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TAX CREDITS, THE DISTRIBUTION OF SUBSIDIZED HEALTH INSURANCE PREMIUMS, AND THE UNINSURED

Mark Pauly
David Song
Bradley Herring

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ABSTRACT

This paper investigates the impact of a $1000 refundable tax credit for self-only coverage on net premiums and insurance purchases for a representative sample of potential buyers in the individual insurance market. Two methods are used to estimate the distribution of premiums: predicted premiums based on a sample of actual purchasers, and premium quotations drawn from an e-insurance web site. In most of the simulations, the net premiums for half or more of the prospective buyers are reduced to zero or low levels. The number of uninsured is reduced by between 21 percent and 85 percent depending on the size of the deductible in the benchmark plan. However, the results are sensitive to assumptions about insurer underwriting practices.

Mark V. Pauly
Chair, Department of Health Care Systems
University of Pennsylvania
208 Colonial Penn Center
3641 Locust Walk
Philadelphia, PA 19104
and NBER
pauly@wharton.upenn.edu

Bradley Herring
Institution for Social and Policy Studies
89 Trumbull Court
Yale University
New Haven, CT 06520-8207

David Song
Department of Health Care Systems
University of Pennsylvania
204 Colonial Penn Center
3641 Locust Walk
Philadelphia, PA 19104

Tax Credits, the Distribution of Subsidized Health Insurance Premiums, and the Uninsured*

Mark Pauly, David Song, and Bradley Herring,

University of Pennsylvania and Yale University

Introduction

One way to reduce the number of uninsured Americans is to help them pay private health insurance premiums. Proposals for refundable tax credits, such as those from the Bush administration or from members of Congress, would offer many people credits or vouchers which could cover part or all of premiums. For most of the currently uninsured, the most convenient and most likely place to obtain insurance is the individual market, and sometimes proposed credits would be limited to use in such markets.

A key to understanding the possible impact of credits of different amounts on insurance purchases is estimation of the extent to which they reduce "net" premiums—the market premium minus the credit—to moderate levels. Previous work has indicated that reasonably generous credits, on the order of about 50 percent of an average premium, might reduce the number of uninsured by half or more.[1] However, the measures of premiums in those studies were largely based on estimates of individual insurance premiums generated by applying industry-average administrative loading factors to expected or average expenses, and the credit plans were hypothetical or sample plans. An alternative strategy is to develop direct measures or estimates of premiums that would

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be or have been charged in real world markets, apply the actual credits that would be offered under a specific legislative proposal (or variant of it), and calculate the net premium. One can then estimate the demand for insurance at that net premium. For people for whom the net premium is zero (credit exceeds market premium), one would expect high, virtually "universal" demand; for people whose net premiums remain positive, estimates of the effect of subsidized premium levels on the demand for insurance can generate estimates of the number of people who would be willing to buy at least some insurance coverage at that price.

What is the Price of Individual Insurance?

Only about 6 percent of Americans obtain private health insurance in individual insurance markets. There are two commonly-remarked characteristics of such insurance. First, industry-level data suggest that premiums are high relative to money benefits received. Since the primary benefit from insurance is the payment for medical services, these data suggest that nongroup insurance is (relative to group insurance) generally expensive for what one gets. It is widely believed that this high "price" for benefits partially explains why only about a quarter of those who are not already covered by group or public insurance choose to buy nongroup coverage. Second, it is commonly believed that persons with higher expected expenses pay higher premiums in the individual market. Pauly and Herring showed that this is only partially true: premiums paid are higher for higher risk people, but they increase significantly less than proportionally with premiums; they increase with individual age and the costliness of the

local health care market, but (given age and location) they are not significantly higher for people with chronic conditions or other high risk characteristics.[2] Pauly and Herring attribute some of this behavior to the widespread prevalence of guaranteed renewability provisions in individual insurance policies. They do find, however, that premiums paid for similar policies vary substantially for reasons unrelated to observable risk.

These observations suggest that it would be desirable to relate credits to the premiums people pay or would pay in the individual market, as well as estimating the likelihood of purchase (or the proportion purchasing) based on those net premiums and a model of the demand for insurance. This is the task we perform in this paper. Specifically, we will explore the impact on the net premium for self-only, coverage of flat dollar credits at a level of $1000. The conventional estimate of the nongroup premium for comprehensive self-only coverage is about $2500, so such a credit would reflect an average subsidy of only 40 percent. However, because actual premiums vary considerably across persons, the actual net premium can likewise vary.

There are two populations of interest here. The most obvious group to study is the population of people already purchasing individual coverage; for them, we know what insurance costs, and no estimation is involved. For this population we use evidence from a survey of a representative sample of the US population without group insurance to describe premiums paid and some characteristics of insurance purchased at those premiums. Secondly, the set of people who did *not* buy insurance is also important—precisely because this is the set of people whose insurance purchasing behavior tax

credits are supposed to affect. This population may have sought insurance but have discontinued searching after confronting premiums higher than the premium they would have been willing to pay (their "reservation price"), or they may not have searched at all. We develop several methods to estimate the price (or distribution of prices) they would face.

Our work reported here supplements previous work by ourselves and others.[3] Our earlier work based measures of gross premiums not on actual premium data but rather on estimates of premiums constructed using information on expected benefits and average administrative loading in the nongroup insurance market. However, the actual premiums people could pay or do pay may differ from these estimates because actual non group insurance premiums have a very wide dispersion about the average.[4]

The other approach to estimating individual insurance premiums is to use an average or median of premiums insurers quote. In 2001, this approach yields an estimate of average annual premiums for self-only coverage of about $2400 per year. However, no rational buyer who has obtained price quotes would choose to pay the average or median price. Rather, the buyer would pay the lowest price (or something close to it). In short, the most relevant measure for the analysis of a tax credit is the premium actually paid by those who obtained insurance and the lowest premium the person would have found for those who do not purchase insurance. Either actual or potential transaction prices may differ substantially for the averages or other measures based on premiums posted by insurers.

Our work reported in this paper generates estimates of net premiums paid or payable for a representative sample of those who currently do not obtain employment-based insurance coverage. This sample is obviously more relevant than two self-selected samples recently discussed in the literature. One is the sample of people who chose to purchase insurance on a large website.[5] Those who actually purchased may have been the lucky few who were able to find low premiums; others who visited the site may have seen premiums they regarded as high and therefore decided to remain uninsured. That is, the population of purchasers may differ from those who used the site, and many current non-purchasers would not have visited the site at all. In short, the sample of website transactions, while instructive, cannot be assumed to be representative of potential nongroup insurance purchasers. The other sample is the "selected" sample in a small number of cities or in high risk categories for which only family premiums have been investigated, and for which high premiums have been found.[6] A more recent similar study presented premiums and coverages for a small number of hypothetical buyers (in a small number of cities) who list previous or current medical conditions on their insurance applications.[7] Our sample is also superior to these two studies as a description of the effect of credits on the overall population of potential nongroup purchasers.

Another way in which this work differs from some common policy analyses is the treatment of tax credits in the case of people who face positive net premiums. A typical approach implicitly or explicitly judges the effectiveness of such a program by comparing the resulting net premiums to the person's income, and judges insurance to be less "affordable," and therefore less likely to be purchased, if the net premium remains

relatively high compared to income.[8] However, there is more involved in the purchase of insurance than only "affordability." Specifically, compared to people facing positive but lower premiums, a person would be expected to be more likely (than someone charged a lower premium) to purchase insurance even at a relatively high premium if the person expected substantially larger benefits from the insurance. Since higher premiums sometimes (though not always) reflect higher risk, we might expect that, at least up to a point, higher risk people *would* be likely to buy insurance at moderately high premiums if the insurance provides them with high levels of benefit payments and/or shields them from high levels of out of pocket payment. Consistent with this argument, the data suggest that, even in the relatively low income (but not impoverished) population, the proportion of people obtaining insurance is actually relatively high among middle-aged people.[9] Thus translating net premiums into probabilities of purchase will be an important adjunct to the estimation of the determination of net premiums.

We therefore use several alternative estimates of the net price of individual insurance that a person might face. The most direct measures use actual premiums paid by a random sample of nongroup insurance purchasers. This sample illustrates the actual variation in premiums paid, variation which is related both to pricing/search behavior and to characteristics of insurance. For those who did not buy insurance, we use two approaches to estimate the premium they would have paid. In one, we use data on the characteristics of the uninsured to generate premium quotations from an online website. We specify the level of coverage to be held constant, and we offer alternative simulations of purchasing behavior—selecting either the lowest decile of premiums or the premium at the lowest

quartile. The second approach develops a premium prediction regression from the data on actual purchases, and then uses this regression to predict premiums for the currently uninsured. (All of these approaches may be optimistic, because we do not know the actual rejected premiums (if any) of those who did not purchase.)

It will be of interest to compare the net effect of various tax credits in states with community rating laws and states without such laws. If community rating laws reduce the extent to which premiums vary with risk (their intended purpose), they will reduce the proportion of a population with relatively high and relatively low net premiums. Determining the magnitude of the difference which laws actually make, and the implications of these differences for insurance purchasing, will be of value.

If we generate a pattern of estimated net premiums for the uninsured, how can we determine whether they would be willing to buy coverage at those premiums? Just observing the distribution of net premiums can tell us a great deal. Those who face zero or nominal net premiums would be expected to take up the free or nearly free coverage. But what will the other people who face positive but subsidized premiums do?

The main approach we pursue here is to convert one of the distributions of net premiums into estimates of the distribution of insurance purchases. We assume that people whose credit equals or exceeds the premium for a given insurance policy, for whom the net price is zero, would prefer to obtain that policy rather than remain uninsured. For those with positive net premiums, we use the models developed by Pauly and Herring to estimate the probability or proportion of insurance purchasing.[10]

Net Premiums Among Insurers

We examine a sample of persons purchasing nongroup insurance provided by the 1996-1997 Community Tracking Survey (CTS), a large random household sample selected from a nationally representative set of communities. Within the set of all individuals, 1050 non-elderly adult respondents reported purchasing nongroup insurance on a self-only basis. Of this set, 908 (86 percent) reported the premiums paid. All of these individuals are classified as "insured" in the analysis of the data. The 1996 premium data are "inflated" to 2001 insurance price levels by using an annual premium growth rate of 7%.

If we assume that each of these individuals would be eligible for a $1000 tax credit, the distribution of net premiums is as indicated in Table 1. Approximately 20 percent of these purchasers would pay a zero net premium. At the median net premium, the dollar amount is $809 per year, which is 45 percent of the total premium. About 60 percent of all purchasers would have had their premium halved by a $1000 credit. We also split the sample at the median income and found essentially similar results.

Online Premiums for Non-Elderly Uninsured Adults

There were 6083 non-elderly adults in the CTS sample who indicate that they currently had neither public nor private health insurance. We identified a comprehensive

(indemnity or PPO) medical-surgical plan with annual deductibles less than or equal to $1000, or an HMO with similar or lower deductibles. We then examined the publicly available online premium quotations available from the E-healthinsurance website (www.ehealthinsurance.com) that would be available to the survey respondents, given their age, sex, smoking behavior, and zip code location.

The lowest premium plan that meets these criteria is certainly a possible choice. If its premium were less than or close to the credit, it surely would be preferable to the no-insurance option. However, in may cases the absolute lowest priced plan that meets the deductible specification also has other exclusions; for instance, it may exclude coverage of non-surgical routine outpatient care entirely. Accordingly, we show the net premium at the 10^{th} and 25^{th} percentile of the distribution of premiums.

We were able to match 72 percent (N=4383) of the CTS sample with web premiums. Failure to match usually was due to missing CTS data (e.g., smoking behavior), or to the absence of a web insurance option in the sample person's zip code.

The geographic patterns themselves are of interest. Web premiums were more likely to be missing for people who lived in community rating states. The form of community rating varies across the states that require it, with only New York and New Jersey using pure community rating. Of the nine states with communities in the CTS sample identified as community rating states (New York, New Jersey, Washington, Massachusetts, Kentucky, North Dakota, New Hampshire, Maine and Vermont), there

were no website premiums available in six. In New York, the highest deductible listed was $250. In the remaining community rating states (Washington and New Jersey), median premiums were about three times higher than in other states, presumably reflecting both higher premiums for given coverage and less availability of high deductible options. For example, deleting the community rating states from Table 1 would cut the net premium at the 50th percentile in half.

Results of the analysis on the complete matched data set are shown in Tables 2A and 2B. For the population of potential insurance purchasers, the 10th percentile net premiums for insurance obtained from the web are zero or close to zero for 50 to 75 percent of all such persons. As in Table 1, the top 10 percent of net premiums are quite large, reflecting both the absence of a high deductible option and high overall health insurance premiums in some locations. If we move up the frequency distribution of premiums to the 25th percentile, there is still a sizeable proportion of the uninsured who could get insurance for free, and must pay net premiums that are a small fraction of the total. The net premium at the 50th percentile is an affordable $252.

Estimating Premiums for the Uninsured Based on Transactions Data

The third approach to generating a distribution of net premiums assumes that uninsured persons would have available to them the same premiums as those with similar characteristics who actually purchased insurance. This also assumes that the uninsured would have the same preferences for plan types and the same search behavior as those

who actually purchased. In reality, the uninsured probably would search less, but also might seek less coverage than those who purchased.

To generate distribution of premiums, we first regress the premiums paid by purchasers on purchaser characteristics. Appendix A shows the result of such a regression; the most important predictive variables turn out to be race and community location. Given the distribution of characteristics of the uninsured, we then generate a distribution of predicted or average premiums.

Table 3 shows the distribution of net premiums based on this approach. The distribution (perhaps not surprisingly) is fairly close to the distribution of paid premiums, but with a somewhat larger proportion of the population facing zero net premiums (since more of the uninsured are young)[†].

Simulating Underwriting

The estimates using the web data show the premiums the individuals would see if they searched the relevant part of the website, but the process of obtaining coverage requires more than just agreeing to buy at one of those proposed premiums. (The estimates based on the CTS "purchasing" sample already include any higher premiums based on

[†] We also used standard errors of prediction to construct 95% confidence intervals for expected premiums, conditional on individual characteristics. Since the errors tend to cancel out, we would not expect that the prediction error matters much to the distribution of net premiums. We varied the distribution of predicted premiums through random draws of these intervals or through the application of the intervals' lower and upper bounds. We conclude that the intervals are small because they do not affect the overall interpretation of the original distribution of predicted premiums.

underwriting.) For new purchases of insurance (but not for renewal) the individual must apply for coverage and will be asked questions about health status and use of medical services in the recent past. If the individual provides answers that suggest above-average risk, the insurer may decline to insure or may propose a higher premium. While many high risk individual do obtain individual insurance coverage at premiums that do not differ from the average, some do not.[11]

To simulate the operation of an underwriting process, we assume that uninsured individuals in the CTS survey who report their health on the survey to be "poor" or "fair" (whatever they might tell an insurer), or who report that they were ever denied coverage will be faced with the premium in the 90th percentile of the distribution of premiums for persons with their characteristics. Of the 4352 individual in the sample, 895 (18%) report that they were in poor or fair health, and 202 report that they were ever denied coverage. Because of overlap, the net proportion of the sample thus classified as "high risk" is 21%.

Table 4 modifies Table 2B based on these assumptions. It is still true that more than a quarter of all uninsured would face zero net premiums, but the net premium at the 50th percentile rises a moderate amount to $390.

The proportion who would be classified as high risk by these assumptions is larger than the proportion of applicants insurers would classify in this way.[12] But probably many high risks do not apply for insurance, both because they would not expect to be quoted

premiums they would be willing to pay and because high risk especially characterizes low income uninsured, who would often not pay even average-risk premiums.

Predicting Purchase

We now wish to determine whether uninsured individuals facing a distribution of net premiums described above would be willing to buy coverage. To produce estimates of such take-up rates, we use two simulation techniques described in Pauly and Herring.[13] One technique constructs the distribution of the reservation prices directly and assumes an individual will obtain coverage if the individual's reservation price exceeds the net premium he or she faces. The other technique estimates an individual's probability of obtaining insurance as a function of the net premium; this model is derived from the observed relationship between coverage and net loading in the employment-based setting.

For our first approach, we construct a "synthetic" estimate of a reservation price for insurance for an uninsured individual based upon his or her change in expected expenses for being insured relative to being uninsured. Specifically, one's willingness to pay for insurance is specified as the sum of the expected decrease in out-of-pocket expense, the Arrow-Pratt risk premium paid for the decrease in the variation in out-of-pocket expense, the increase in consumer surplus from consuming more medical care, and the loss in disutility from receiving free care when uninsured. Since the CTS lacks detailed data for medical expenses and health conditions, we first developed a distribution of reservation prices for a sample of individuals in the 1996 Medical Expenditure Panel Survey

(MEPS). After inflating this data to 2001 dollars, we then assigned that distribution of reservation prices to the uninsured CTS sample by randomly selecting a reservation price from a MEPS subsample of individuals with similar age, gender, and self-reported health status.

Table 5 shows distributions of reservation prices of the uninsured for three separate plans which were the most common of those found online. The first is a PPO plan with a $1000 deductible, 20% coinsurance, and a $2000 upper limit on out-of-pocket spending. The second is a similar plan with a $500 deductible and the third has a $250 deductible. The assumptions we make for estimating an individual's reservation price for a particular plan are those which we presented in the mid-range case presented in Pauly and Herring.[14] As seen in the table, the median uninsured individual would be willing to pay $592 for a $1000 deductible PPO plan, $707 for a $500 deductible plan, and $787 for a $250 deductible plan; moreover, these distributions are considerably skewed.

To examine the level of a subsidy required to induce the uninsured to purchase insurance, we show the distribution of the difference between an individual's reservation price and the premium they face. Table 6A shows the distribution of subsidies needed where we assume that the premium faced by an uninsured individual is that at the 10^{th} percentile of premiums quoted in our automated online search. The bottom portion of this table shows the percentile at which the difference between our estimated reservation price and the premium they face falls below $1000. For example, we find that 85% of the uninsured sample requires a subsidy of under $1000 for the purchase of a $1000 deductible PPO

plan, while only 34% of the uninsured would respond to such a subsidy for purchase of a $250 deductible plan. If we assume that all of those for whom the net premium falls below their reservation price were to obtain coverage, the take-up rate of a $1000 credit for a $1000 deductible PPO would be 85%. Table 6B shows the distribution of subsidies needed when we instead assume that individuals are only able to obtain premiums at the 25th percentile of those quoted for their specific age, gender, and location. The subsidies reported here are obviously larger.

Our expected utility model generates reservation prices for insurance for a small minority that fall below the unsubsidized premium (we assume that) they face currently. We therefore present take-up rates of a $1000 credit using this "implied" take-up rate of unsubsidized insurance as our baseline. For instance, 23% of the uninsured currently face 10th percentile premiums lower than their reservation price for a $1000 deductible plan, thus implying an estimated take-up rate of 62%.

Table 7 shows more detail on the take-up rates we estimate for various assumptions about the plans the uninsured face. If instead we assume that the uninsured face the 25th percentile of premiums for a $1000 deductible PPO, we estimate a lower take-up rate of 56%. Assuming the $1000 credit were made available only to a more generous $250 deductible PPO, we estimate a reduction in the uninsured of only 21% when we assume that an individual faces the premium at the 25th percentile of online quotes. If we instead use the individual's predicted premium from the CTS nongroup sample of purchases, we

estimate a take-up rate of 43%. For this final case the distribution of reservation prices we apply is that for the typical nongroup plan seen in the CTS Followback data.

The second column of Table 7 shows the results generated from applying a second estimation technique described in Pauly and Herring.[15] This second technique instead estimates a reduced-form version of the demand for insurance to produce an individual's likelihood of obtaining coverage as a function of the net price they face. Specifically, using the MEPS data for workers and their dependents, we estimated a probit model for the probability of purchasing insurance as function of one's age, gender, income, education, race, region, and the net price one faces. Defining this "net price" in the traditional sense as the administrative loading as a percentage of expected benefits, we constructed values for net loading determined by household marginal tax rates and the administrative loading that coincides with the worker's industry's median firm size. Thus, the coefficients from estimating this model for the probability of being insured as a function of these various controls and the net price of insurance allows us to simulate a new predicted probability of purchasing insurance given that uninsured individual's demographic controls and "new" subsidized net price. Here too, though, the take-up rate for insurance must be specified as the change in predicted probabilities from the unsubsidized nongroup price to a subsidized one. If we consider the 25th percentile of online quotes for a $250 deductible PPO plan and assume nongroup administrative loading equal to 40% percent of premiums, we estimate a 32% take-up rate of a $1000 credit for that insurance. If instead we consider a $1000 deductible PPO plan, the fixed-dollar credit lowers the net loading considerably; here we estimate a take-up rate of 77%.

If we assume that the premium faced by uninsured individual is the one we generate from the average CTS nongroup premium, we estimate a reduction in the uninsured equaling 61%.

Overall, the take-up rates we estimate from our "net loading" approach are somewhat higher than those we estimate from our "reservation price" approach. However, as we argued before, this uncertainty—whether in the form of specifying a model or in the form of assuming what premiums the uninsured face—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.[16]

Discussion

These results yield estimates of the effectiveness of a modest tax credit in reducing the number of a representative sample of uninsured which are consistent with, but somewhat more optimistic than, our earlier conjectures, largely because the premiums we estimate or use in this paper are generally lower than those used earlier. If the 10th percentile website premiums represent genuine offers to sell insurance, the results are even more optimistic. However, while many of the low risk uninsured face low or zero premiums, the minority of people who are high risk will still pay high net premiums. Our simulations indicate that even many of these older or higher risks would be willing to pay higher premiums (because the alternative is to pay large amounts out of pocket or put up with less attractive charity care). The main conclusion, as we have noted before, is that

fixed dollar premiums are less effective than proportional or risk-adjusted premiums at getting a smaller number of higher risks covered, but more effective for a larger number of lower risks. Indeed, without risk-adjusted credits or a high risk pool, it is unlikely that there can be low net premiums for truly high risks who seek coverage for explicitly acknowledged active medical conditions.

Why do our results in this paper differ somewhat from our earlier findings? It is possible that web premiums tend to be lower than actual transactions premiums for people who did not use the web. Alternatively, it may be that the benchmark loading estimates, which are based on aggregate premiums and benefits for a set of large commercial insurers, are overestimates. The Blue plans, which are active in the nongroup market, were left out of some of the measures, as were some smaller commercial insurers, and accident insurance included with health insurance.

However, the key remaining unknown, for our study and all others, is how underwriting affects the premiums people actually pay (not what insurers quote). Our previous work indicated that many buyers with a history of prior chronic conditions were able to avoid paying unusually high premiums and were still able to obtain coverage. But the nature of the interplay between sellers trying to charge high premiums to high (and low) risks, and buyers searching for reasonable options, is unknown.

Current nongroup health insurance premiums are not set in expectation of purchases by a large number of formerly uninsured persons armed with tax credits. Such a surge in

demand would cause a profound transformation of this small and sleepy market. What effects might it have on premiums and coverage? We think it likely that it would lead to lower administrative costs and less severe problems of adverse selection than nongroup insurers currently face, both because of sheer volume and because most of these new purchasers would tend to be average risks strongly motivated to seek coverage with little selling effort needed. If these conjectures are right, the final outcome could be even more optimistic than the estimates presented here. However, it is also possible that cautious insurers might respond by raising premiums in the face of what is perceived as a more risky (or at least different) market. Tax credits would put a heavy obligation on nongroup insurers to offer attractive policies at affordable net premiums.

Table 1:
Distribution of Net Premiums for Nongroup Self-only Policies,
Under Fixed $1000 Tax Credit Plan

	Predicted Premium	Net Premium (NP)	NP as a Percentage of Original Premium
Mean	$1989	$1122	36%
10th Percentile	$708	$0	0%
25th Percentile	$1088	$88	8%
50th Percentile	$1809	$809	45%
75th Percentile	$2753	$1753	64%
90th Percentile	$3932	$2932	75%

Representative sample of 821 nongroup policyholders in the CTS Household Survey (1996-97).

Table 2A:
Distribution of Net 10th Percentile Online Premiums for Uninsured Individuals, Under Fixed $1000 Tax Credit Plan

	Online Premium	Net Premium (NP)	NP as a Percentage of Original Premium
Mean	$1326	$508	20%
10th Percentile	$478	$0	0%
25th Percentile	$640	$0	0%
50th Percentile	$984	$0	0%
75th Percentile	$1791	$791	44%
90th Percentile	$2884	$1884	65%

Representative sample of 4383 uninsured individuals in the CTS Household Survey (1996-97). For each individual, the online premium reflects the 10th percentile premium for a menu of individual health insurance plans (whose deductibles are no greater than $1000) in the corresponding locale. Premium quotes were obtained from www.ehealthinsurance.com.

Table 2B:
Distribution of Net 25th Percentile Online Premiums for Uninsured Individuals, Under Fixed $1000 Tax Credit Plan

	Online Premium	Net Premium (NP)	NP as a Percentage of Original Premium
Mean	$1631	$710	27%
10th Percentile	$683	$0	0%
25th Percentile	$873	$0	0%
50th Percentile	$1252	$252	20%
75th Percentile	$1995	$995	50%
90th Percentile	$2952	$1952	66%

Representative sample of uninsured individuals in the CTS Household Survey (1996-97). For each individual, the online premium reflects the 25th percentile premium for a menu of individual health insurance plans (whose deductibles are no greater than $1000) in the corresponding locale. Premium quotes were obtained from www.ehealthinsurance.com.

Table 3:
Distribution of Net Predicted CTS Premiums for Uninsured Individuals, Under Fixed $1000 Tax Credit Plan

	Predicted Premium	Net Premium (NP)	NP as a Percentage of Original Premium
Mean	$1558	$619	31%
10th Percentile	$735	$0	0%
25th Percentile	$1166	$166	14%
50th Percentile	$1519	$519	34%
75th Percentile	$1864	$864	46%
90th Percentile	$2475	$1475	60%

Representative sample of 6083 uninsured individuals in the CTS Household Survey (1996-97).
Premiums are predicted from estimated coefficients in a regression of nongroup policyholder premiums on characteristics. (See Appendix A.)

Table 4:
Distribution of Net Premiums after Underwriting,
Under Fixed $1000 Tax Credit Plan

	Online Premium	Net Premium (NP)	NP as a Percentage of Original Premium
Mean	$1849	$936	31%
10th Percentile	$663	$0	0%
25th Percentile	$831	$0	0%
50th Percentile	$1390	$390	28%
75th Percentile	$2436	$1436	59%
90th Percentile	$3962	$2962	75%

Representative sample of uninsured individuals in the CTS Household Survey (1996-97). For each individual who reported no denial of coverage and good to excellent health, the online premium reflects the 25th percentile premium for a menu of individual health insurance plans in the corresponding locale. For those individuals (approximately 20% of the sample) who reported fair or poor health or denial of coverage, we matched the 90th percentile premium to them. Premium quotes were obtained from www.ehealthinsurance.com.

Table 5:
Distribution of Reservation Prices for Insurance,
Using an Expected Utility Framework

	$1000 Deductible	$500 Deductible	$250 Deductible
Mean	$1106	$1245	$1353
10th Percentile	$176	$240	$290
25th Percentile	$312	$395	$469
50th Percentile	$592	$707	$787
75th Percentile	$1332	$1513	$1647
90th Percentile	$2612	$2900	$3126

Details of these simulations are provided in the text.

Table 6A:
Distribution of Subsidies Required for the Purchase of Insurance
(Assuming premiums obtained are at the 10th percentile)

	$1000 Deductible	$500 Deductible	$250 Deductible
Mean	$534	$1176	$1615
10th Percentile	$0	$0	$0
25th Percentile	$0	$0	$487
50th Percentile	$168	$316	$1464
75th Percentile	$608	$880	$2312
90th Percentile	$1480	$1966	$3524
85th Percentile	$1000	N/A	N/A
78th Percentile	N/A	$1000	N/A
34th Percentile	N/A	N/A	$1000

Details of these simulations are provided in the text.

Table 6B:
Distribution of Subsidies Required for the Purchase of Insurance
(Assuming premiums obtained are at the 25th percentile)

	$1000 Deductible	$500 Deductible	$250 Deductible
Mean	$741	$1580	$1678
10th Percentile	$0	$0	$0
25th Percentile	$0	$156	$638
50th Percentile	$390	$866	$1518
75th Percentile	$951	$1500	$2379
90th Percentile	$2044	$2798	$3583
77th Percentile	$1000	N/A	N/A
57th Percentile	N/A	$1000	N/A
32nd Percentile	N/A	N/A	$1000

Details of the simulations are provided in the text.
Samples differ slightly due to the unavailability of certain plans in a few markets.

Table 7:
Take Up Rates of Private Insurance,
Given a $1000 Refundable Tax Credit

Premium Assumption	Reservation Price Approach	Net Loading Approach
Internet Premiums, 10th Percentile (of $1000 Deductible Plans)	62%	85%
Internet Premiums, 25th Percentile (of $1000 Deductible Plans)	56%	77%
Internet Premiums, 25th Percentile (of $250 Deductible Plans)	21%	32%
Predicted CTS nongroup premiums	43%	61%

Details of the simulations are provided in the text.

Appendix A:
Regression Analysis of the Determinants of Health Insurance Premiums, Population Ages 18-64 with Nongroup Coverage

Variable		Coefficient
Male Age	18-24	-622.3
	25-34	-715.0
	35-44	-474.8
	45-54	38.18
	55-64	404.2*
Female Age	18-24	-645.7
	25-34	-600.3
	35-44	-560.3
	45-54	-187.0
Squared Age		0.619
Smoker		-179.3
White		-149.4
African-American		-921.3**
Hispanic		-422.5
Family Income		0.0042**
Family Education		
	High School Grad	207.4
	Some College	162.4
	College Grad	262.8
	Graduate School	63.25
Metropolitan area		210.3
New England		101.1
Mid-Atlantic		51.66
East S. Central		-62.94
West N. Central		-281.8
West S. Central		-171.7
South Atlantic		-82.00
Mountain		-154.7
Pacific		-252.1
Constant		1550*

N=740, adjusted R-squared=0.19
*Significant at 5%
**Significant at 1% or less

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