health insurance:

1) those currently covered by employer-provided group health insurance,
2) those covered by private nonemployer insurance,
3) those covered by Medicaid,
4) those currently uninsured.

For each group, we specify an equation for the *tax credit take-up rate*—the probability of a person accepting the tax credit. We also vary each take-up rate equation so as to give a lower-bound and an upper-bound take-up rate for each group.

For individuals currently covered by employer-provided group health insurance, we assume a lower-bound elasticity of take-up with respect to the subsidy provided by the tax credit of 0.625 (relatively unresponsive behavior) and an upper-bound elasticity of infinity (that is, a worker with employer-provided health insurance accepts the credit whenever he or she would incur lower expenses by doing so). For those currently covered by private nonemployer health insurance, the lower-bound assumption is that 50 percent would take up the credit, and the upper-bound assumption is that 90 percent would take up the credit.

For those currently covered by Medicaid, we assume an elasticity of take-up with respect to the credit subsidy of 0.2. We then obtain lower-bound estimates of the take-up rate by imputing (or assigning) health insurance costs and expenditures to an entire family, and upper-bound estimates by imputing costs and expenditures to each individual separately. For currently uninsured families and individuals, we assume the probability of taking up the credit depends on income and the size of the subsidy, with an elasticity of take-up with respect to the subsidy of 0.625. Lower- and upper-bound take-up rates again come from imputing health insurance costs and expenditures to an entire family and to each individual separately.

**Table 1 Results of Simulation: Group Take-Up Rates, Number of Individuals Accepting Tax Credit, and Total Net Government Cost of Tax Credit**

| | Take-up rate (%) | | Number of individuals accepting (millions) | | Net government cost ($ billions) | |
|---|---|---|---|---|---|---|
| Group | (1) lower bound | (2) upper bound | (3) lower bound | (4) upper bound | (5) lower bound | (6) upper bound |
| 1) Covered by employer-provided group insurance[a] | | | | | | |
| a. Hedonic imputation of employer contribution | 3.3 | 21.6 | 4.9 | 32.4 | 1.9 | 9.8 |
| b. BLS imputation of employer contribution | 7.4 | 35.4 | 11.1 | 53.2 | 5.5 | 22.0 |
| 2) Covered by private nonemployer insurance[b] | 50.0 | 90.0 | 10.4 | 18.6 | 9.5 | 17.1 |
| 3) Covered by Medicaid[c] | 3.3 | 6.7 | 0.6 | 1.3 | −2.2 | −4.9 |
| 4) Uninsured[c] | 17.5 | 28.3 | 7.7 | 12.5 | 7.4 | 9.7 |
| Total | — | — | 23.6–29.8 | 64.8–85.6 | 16.6–85.6 | 31.7–43.9 |

[a] For individuals covered by employer-provided group health insurance, lower-bound simulations assume an elasticity of take-up with respect to the tax subsidy of 0.625; upper-bound simulations are based on the assumption that all workers who would reduce their expenses by switching to private insurance do so. The alternative simulations for individuals covered by employer-provided insurance are based on two alternative imputations of the worker's contribution to employer-provided group health insurance.
[b] For individuals covered by private nonemployer insurance, lower-bound simulations are based on the assumption that 50 percent of covered individuals accept the tax credit; upper-bound simulations are based on the assumption that 90 percent accept the tax credit.
[c] For individuals covered by Medicaid and for uninsured individuals, lower-bound simulations are based on the assumption that decisions to accept the tax credit are made for entire families; upper-bound simulations are based on the assumption that decisions to accept the tax credit are made individually.
SOURCE: Authors' calculations.

The simulations are based on the March 1999 annual demographic file of the Current Population Survey (CPS), which has data on 132,324 individuals under age 65. We supplement the CPS with the 1999 Survey of Employer-Sponsored Health Benefits, conducted by the Kaiser Family Foundation and the Health Research and Education Trust because the March CPS does not include data on the health insurance premiums paid by employers, or on employees' contributions for employer-provided insurance.

### What the Simulations Suggest

Table 1 displays the main results of the simulation model outlined above—take-up rates (columns 1 and 2), the number of individuals accepting the tax credit (columns 3 and 4), and the government's net cost of a refundable tax credit (columns 5 and 6). Except for those already covered by private insurance, the figures reflect the number of individuals who switch from their current health insurance status to private nonemployer insurance.

For individuals currently covered by employer-provided group health insurance, the simulations yield a broad range of take-up rates—from 3.3 to 35.4 percent, depending on the underlying assumptions. Simulated ranges for the number of individuals who would switch from employer-provided to private insurance (5–53 million) and for the government's tax expenditures on this group ($1.9–$22 billion) are correspondingly broad. The lower-bound estimate of 3.3 percent is very close to Gruber's estimate of 3.2 percent, suggesting we have succeeded in replicating Gruber's simulations.

For individuals covered by private nonemployer insurance, the take-up rate is assumed to be 50 percent (the lower-bound) or 90 percent (the upper-bound). The implication is that between 10.4 and 18.6 million privately insured individuals would accept the tax credit, and that government expenditures on tax credits to these individuals would range from $9.5 to $17 billion (row 3 of Table 1).

For individuals covered by Medicaid, the simulation model gives a take-up rate of between 3.3 and 6.7 percent, which implies that between 0.6 and 1.3 million current Medicaid recipients would switch to private insurance (row 4 of Table 1). Net government costs for those initially covered by Medicaid actually fall by $2.2–$4.9 billion because it is less expensive to subsidize private nonemployer insurance for these individuals than to provide them with Medicaid.

For the uninsured, the simulations yield a lower-bound take-up rate of 17.5 percent and an upper-bound take-up rate of 28.3 percent. It follows that the tax credit would reduce the number of uninsured by 7.7–12.5 million—from about 44 million (or 18.4 percent of the nonelderly U.S. population) to between 31.5 and 36.3 million (or between 13.2 and 15.2 percent). Gruber's take-up rate (and the corresponding reduction in the uninsured population) is somewhat lower than our lower-bound estimate, but we come close to replicating his findings.

The simulations suggest that tax credit expenditures on those who were previously uninsured would be between $7.4 and $9.7 billion—or between $776 and $961 per newly insured person. However, the net government cost of the tax credit ranges from about $16.6 to nearly $44 billion because the credit can be used by groups other than the previously uninsured. If the low end of the range ($16.6 billion) pertains, then the average cost to insure a previously uninsured person under the tax credit would be just over $2,100. However, if the high end ($43.9 billion) pertains, then the average cost per previously uninsured person would be about $3,500.

**Discussion**

What do we learn from these simulations? Our replications and extensions of Gruber's (2000a,b) simulations suggest that a refundable tax credit of $1,000 for a single individual or $2,000 for a family for private health insurance would reduce the number of uninsured individuals by between 17.5 and 28 percent and require new government expenditures of between $16.6 and $44 billion, of which about $7.4–$9.7 billion would be for coverage of previously uninsured individuals.

Clearly, these wide simulated ranges highlight the uncertainty inherent in modeling the effects of health insurance tax credits. Pauly, Song, and Herring (2001) point to model specification and assumptions about the premiums faced by the uninsured as the main sources of uncertainty. These add up to uncertainty about individual and family take-up rates, and, as they write, "this uncertainty ... should be front and center in the evaluation of tax credit schemes since we as analysts have minimal experience with large subsidies directed at low-income individuals." In addition, some tax credit proposals could lead to broader changes in health insurance markets, such as greater price competition among insurers. This is yet another source of uncertainty in modeling tax credit proposals.

The next question is whether direct empirical evidence could reduce uncertainty about tax credit take-up rates. Remler, Rachlin, and Glied (2001) and Currie (2004) have reviewed evidence on the take-up of a wide variety of social programs and show that take-up rates vary greatly from program to program. Their reviews suggest that little basis exists for choosing a most likely point estimate from the range of simulated take-up rates shown in Table 1—the lower-bound estimates in column 1 of Table 1 may well be too low, and the upper-bound estimates in column 2 may be optimistically high, but little more can be said.

Obtaining convincing empirical evidence on take-up of a health insurance tax credit will not be cheap—it may require a demonstration project or social experiment. But progress on the issue of tax credits for health insurance will require improved evidence on the likely take-up rate of a credit, and the time and expense of such a demonstration may well be justified if it leads to convincing estimates of how tax credits would expand coverage and what they would cost.

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