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COVERING THE UNINSURED IN THE U.S.

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ABSTRACT

One of the major social policy issues facing the U.S. in the first decade of the 21st century is the large number of Americans lacking health insurance. This article surveys the major economic issues around covering the uninsured. I review the facts on insurance coverage and the nature of the uninsured; focus on explanations for why the U.S. has such a large, and growing, uninsured population; and discuss why we should care if individuals are uninsured. I then focus on policy options to address the problem of the uninsured, beginning with a discussion of the key issues and available evidence, and then turning to estimates from a micro-simulation model of the impact of alternative interventions to increase insurance coverage.

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One of the major social policy issues facing the U.S. in the first decade of the 21st century is the large number of Americans lacking health insurance. While other industrialized nations guarantee universal health care for their citizens, in the U.S. 47 million persons, or 18% of the non-elderly population (the elderly are universally covered under the Medicare program) lack health insurance. As a result, the problem of the uninsured has been front and center in public policy debates and political campaigns for many years. The (failed) centerpiece of the early Clinton presidency was a plan for universal health coverage; 15 years later, each of the major Democratic candidates for President is proposing a plan for universal health coverage.

Of course, health insurance is not the only "merit" good which is not universally consumed by the American public: a larger number of U.S. households do not own their own homes, for example, than the number of households that contain uninsured individuals. While homeownership is viewed as a valid goal for families, there is little demand for universal ownership. With health insurance, however, a number of arguments are used to justify universal coverage: financial and physical externalities to others, inefficiencies in labor markets from limited job-related coverage, myopia among the uninsured, and income redistribution to lower income groups that tend to be uninsured. Regardless of the validity of these arguments, strong advocacy for universal insurance coverage is here to stay.

If public policy makers are to take on the problem of the uninsured, however, they must understand *why* individuals are uninsured, and *what* the government can do about it. Not that the U.S. government hasn't been heavily involved in insurance markets. The U.S. government currently accounts for almost half of all spending on health care in this nation. The regulatory

role of the government is pervasive. And an enormous tax subsidy of over $200 billion per year encourages the provision of health insurance through a particular form, the employer, which may not be optimal. Ex ante, it isn't clear if the right answer for improving health access in the U.S. is more government, less government, or just different government.

Economic insights and past research has an enormous amount to say about this crucial debate. The purpose of this paper is to review the lessons and implications of those insights and research.

I do so in several steps. I begin by reviewing the important facts on the insurance market in the U.S., and the nature of the uninsured. I then focus on explanations for why the U.S. has such a large, and growing, uninsured population, and I highlight the strange dichotomy between the apparent "overinsurance" of the majority of Americans with the "underinsurance" of a substantial minority. I then turn to the question whose answer has long been assumed by policy makers: should we care if individuals are uninsured? I review the various arguments for public policy intervention in this area, and conclude that externality-based arguments are unlikely to be significant enough to warrant major new interventions (or even the current level of intervention). Rather, arguments based on either irrationalities or redistribution are required to justify an expanded government role.

The remainder of the paper focuses on policy options to address the problem of uninsurance. I begin with a discussion of the key equity and efficiency issues that must be addressed by any government intervention. I turn next to discussing the available evidence that

can guide policy-makers as they try to meet these sometimes conflicting goals.

I then use a micro-simulation model of the health economy to estimate the impact of alternative reforms to provide health insurance. I begin by considering incremental reforms of the type favored by the left (expanding public insurance) and the right (tax subsidies to private insurance). I then turn to more fundamental reforms to insurance markets designed to raise insurance coverage, including mandates on individuals to obtain insurance. I also discuss the use of the existing tax exclusion of employer-provided health insurance as a financing mechanism for these reforms.

Part I: The Insurance Market in the United States[1]

Health insurance markets are straightforward in principle. Individuals, or firms on their behalf, pay monthly premiums to insurance companies. In return, the insurance company pays the providers of medical goods and services for any goods and services used by the individual (the individual's medical claims). Under most health insurance plans, the patient pays part of the costs of medical goods and services, and the insurance company pays the remainder. There are three types of patient payments: deductibles (under which individuals face the full cost of their care, but up to some limit); copayments (under which individuals make some fixed payment when they get a medical good or service); and coinsurance (under which the patient pays a percentage of each medical bill).

[1]Much of this section follows the discussion of health insurance markets in Gruber (2005a) and Gruber (2002).

Private (Mostly Employer) Insurance

The distribution of insurance coverage in the U.S. is shown in Table 1.[2] The most important source of health insurance in the U.S. is private insurance; 80% of the insured, or 177.8 million persons, have private health insurance. Within that group, the predominant source of private insurance is employer-provided health insurance. Only 10% of those with private insurance purchase insurance on their own, through the nongroup insurance market; nine of every ten privately-insured persons get their health insurance through their employers.

Employers offer insurance to qualified employees in the firm, typically those who work full time and have completed some minimal service requirement (such as 0-6 months of employment at the firm). Employers also typically charge employees some share of the costs of insurance, averaging 16% of insurance cost for single plans and 27% for family plans (Gruber and Washington, 2005). As a result, take-up of health insurance by employees offered that insurance is incomplete, with enrollment rates averaging roughly 75% among those offered. Partly, this reflects the fact that individuals may be covered by other family members, so that overall only 7% of those offered insurance are actually uninsured (Gruber and Washington, 2005).[3]

There are two reasons why employers are the predominant source of insurance. The first is

[2]There are three large nationally representative sources of data on insurance coverage in the U.S. The most commonly used source is the March Current Population Survey (CPS), which asks about insurance coverage in the previous year; that is the data used throughout this paper. Insurance coverage information is also collected by the Survey of Income and Program Participation (SIPP), for a smaller sample but on a more frequent (every four months) and longitudinal basis, and by the Medical Expenditure Panel Survey (MEPS), which collects more detailed data on insurance arrangements on a longitudinal basis as well.

[3]There is an interesting set of issues around the decision of employers to pay premiums versus charging employees for those premium costs; see Gruber and Washington (1995) for a review of those issues.

risk pooling. The goal of insurers is to create large insurance pools with a predictable distribution of medical risk. Predictability of medical risk is increased when groups are large and are constructed for reasons independent of health (or at least independent of unobserved components of health). Employees of firms constitute a risk pool that has a good chance of meeting these two conditions. Individuals, on the other hand, do not; even if individuals are pooled together into a large group, insurers still can't be sure that those individuals didn't come to the insurer specifically because they are sick. The preference for large groups by insurers is reinforced by another aspect of insurance provision, administrative costs. Many of the costs of administering insurance are fixed; for individuals or small groups, these fixed administrative costs can amount to a large share of the premium.

These issues are reflected in the pattern of private insurance coverage in the United States. Large employers in the U.S. almost universally offer health insurance to their employees; 98% of firms with more than 200 employees offer health insurance. Among smaller firms, however, health insurance offering rates are much lower; only 55% of firms with fewer than 10 employees offer insurance, and only 76% of firms with 10-24 employees offer insurance.

The second reason why employers are the predominant providers of health insurance is that the tax code subsidizes health insurance purchase through the firm by excluding employer insurance spending from an individual's income, for both income and payroll tax purposes. This leads to a very large effective subsidy to the cost of health insurance for workers. The result of this subsidy is that there is a lower "tax price" of insurance:

$$TP = \frac{(1 - \tau_f - \tau_s - \tau_{ss} - \tau_{mc})}{1 + \tau_{ss} + \tau_{mc}}$$

where τ_f is the federal income tax marginal rate; τ_s is the state income tax marginal rate; τ_{ss} is the marginal payroll tax rate for the OASDI program (the 6.2% tax rate that is levied equally on employees and employers); and τ_{MC} is the marginal payroll tax rate for the Medicare HI program.[4] I differentiate the latter two programs because, beginning in the early 1990s, the taxable maximum for the HI program was increased above that for the OASDI program (and was eventually removed altogether); the marginal rate is zero above the taxable maximum for payroll taxation. For a typical worker in the 15% tax bracket, facing a 5% state tax rate and a 15.3% combined payroll tax rate, this tax price is roughly 0.65; a dollar of health insurance costs 35 cents less than a dollar of other goods purchased with after-tax wages.

In addition, there are also tax subsidies available to employees for their spending on employer-provided health insurance, under section 125 of the Internal Revenue Code. Section 125 generally provides that an employee in a cafeteria plan will not have an amount included in gross income solely because the employee may choose among two or more benefits consisting of cash and qualified benefits. A qualified benefit generally is any benefit that is excludable from gross income under the Code, including health insurance, group-term life insurance, 401(k) plans, child care, and adoption assistance.

Perhaps as a result of these inherent advantages of the group insurance market, the

[4] The reason that the payroll tax rate is additive in the denominator is that the employer is indifferent between purchasing one dollar of benefits or paying wages of $1/(1+ \tau_{ss} + \tau_{mc})$, since each dollar of wages requires a payroll tax payment as well.

nongroup insurance market has not provided a very hospitable environment for insurance purchase. Load factors in this market are high, and the generosity of the typical policy is much lower than in the group market (Gruber and Madrian, 1996). A recent study by the Kaiser Family Foundation found that, for those individuals in less than perfect health, it was often not possible to get coverage that was fully comprehensive, with the particular illness of the individual often being excluded from coverage by the policy. Prices were also very variable in this market, making it difficult to effectively anticipate the cost of insuring oneself.

There is an existing tax subsidy to the nongroup market itself, for a particular group: the self-employed. Beginning in 1986, the self-employed were allowed to deduct 25% of their insurance premiums from their taxable income. This share has grown over time and is now 100%.

Public Health Insurance

There are two major public sources of health insurance. The first is the Medicare program, which provides health insurance for all people over age 65 and disabled persons under age 65. This federal program is financed by a payroll tax. After a two-year waiting period, Medicare insurance is also available to those receiving disability insurance.

The other major public health insurance program in the U.S. is the Medicaid program which provides health care for the poor.[5] The federal and state governments share the financing

[5] Eligibility for the medicaid program was enhanced by the Children's Health Insurance Program, enacted in 1997; I describe both here under the rubric of Medicaid. Details of the Medicaid program are provided in Gruber (2003).

of this program which is paid for out of general tax revenues. Medicaid benefits are targeted at several groups: those who qualify for cash welfare programs, mostly single mothers and their children; most children in the U.S. who are poor (typically below 200% of the federal poverty level); most poor pregnant women (for the expenses associated with their pregnancies); and the low-income elderly and disabled (for non-Medicare health costs and long-term care costs for facilities such as nursing homes). Medicaid is best known for its coverage of the young poor population, particularly mothers and children, who make up nearly 70% of program recipients. However, over two-thirds of the cost of the program is accounted for by the medical costs of the 25% of program recipients who are receiving long- term care, either from home health care or from institutions.

Another large source of insurance in the U.S. is health insurance for those currently or formerly in the military and their dependents. Tri-Care is a program administered by the Department of Defense for military retirees and the families of active duty, retired, or deceased service members. CHAMPVA, the Civilian Health and Medical Program for the Department of Veterans Affairs, is a health care benefits program for disabled dependents of veterans and certain survivors of veterans. Together, these two programs provide health coverage for nearly 7 million Americans.

The Uninsured

Finally, there are the 47 million in the U.S. without any insurance coverage at all. Who are

they? According to the CPS data used this far, the uninsured have lower-than-average incomes; nearly two-thirds of the uninsured are in families with incomes below twice the poverty line. Not all the uninsured are poor, however: 20% of the uninsured are in families with incomes above $50,000 per year. Seventy percent of the uninsured are in families where the family head is a full-time, full-year worker, but is either not offered health insurance or doesn't take it up to cover himself or his family members. Thus, the modal uninsured person is a member of what might be called the "working poor class": below median income, but not among the poorest in the nation.[6]

In addition, there are important dynamics within the uninsured population that are missed by this point-in-time estimate. A problem with the CPS estimate is that it is a strange hybrid of a point-in-time estimate and a backwards look at the previous year.[7] Other surveys which are less widely cited provide different perspectives on the uninsured, as reviewed in CBO (2003). The CBO finds that other surveys that ask about uninsurance at particular point in the year provide estimates very similar to the CPS. But they also find that estimates of uninsurance over an *entire* calendar year are only about one-half to two-thirds as large as point-in-time estimates; correspondingly, estimates of the number of individuals uninsured *at any point* in the last year re on the order of 40-50% higher than point-in-time estimates. These findings highlight the dynamic nature of uninsurance.

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[6] These facts are all derived from EBRI (2006).

[7] Technically, the CPS question asks respondents each March about whether they were uninsured during the entire previous year. In fact, most analysts suspect that respondents are replying about current insurance status, a contention supported by the discussion below.

Part II: Why Are People Uninsured - and Overinsured?

To design sensible policy to address the problem of the uninsured, we must first understand why individuals are uninsured. Medical risks are the type of large and unpredictable risks for which full insurance would be optimal in a first best world. In a standard model with concave utility individuals would be willing to pay an actuarially fair premium to fully insure their medical risks. Clearly this is not the case for many Americans today. Why is that?

Actuarial Unfairness in the U.S. Insurance Market

Individuals may be unwilling to purchase insurance if it is not available at an actuarially fair price to the individual. This can occur for several reasons. The first is the administrative costs of insurance (along with the profit earned by insurers). Private insurance in the U.S. has administrative costs that average roughly 12% of premiums paid. In a standard expected utility model, such a deviation from actuarial fairness can cause individuals with a low level of risk aversion to forgo insurance.

The second is irregularities in the insurance market. For example, even for very large groups of insured, insurance is not available on a per person basis. Traditionally, in fact, insurance was simply offered for singles and for families, regardless of family size. Under such a model, small families cross-subsidize large families, leading to actuarially unfair pricing. Even in today's insurance market, most insurance groups are offered policies for singles, married with no children, and married with children, so that such cross-subsidies still exist. The reasons for

this discreteness in insurance pricing are not clear, given the profits that could be made by finer pricing patterns and the relatively low (presumably) administrative costs of such patterns. This question is an interesting one for future research.

A third reason for actuarially unfair pricing is adverse selection in the insurance market. As noted above, insurers operate with less than full information about those seeking insurance. This raises the cost of insurance in two ways. First, some share of the administrative costs of private insurance are the costs devoted to screening potential applicants to identify the costliest cases. Unfortunately, there is no good data available on the share of administrative costs absorbed by this function; gathering such data would be quite useful.

The second way that adverse selection raises the cost of insurance is though the standard lemons pricing effect (Akerlof, 1970): prices will be higher to reflect the (presumably sickest) subset of individuals who choose to insure. There is very clear evidence of adverse selection within health insurance markets; see Cutler and Zeckhauser (2001) for a review of the literature and Cutler and Reber (1998) for a particularly compelling example. There is less clear evidence, however, on adverse selection *into* health insurance coverage. Indeed, there is surprisingly little work on the general question of whether those who choose to be insured are adversely selected; the two studies on this topic reviewed in Cutler and Zeckhauser (2001) reach mixed conclusions.

Clearly, high prices of insurance are a major cause of uninsurance. Indeed, Chernew et al. (2006) estimate that two-thirds of the increase in the number of uninsured over the past decade can be traced to rising health insurance costs. Literature on this point, however, has not been able to distinguish rises in the underlying cost of medical care from changes in the value of

insurance against risk. In a standard model, while rising insurance loads will lead to less insurance, a pure rise in the costs of treating medical illness should lead to *fewer* uninsured, not more. If individuals have a constant coefficient of relative risk aversion, then as medical costs rise they are effectively poorer. Being poorer should make them less likely to want to undertake the risk of being uninsured.

Thus, the literature showing a negative correlation between insurance costs and insurance coverage is either uncovering a strong response to the non-actuarial piece of insurance costs, or capturing some non-standard mechanism through which higher medical costs affects insurance demand. One such mechanism could be liquidity constraints, with individuals (particularly young individuals, who make up a large share of the uninsured) unable to finance current health insurance purchases to a desired level by borrowing against future income. If the rise in income over the life cycle is faster than the rise in medical risk (or if individuals have access to non-age rated group insurance), then these liquidity constraints may ease later in life. Another mechanism could be problems of time inconsistency (Laibson, 1997; O'Donoghue and Rabin, 1999) whereby individuals overvalue short run insurance costs relative to downstream medical expenditure risk. Yet another mechanism could be failures in the insurance market which do not allow individuals to purchase the type of insurance they want against rising costs, forcing them to include aspects of insurance that are valued at below their costs. This last point is developed further below.

Implicit Insurance Through Uncompensated Care

Even at an actuarially fair price, individuals may not be willing to purchase insurance if their medical risks are primarily catastrophic, due to the implicit insurance provided through hospital uncompensated care. Under federal law, any hospital that accepts reimbursement from Medicare must treat individuals who arrive in an emergent state, regardless of their ability to pay. Hospitals can try to collect the costs of such care from uninsured patients, but they can be avoided (in the limit through personal bankruptcy), becoming "uncompensated care" costs to the hospital. Such uncompensated care amounted to roughly $30 billion for hospitals in 2005.[8]

The existence of free care for catastrophes provides a valuable option to primarily healthy individuals whose only likely medical concerns are emergencies. Whether this effect is quantitatively important in driving insurance decisions is unclear, however. Findings in Rask and Rask (1995) and Herring (2000) suggests that individuals are more likely to be uninsured where more free care is delivered (although causality is somewhat difficult to interpret in this context), but LoSasso and Meyer (2006) find no effect of hospital uncompensated care on insurance status. If uncompensated care does deter insurance purchase, it can have a multiplier effect through adverse selection as well: if the (unobservably) healthiest individuals choose not to insure and instead to rely on free care, then insurers will have to raise prices above actuarially fair levels for the remaining individuals demanding insurance.

[8] This fact is from Gruber and Rodriguez (forthcoming), who document that physicians, on net, provide no uncompensated care in the U.S.

Overinsurance and Limited Choice

Even in a world without adverse selection, full insurance is not optimal due to another informational imperfection: moral hazard. Under the theory of insurance outlined in Arrow (1963) and Pauly (1970), optimal insurance trades off the gains from consumption smoothing against the cost of moral hazard from distorting medical consumption. The result is a middle ground plan with some moral hazard and some risk spreading.

The deadweight loss of excess medical consumption due to insurance is clearly documented by the results from the RAND Health Insurance Experiment (Manning et al., 1987). This experiment randomly assigned individuals to different levels of patient coinsurance and deductibles. The findings were striking: higher patient payments led to significantly less use of medical care with no adverse medical outcomes on average (although some adverse effects for low income and unhealthy individuals). Overall, the elasticity of medical care use with respect to its price was modest, at -0.2, but significant. Even at this small elasticity, Feldman and Dowd (1991) estimate the deadweight loss of insurance in the U.S. to be $125 to $400 billion in today's health economy.

The finding of significant deadweight loss from moral hazard in the health insurance market suggests that the optimal health insurance policy is one in which individuals bear a large share of medical costs within some affordable range, and are only fully insured when costs become unaffordable. This structure is optimal because coverage for all medical expenditures (what is often called first dollar coverage, since all dollars of medical spending, starting with the

first dollar, are covered) has little consumption smoothing benefit, but a large moral hazard cost.

The consumption smoothing benefit from first dollar coverage is small because there is little utility gain to risk averse individuals from insuring a small risk (relative to income). At the same time, this first dollar coverage has substantial moral hazard cost because it encourages individuals to overuse the medical system, demanding care for which the social costs exceed the social benefits.

While first dollar coverage is clearly not optimal, the optimal level of coverage will depend on the nature of risk preferences and the medical risk profile. An example of an optimal insurance plan would be Feldstein's (1971) "Major Risk Insurance" plan, in which individuals would face a 50% copayment on all services until they spent 10% of their income on medical care, beyond which there would be no more copayments.

Feldstein's proposal is much less generous than the typical private insurance plan in the U.S., however, which features relatively low copayments for enrollees. The typical insurance plan in the U.S. has a deductible of $200-$600, a copayment for physician visits of $15-$20, and a copayment for hospital stays of $0-$240 (Kaiser Family Foundation, 2005). As a result, the insurance coverage distribution in the U.S. is best described by a line such as that in Figure 1, from Gruber (2005a). On the horizontal axis is the population of the U.S., arrayed from least generous insurance (uninsured) to most generous, and on the vertical axis is the generosity of health insurance products. Forty-five million Americans have no health insurance, so they lie at zero on the vertical axis (no insurance = zero generosity). The line then jumps up, and there is an increasing generosity of insurance for the remainder of the population.

This discontinuity has the potential to explain a share of uninsurance in the U.S. If there is a large share of individuals who would value some insurance, but not the (close to) first dollar coverage provided by most insurance plans, then they may choose to be uninsured instead. So why does this discontinuity arise? Why are people either uninsured or "over-insured"? There are five possible reasons.

The “Offset” Hypothesis

One explanation could be that if individuals are not covered for minor expenditures, this will raise their major expenditures: less use of the doctor leads to more use of the hospital. This is a common liberal criticism of high patient-cost plans. But this contention is not supported by the RAND experiment, which found total costs to be falling as copayments rose. Indeed, RAND indicated an anti-offset result: more use of primary care led to *more*, not less, use of hospital care, once again with no overall health benefit.

There is one exception to this fact, however, as highlighted by Gruber (2006): primary care for low-income chronically ill patients does seem to be important to their health – and even cost effective in reducing ultimate health care costs. The research reviewed in Gruber (2006) suggests that the optimal insurance policy should cover maintenance care for chronic illness with smaller cost sharing than other care. A limiting case of such an approach is suggested by Fendrick et al. (2001), who promote patient copayments targeted to specific patient diagnoses and related treatments (such as zero copayments on diabetes maintenance drugs for diabetics). It

is not clear whether this is feasible in the short run, but this "value based insurance design" approach holds promise as a future means of targeting demand-side incentives.

The Tax Subsidy

As noted above, health insurance expenditures by employers are tax subsidized: payments to employees in the form of wages are taxed, while payments in the form of health insurance are not. As emphasized by Feldstein (1973), this leads to overconsumption of health insurance. Indeed, recent evidence suggests that tax subsidization leads to a large rise in health care spending among those firms that do offer insurance, with an elasticity of spending with respect to the tax subsidy of -0.7 (Gruber and Lettau, 2004). This cannot be the full explanation, however: there is not a robust catastrophic (or, even better, Feldstein MRI-like) insurance market even in the non-tax subsidized nongroup market.

Regulation

Another reason for this discontinuity could be minimum standards regulations in the insurance market. If the government mandates that insurance plans contain certain features, then indviduals who do not value those features at their cost may find it unattractive to purchase insurance, while those who continue to purchase insurance will have a generous policy.

In fact, however, the regulatory requirements on insurance policies in the U.S. are fairly modest. Some benefits, such as coverage for the expenses of pregnancy and continuation coverage for those who lose insurance, are mandated at the federal level. Many others are

mandated at the state level: for example, most states mandate coverage of mammography and substance abuse treatment, while some states have mandates for benefits such as invitro fertilization and chemotherapy. States also in some cases impose premium taxes on insurance, which would explain underinsurance but not overinsurance.

Existing evidence suggests, however, that these state mandated benefits are not a major cause of uninsurance - or overinsurance. Indeed, Gruber (1994) finds that virtually all insurance plans voluntarily cover mandated benefits even in states where they are not mandated. As a result, this article finds that when states add these mandates, it does not affect the rate of health insurance coverage in the state. Moreover, a number of states have passed "barebones" insurance laws which allow insurers to offer "mandate-free" or "mandate-lite" benefits packages to certain groups of insured (e.g. small firms), yet there has not been much demand for such policies. Thus, overinsurance appears to be the result of choice and not state regulation.

The Access Motive

A fourth reason why insurance may be so generous is that the traditional analysis overstates the costs of moral hazard. In traditional models of insurance, the additional medical care used because of subsidized costs is all due to moral hazard. Nyman (1999) highlights a problem with this view: some of the additional medical care used because of insurance is not due to moral hazard, but rather due to the fact that individuals can now afford better treatments (income effects). That is, moral hazard technically arises only through substitution effects, but the

estimates of Feldman and Dowd referenced above reflect both substitution and income effects.

Unfortunately, it is difficult to decompose the increase in use of medical care into access and moral hazard effects. The access motive is a more important consideration for very expensive treatments, and not for everyday treatments such as physician's visits. Thus, the access motive may explain the strong demand for catastrophic limits on spending out of pocket but it is unlikely to explain why individuals don't face higher copayments for more minor medical procedures, such as physician office visits.

Psychological Motivations

Finally, there may be motivations for holding insurance that go beyond the simple expected utility model that underlies the welfare calculus used here. For example, individuals with self-control problems (a la Laibson (1997) or O'Donoghue and Rabin (1999)) may use insurance as a commitment device. Alternatively, it may be that individuals simply don't like associating financial transactions with medical care. They would rather pay higher insurance up front to avoid dealing with the difficult decisions about whether they want to pay at the time of care.

Summary: Still a Mystery

In summary, there are a variety of hypotheses for why so many individuals are uninsured, but no clear sense that this set of explanations can account for 47 million individuals. Moreover, an equally important and related mystery is why insurance is so much more generous for most individuals than would be suggested by optimal insurance theory. That is, a unified theory of

insurance coverage in the U.S. must therefore explain not only why so many individuals don't have coverage, but also why those who do have coverage are over-insured. This should be a top priority for future research in health insurance markets.

Part III: Why Should we Care About the Uninsured?

The public debate over the uninsured takes as a given that this is a major social policy problem, with 18% of the non-elderly population an unacceptably high share of the population to be without insurance. As highlighted earlier, however, the simple fact that so many are without insurance is not necessarily a cause for public policy intervention; many more individuals don't own their own homes or are obese. So why should we care about uninsurance in the U.S.?

Externalities

The classic argument for increasing insurance coverage is the externalities associated with underinsurance. For example, there are physical externalities associated with communicable diseases; uninsured people are less likely to receive vaccinations and care for communicable diseases. Since such a small share of medical expenditures are related to communicable disease, however, this is not a major rationale for universal health insurance (as opposed to universal vaccination). There is also significant financial externality imposed by the uninsured on the insured through uncompensated care; when the uninsured don't pay their medical bills, those costs are passed on to other users of the medical system. As noted earlier,

however, such uncompensated care amounts to $30 billion each year, which is quite small relative to the $2 trillion health economy.

Labor Market Inefficiency

Another potential inefficiency associated with uninsurance, however, is distortions to the labor market caused by partial employer-based coverage. It is possible that many individuals are afraid to search for or move to jobs where they would be more productive because they are afraid of losing their health insurance coverage. This reluctance to change can lead to a mismatch between workers and jobs that can lower overall U.S. productivity. This is often referred to as "job lock", the unwillingness to move to a better job for fear of losing health insurance (see Gruber, 2001 for a discussion of the theory of job lock).

The problem of job lock is a potentially important welfare cost of the employer-based private health insurance system in the U.S. Empirical studies, reviewed in Gruber and Madrian (2004), confirm that mobility from job-to-job is reduced by job lock. The central estimate, in Madrian (1994), suggests that mobility may be reduced by as much as 25%.

At the same time, the fact that mobility is reduced does not necessarily have major welfare implications. As highlighted in Gruber and Madrian (2004), while there is a large literature documenting the problem of job lock, there is no work that focuses on the welfare implications of this phenomena. Gruber and Madrian offer some back of the envelope calculations which suggest that the welfare cost is unlikely to be large, on the order of 0.1-0.2% of GDP. But these are very rough calculations and this is an area of considerable uncertainty.

Paternalism

The major motivation for caring about the uninsured is paternalism: the concern that individuals may be harming themselves by not buying insurance. There is a clear belief among the public and policy-makers that being uninsured is bad for your health. A recent Institute of Medicine (IOM) study reviewed hundreds studies documenting the health problems associated with uninsurance. The IOM estimated that uninsured individuals use only half as much medical care as the insured, and have a mortality risk that is 25% higher, with over 18,000 people dying each year because of lack of insurance.[9] The studies reviewed by the IOM, however, were mostly observational analyses documenting a correlation between a lack of health insurance and poor health, perhaps controlling for other correlates of insurance and health. Few, if any, of these studies dealt with the endogeneity of health insurance coverage with respect to health status.

Several other studies have used careful empirical methods to more carefully document a causal impact of health insurance on health. Hanratty (1996) studied the impact of the staggered introduction of national health insurance in Canada across the nation's provinces, and found that it was associated with a 4% decline in the infant mortality rate and an 8.9% decrease in the incidence of low birth weight among single mothers. Lurie et al. (1984) studied the removal of eligibility for public insurance for a large group of individuals in California (due to a fiscal crisis in that state in the early 1980s that forced the state to cut back its insurance coverage), and found

[9]http://www.iom.edu/Object.File/Master/17/748/0.pdf, accessed October, 2005.

that health deteriorated significantly after losing public insurance. For example, blood pressure rose among hypertensive patients, leading to 40% increased risk of dying: overall, 5 of the 186 patients who had lost insurance had subsequently died, compared to zero of the 109 patients in a comparable group of individuals who did not lose insurance coverage. Currie and Gruber (1996a, b) studied the expansion of public insurance across and within the U.S. states in the 1980s and 1990s. They found that this expansion led to an 8.5% reduction in infant mortality and a 5% reduction in child mortality.

Note that these findings do not contradict the conclusions of the RAND Health Insurance Experiment, which found that varying the extent of insurance (through the coinsurance rate) had no impact on health. This is because the HIE made no one uninsured; all individuals were fully insured for expenditures above an out-of-pocket limit of $1000.

Putting these two pieces of evidence together suggests the structure of a “medical effectiveness curve” for the U.S., as shown in Figure 2 from Gruber (2005a), which graphs the relationship between medical spending and the associated improvement in health, or the "health effectiveness curve." The horizontal axis in this figure measures the level of medical spending. The vertical axis measures the marginal health benefit from the next dollar of medical spending. Health benefits in this stylized figure are represented in dollar terms, or the monetary value of improving one's health; that is, an improvement of $1 means that this improved health is worth $1 to the individual. Each point on this curve is the marginal improvement in health for spending the next dollar on health care.

Initially, health spending is very productive in terms of improving health status, because

there are a series of very cost effective medical interventions (e.g. vaccination against influenza for the elderly). Point A, for example, measures the marginal health benefits to spending another dollar of health care once one has spent $1000 on health care. This next dollar of spending improves the individual's health by $5 (vertical axis), or 5 times the increase in health spending. This situation appears to represent the case of the uninsured, where some health care provision is very important for health.

As health spending rises, however, we move from clearly cost effective interventions to less clearly cost effective interventions. At point B, moving from $2000 to $2001 of health care spending improves the value of health by $1, equal to the spending increase. At point C, moving from $5000 to $5001 in health care spending improves health by 10 cents, or one-tenth the spending increase. Eventually, additional spending does no good in terms of improving health and the effectiveness curve flattens out; some claim that overuse may actually reduce one's health. This appears to be the case as we move from less to more generous insurance coverage, as in the RAND HIE. Once again, this suggests an optimal insurance configuration where there is broad coverage by insurance, but that insurance is relatively spare, in contrast to the insurance situation in the U.S. today with joint under and overinsurance.

Redistribution

The final reason for caring about the uninsured is redistribution. As discussed earlier, the uninsured are a disproportionately low income group, and insurance is very expensive relative to

their incomes; therefore, they may be a group to whom we want to redistribute health care resources. Of course, this raises the important question of why we would choose this form of redistribution rather than cash. One rationale could be paternalism: many feel that health care is a basic right, like food or shelter, and individuals are more willing to distribute to ensure these "rights" than simply to raise the utility of the poor. Another could be failure of intra-household utility maximization, whereby providing health insurance to poor children offsets the failures of their parents to sufficiently provide for their care.

Part IV: Covering the Uninsured: Background Issues[10]

Solving the problem of the uninsured poses no great mystery. There are a variety of ways in which the government could achieve universal insurance, or even just significantly reduce the number of uninsured. But different approaches pose different tradeoffs, both economically and politically. In this section, I discuss the set of background economic and political issues relative to covering the uninsured, before discussing specific policy options in Part V.

Political Considerations

There are two political constraints in particular which appear to be tightly binding on fundamental health insurance reform at this point. First, it is difficult to envision a solution to

[10]This section draws heavily on Gruber (2005b).

the problem of the uninsured which does not involve in some way the private insurance industry. A common complaint about the private-based health insurance system in the U.S. is its high administrative costs; private insurance administrative costs average 12%, while those of Canada's National Health Insurance (NHI) system only amount to 1.3% (Woolhandler, et al., 2003). Removing this gap would provide an attractive means of saving a large amount of money, money that could be recycled to cover the uninsured.

But this is easier said than done. The health insurance industry in the United States has revenues of over $500 billion per year, making it a very concentrated interest that would have to be defeated to move to nationally provided health insurance. Likely for this reason, efforts at national health insurance in the U.S. have never gone far, even when they included a large role for private health insurance, such as the Clinton health reform plan of 1994. Moreover, the majority of Americans, particularly those working for large firms with choice of plans, are quite content with their private health insurance. Telling them that they have to give up that insurance so that a minority of Americans can get covered will be a very difficult political sell (as witnessed by the attacks on the Clinton plan based on fear of restricting insurance choice). In recent years, as a result, even major health reform proposals work off the existing private insurance market model.

The second constraint is the fiscal situation of the U.S. government. Except for a brief window at the end of the 20th century, the U.S. government budget has been in significant deficit for thirty years, and this deficit shows no sign of abating. Moreover, the government faces

enormous unfunded liabilities under the Social Security and (especially) Medicare programs as the population ages. Given these pressures, major new expenditures to cover the uninsured are likely to engender a major political battle. This highlights the importance of the budgetary considerations discussed next.

Bang for the Buck

Given the budgetary limitations on any public approach to expand health insurance coverage, a key concept that drives reform is the *bang for the buck* (BfB) of the policy. There are several different means of defining BfB, which I will review below, but the basic concept is the extent to which new public spending is directed to those who would otherwise be uninsured, as opposed to "buying out the base" of existing insured individuals. The issue that is central to all of these definitions is *targeting*. If individuals were indelibly labeled as "insured" or "uninsured", then the government could easily target new tax subsidies to those labeled uninsured, with no spending on those labeled insured. In fact, this is not the case: insurance status is a choice of the individual, and can respond to government policy in a way which causes the policy to have lower budgetary efficiency.

It is useful to think about the uninsured as tuna and those who already have insurance as dolphins. The goal of environmentally conscious fishermen is to catch as many tuna as possible in their nets, while minimizing the number of dolphins who are caught by those nets (which happens since tuna and dolphins swim together in the ocean). If the uninsured tunas were swimming in a separate ocean than the insured dolphins, the problem would be minimized. And

if the uninsured tunas greatly outnumbered the insured dolphins, then there would also be a minimal dolphin catch. But, in reality, the 47 million uninsured tunas mostly swim in a part of the ocean where there are 190 million privately-insured dolphins, making it difficult if not impossible for policymakers to design insurance nets to capture the tuna without pulling in the much more numerous dolphins.

This point is emphasized in Table 2, which is tabulated from the March 2006 Current Population Survey (CPS). This table shows, for various income groups in the U.S., the number of the group which is uninsured, the number which is publicly insured, and the number which is privately insured. One-third of the uninsured have incomes below $20,000 per year. In this income range, the uninsured make up over one-third of the total population. Another 40% of the uninsured have incomes between $20,000 and $50,000 per year, and in this income range the uninsured make up about one-quarter of the total population. But one-seventh of the uninsured have incomes between $50,000 and $75,000 per year, and in that range they make up less than one-seventh of the total population; another one-seventh of the uninsured have incomes above $75,000 per year, and in this range they make up only 7% of the total population. Thus, the vast majority of the uninsured reside in parts of the income distribution where they make up less than one-quarter of the population, making targeting of the uninsured a challenge.

There is another important sense in which the uninsured tuna and the insured dolphins swim together: most insurance is provided through firms, and take-up of employer-provided insurance is only partial. Indeed, roughly one-quarter of the uninsured work in firms that offer

insurance. But these are very costly tuna to collect, because those uninsured who are offered insurance represent only about 7% of the total pool that is offered. So targeting this 7% of uninsured within firms without providing government subsidies to the other 93% already insured is very difficult.

Measuring Bang for the Buck

Three sources of inefficiency potentially plague any policy designed to cover the uninsured with a high bang for the buck. First, if the government subsidizes a particular form of insurance coverage, it might spend money on those who already have coverage through that subsidized form. The group that will benefit most clearly from tax credits for non-group insurance, for example, is those already holding non-group insurance. Yet the use of subsidies by this group raises costs while doing nothing to reduce the number of the uninsured.

Second, government subsidies to a particular form of insurance coverage may "crowd-out" other forms of insurance coverage. For example, when the government subsidizes non-group insurance, it can lead those with group insurance to move to the non-group market, either by their decision (switching out of employer-provided insurance) or by their employer's decision (dropping the offering of insurance at the firm). This can lead to more government spending as individuals move from a non-subsidized form of insurance (or less-subsidized, such as employer insurance) to a more subsidized form of insurance.

The third source of low BfB is the possible reduction in coverage for those who are insured before the policy is put into place. For example, suppose that a firm has a workforce that

is predominantly, but not universally, eligible for a non-group credit. This firm might decide to stop offering health insurance, since the majority of its employees can use the credit instead. The minority of employees that cannot use the credit is then out of luck, however, since they have lost their employer insurance with no subsidized alternative, and these individuals may become uninsured. This rise in uninsurance offsets the reductions in the ranks of the existing uninsured, reducing the BfB of the program.

Based on this discussion, there are several different means of measuring bang for the buck – or its inverse, the "buck for the bang". The traditional measure is dollars of public spending per person newly insured. Another measure of interest is the extent of crowd-out: the reduction in employer-provided insurance when other forms of insurance are subsidized (or when the existing subsidies to employer-provided insurance are reduced). A third measure of interest is the (gross) rise in the uninsured, due for example to firm dropping. A fourth measure is the share of beneficiaries of any intervention that were previously uninsured, as opposed to receiving subsidies to remain insured.

A final measure incorporates the *type of uninsured* who are impacted by reform. Simply counting the dollars per newly insured is not satisfactory when different reforms may appeal to very different populations. For example, a reform which significantly increases insurance coverage among children will have much lower costs than one which has the bulk of its impacts in the much higher cost adult population. But this is an unfair comparison because the latter reform is essentially extending more valuable insurance coverage than is the former. So a better

measure of buck for the bang is the spending per dollar of insurance value provided, which incorporates both the numerical increases in coverage and the cost of the individuals provided coverage.

Relation to Social Efficiency

As economists, we typically don't care about budgetary concepts such as bang for the buck, but rather social efficiency. Socially, if an individual was formerly covered by employer-provided insurance and switches to identical coverage through a government-subsidized product, then the only direct financial efficiency consequence is the deadweight loss of raising the additional funds necessary to finance the net cost to the government. There are indirect efficiency consequences as well that are not directly financial, such as the fact that moving from an employer-based system to a non employer-based system might raise labor market efficiency.

The numerical simulations below, however, will touch only indirectly on these larger social efficiency issues. I will present results on the financial consequences for the government and the amount of redistribution that is inherent in each of the policy options. But I will not endeavor to undertake a full social welfare analysis. Such an analysis would extend these results by estimating not just government spending but all changes in spending across various groups in society, and weighting the well-being of each group (insured and uninsured) and thereby valuing the transfers across them. Such an exercise would be a very useful extension of this work.

Part IV: Covering the Uninsured: Behavioral Responses

Policies designed to reduce the number of uninsured come in four (non mutually-exclusive) varieties: policies that expand entitlement to free (or very low-cost) public insurance; policies that expand access to private pooling mechanisms for purchasing insurance; policies that subsidize the purchase of private insurance; and policies that mandate insurance coverage. For each of these types of policies, we would ideally like to know the impacts on the distribution of insurance coverage, on the distribution of income, and on public sector costs. Uncovering these effects requires modeling the behavioral responses to intervention in insurance markets.

In this section, I review what is known about those behavioral responses. In doing so, I draw on a large literature that has emerged in health economics over the past 20 years to study this important set of issues.

Take-Up of, and Crowd-Out by, Public Insurance

The first set of relevant issues is the effect of public insurance expansions on insurance coverage. Expanded public insurance entitlement can raise public insurance coverage through two channels. The first is take-up of the public insurance by those who would be otherwise uninsured. As documented in a variety of social insurance contexts, take-up of public entitlements of this type is far from certain.[11] The reasons for incomplete take-up of free benefits is unclear, likely reflecting some mix of mis-information about eligibility and stigma about

[11]See Remler, Rachlin and Glied (2001) for a discussion of take-up of social insurance programs and its implications for public health insurance.

taking a public handout. Take-up has been shown to be at least partly rational in a variety of social insurance contexts, however, with higher benefits entitlements or more extreme risks when not publicly insured leading to higher take-up rates.[12]

The second channel is crowd-out, or movement from other forms of insurance to public insurance. The extent of crowd-out of private insurance by public insurance is unclear ex ante. On the one hand, leaving private insurance for public insurance might be attractive, because the Medicaid insurance package is much more generous than that provided by the typical private insurance plan and it doesn't cost anything. In terms of benefits, many employer-provided insurance plans don't include the "optional" benefits covered by virtually all state Medicaid programs, such as dental or vision care. In terms of costs, the typical employer who offers health insurance charges families over $200 per month, or almost $2500 per year, to enroll in an insurance plan. Moreover, while copayments are low in employer-provided insurance relative to the optimal level recommended by economic theory, they are much higher than those paid in Medicaid, which has close to zero copayments mandated by law. Indeed, based on its benefits package, the Medicaid program provides the “best insurance money can’t buy”!

On the other hand, there are disadvantages to moving from private insurance to Medicaid as well. First, while Medicaid provides generous benefits, in many states the program reimburses physicians quite poorly, making it difficult in some areas to find a physician who will accept Medicaid reimbursement. Second, Medicaid is an uncertain entitlement, subject to both the vagaries of the political process and the uncertainty of income; if income rises too much,

[12]For example, in the context of unemployment insurance, see Anderson and Meyer (1997).

individuals may find themselves disqualified from the program. Given potential difficulties in re-enrolling in private insurance, individuals may be wary of leaving that insurance in the first place for a public entitlement.

A large body of empirical research has investigated the degree of take-up and crowd-out of expanded public insurance, as reviewed in Gruber and Simon (forthcoming). It is clear from this past work that overall take-up of public insurance expansions is low; for example, Gruber and Currie (1996b) estimate take-up of Medicaid expansions over the 1984-1992 period at only 23%, while Gruber and Simon estimate take-up of the S-CHIP expansions of the 1996-2002 period at only about 10%. Low overall takeup is not surprising, however, given that the large majority of individuals made eligible for public insurance through these expansions already had private health insurance.

This raises the question of the degree of crowd-out of private insurance. The earliest work on crowd-out, Gruber and Cutler (1996), suggested that crowd-out was quite large, with private insurance coverage declining by half as much as public insurance enrollment was rising. Subsequent work has been mixed. This work is summarized in Gruber and Simon (forthcoming), who estimate that crowd-out is about 60%.

Firm Reactions to Changes in the Insurance Environment

A second set of behavioral reactions that are crucial for modeling the impact of insurance market interventions is firm reactions to changes in the insurance environment. In theory,

subsidies to employer spending on insurance should raise the odds that employers offer insurance, increase the share of the insurance burden financed by employers, and lead employers to choose more generous insurance plans. At the same time, subsidies to non-employer insurance options (such as non-group insurance and Medicaid) should lead employers to do the opposite.

There is a sizeable literature that estimates the reaction of employers to changes in after-tax insurance prices, as reviewed in Gruber (2002). Most of this work has focused on estimating the elasticity of firm offering with respect to the after-tax price. Studies using variation in tax prices in a cross section have yielded large estimated elasticities in the range of -0.6 to -1.8, but these studies suffer from omitted variables that contemporaneously determine tax prices and insurance offer decisions. Other studies have overcome this difficulty by using changes in tax subsidies over time that vary across firms (e.g. due to state tax changes). These studies have yielded more modest estimates of -0.3 (Gruber and Lettau, 2004, for the U.S. context) to -0.5 (Finkelstein, 2002, for supplemental benefits in Canada). Gruber and Lettau (2004) highlight that the response of employer offering to tax price variation is concentrated in small firms; the elasticity of offering for small firms was -0.69, while it was close to zero for medium and large size firms.

There is also a sizeable literature on the impact of after-tax prices on employer insurance spending. Once again, the most convincing estimates come from tax changes over time. Woodbury and Hammermesh (1992) analyze all fringe benefit expenditures around the Tax Reform Act of 1986 in a panel data set of colleges and universities. They conclude that tax

reform substantially reduced the demand for fringes, with an estimated elasticity in excess of -2. But this is not focused on health insurance spending per se, so it is difficult to disentangle the impact on health insurance. Gruber and Lettau (2004), in the study described above, also examine the impact of tax subsidies on employer-provided insurance spending, using similar variation across states in their tax systems to Woodbury and Hamermesh. And they also find a quite large elasticity of insurance spending of -0.7.

A particularly important margin of response to tax subsidies is how employers change their contributions to health insurance for employees. This response would be subsumed in the spending elasticities cited above, but it is important to break it out distinctly due to the potential impact of changing contributions on employee takeup. Gruber and McKnight (2001) use the Current Population Survey to study the impact of tax changes on the decisions of employers to pay all of the cost of their health insurance plans. The share of employers paying all those costs fell from 44% in 1982 to 28% by 1998. They model this variable as a function of a variety of factors, including the tax subsidy to employer-sponsored insurance. They find that for each 10 percentage point reduction in the tax subsidy, the share of employers paying all of the costs of health insurance falls by 1.7 to 3.8%.

Individual Reactions to Insurance Price Changes

A central parameter for evaluating the effects of tax subsidy policy is the elasticity of employee takeup of employer-provided insurance if it is offered. As highlighted earlier, takeup

among those offered is fairly high for all firm sizes and average firm wage levels. But does takeup respond to the prices charged to employees for insurance?

The answer, to date, appears to be no. Two articles have studied the response of employee takeup to the price charged for insurance (Chernew, Frick and McLaughlin, 1997; Blumberg and Nichols, 2001). Both papers find that firms that charge more for insurance have no lower takeup of their insurance policies. These papers do run into the potential problem that firm premium decisions are endogenous to employee tastes. The direction of bias here is unclear, and depends on whether firms set low employee premiums when there are tastes for insurance, or when there are not (because of paternalism or to satisfy insurance company conditions for high employee takeup). Gruber and Washington (2005) surmount this problem by examining the "natural experiment" provided by the Federal government's action, first for postal workers in 1994 and then for other workers in 2000, to make employee premiums tax deductible. This move to tax deductibility, which significantly lowered the net premium cost of insurance, had no effect on the odds of taking up insurance by individuals or by families.

At least three-quarters of the uninsured are not offered health insurance. Thus, in focusing on the impacts of tax subsidies to nongroup insurance, the key question is how price sensitive this group will be in their takeup decisions. Unfortunately, we have essentially no evidence on this critical question. The one relevant paper is Marquis and Long (1995), who estimated the demand for non-group insurance coverage among workers not offered employer-sponsored coverage as a function of the area-specific price of non-group coverage. They estimate an elasticity of non-group coverage of -0.3. The problem with this approach is that the

price of insurance reflects not only true price differences in insurance (differences in the load factor, or the premium cost relative to expected claims expenses), but also differences in medical costs, and differences in underlying tastes for insurance. Both of these latter two factors will bias downward any estimate of the impact of area insurance prices on demand. Thus, we are left with only a lower bound on the elasticity of insurance takeup among those not eligible for employer coverage.

Part V: Covering the Uninsured: Policy Impacts

The large literature reviewed in Part IV provides a valuable set of insights about how changes in the insurance market can affect individuals and firms. But it is not straightforward to translate these insights into policy conclusions, particularly when multi-faceted policies affect several margins at once (e.g. simultaneous subsidies to employers and expansions of public insurance). To move from these behavioral estimates to policy impacts requires a modeling framework.

Typically, academics have played the role of providing the inputs to this framework, behavioral elasticities of the type reviewed above, while leaving to others (such as the Congressional Budget Office) the problem of how to incorporate these elasticities into outcome effects of policy interventions. Over the past decade, however, I have developed a micro-simulation model similar to that used by government scoring agencies, incorporating the best evidence from health economics to predict policy outcomes. This section reviews briefly the

structure of this model, and then uses it to assess alternative reforms to cover the uninsured.

The Micro-Simulation Model

The micro-simulation model that I use is described in detail in Gruber (2005b), so I just summarize the key elements here. The model takes as its base data from the February and March, 2001 Current Population Survey, updated to 2006. These data are matched to information on health insurance premiums and health costs. Data on the premiums for employer insurance, and the distribution of premiums between employers and employees, comes from the 2004 MEPS, updated to 2006. For non-group insurance, a premium for a healthy 40 year old male is assigned based on analyses from the Community Tracking Survey and the Medical Expenditure Panel Survey (MEPS), and data on premiums collected by the Commonwealth Fund, the Health Insurance Association of America, and e-health insurance.com. This premium is then adjusted by age, sex and health status using factors provided by an actuarial consulting firm.

These data are used to develop a micro-simulation model that computes the effects of health insurance policies on the distribution of health care spending and private and public sector health care costs. This model takes as inputs both the data sources described above and the detailed parameterization of reform options. The model first turns these policy rules into a set of insurance price changes; for example, if the policy intervention is a tax credit for non-group insurance, then the model computes the implied percentage change in the price of nongroup insurance for each individual in the model. These price changes are then run through a detailed

set of behavioral assumptions about how changes in the absolute and relative price of various types of insurance affect individuals, families, and businesses.

The key concept behind this modeling is that the impact of tax reforms on the price of insurance continuously determines behaviors such as insurance take-up by the uninsured and insurance offering by employers. The model assiduously avoids "knife-edge" type behavior, where some critical level is necessary before individuals respond, and beyond which responses are very large. Instead, behavior is modeled as a continuous function of how policy changes (net of tax) insurance prices.

In doing this type of analysis, a number of assumptions must be made about how individuals will respond to tax subsidies, through their effect on the price of insurance. These assumptions have been developed based on the available empirical evidence reviewed above, although there are many holes in this literature that must be filled in order to fully simulate policy effects. These assumptions are reviewed in detail in Gruber (2005b).

A key aspect of modeling health insurance policy is appropriately reflecting the decisions of firms, since 90% of private health insurance is provided by employers. Economists tend to model firm decision-making as reflecting the aggregation of worker preferences within the firm. The exact aggregation function is unclear, as reviewed in Gruber (2002); in my model I assume that the mean incentives for the firm (e.g. the average subsidy rate for non-group insurance) is what matters for firm decision-making.

The fundamental problem faced by individual-based micro-simulation models is that data

on individuals does not reflect the nature of their co-workers, so that it is impossible to exactly compute concepts such as the average non-group subsidy in a worker's firm. I address this problem by building "synthetic firms" in the CPS, assigning each CPS worker a set of co-workers selected to represent the likely true set of co-workers in that firm. The core of this computation is data from the Bureau of Labor Statistics that show, for workers of any given earnings level, the earnings distribution of their co-workers, separately by firm size, region of the country, and health insurance offering status. Using these data, I randomly select 99 individuals in the same firm size/region/health insurance offering cell as a given CPS worker in order to statistically replicate the earnings distribution for that worker's earnings level. These 99 workers then become the co-workers in a worker's synthetic firm.

These synthetic firms then face three decisions about insurance: offering (whether to offer if now not offering, or whether to drop if now offering); the division of costs between employer and employees; and the level of insurance spending. I model each of these decisions as subject to "pressures" from government interventions. In particular, subsidies to outside insurance options (non-group insurance or public insurance) exert pressures on firm's offering insurance to drop that insurance and to raise employee contributions; subsidies to employer spending on insurance cause firms that don't now offer insurance to be more likely to offer, causes firms to pick up a larger share of the cost of insurance, and causes a rise in employer spending on insurance; and subsidies to employee spending on insurance also raise the odds that firms offer insurance, and raise employer spending on insurance, but they *lower* employer contributions to insurance.

Finally, a key assumption for this type of modeling is the assumption on the wage incidence of changes in employer-insurance spending. Gruber (2001) reviews the literature on incidence, and concludes that there is strong evidence for full shifting to wages of firm-wide changes in insurance costs, with some evidence of shifting to sub-groups within the workplace as well. I make a mixed incidence assumption for this model. Any firm-wide reaction, such as dropping insurance or lowering employee contributions, is directly reflected in wages. Yet any individual's decision, such as switching from group to non-group insurance, is not reflected in that individual's wages; rather, the savings to the firm (or the cost to the firm) is passed along on average to all workers in the firm.

Mine is far from the only approach to modeling the impact of health reform on individuals, firms and the government. Modelers such as the Lewin Group and the Urban Institute (through their TRIM model) have been working on these issues for years. They have well developed models which provide interesting alternative scenarios for policy-makers. I rely on my model for this paper since these alternatives are not readily available to me for comparable runs. But a critical issue for policy makers is to "get under the hood" of all models of this type and to consider the implications of key sensitivity checks of the models' construction.

Modest Reforms

I first consider two examples of modest reforms to insurance markets. These reforms

provide a benchmark for the kind of health policy changes that are most likely in today's fiscally constrained environment[13] I consider both a typical "liberal" incremental reform (expanding public health insurance entitlements) and "conservative" incremental reform (offering tax credits for the purchase of nongroup insurance). To compare these alternative reforms, it is useful to put them on an even footing in terms of coverage impacts. I do so by comparing alternative policies that cover either 5 or 10 million new persons.

Public Insurance Expansion

The first approach that I consider is expanding our existing public insurance entitlement. Currently, that entitlement is fairly generous for children (extending at least to 200% of poverty), but not at all for non-children who don't then become pregnant. This has the strange feature that individuals are covered quite generously until they turn 19, then covered not at all. This implies that extending public insurance to the lowest income adults would be a much better targeted expansion than would further extensions to middle class children.

Table 3 considers two such expansions. The first column shows the effects of extending free public health insurance to all individuals under 100% of the poverty line. In this range, children and many parents are already eligible for public insurance, but single adults and most parents are not.

This policy reduces the number of uninsured in the U.S. by 5.1 million. This is only a net

[13]This subsection updates some of the estimates in Gruber (2005b) for incremental reforms. See that paper for a richer discussion of these options and other alternatives.

figure, however; there is a gross reduction in the number of uninsured of 5.2 million, but an offsetting very small increase in the number of uninsured of 0.1 million from firms dropping insurance in reaction to this increase in outside insurance opportunities. Roughly 85% of the individuals receiving the benefit of this expansion were previously uninsured; the remaining 15% were individuals who had private insurance but who chose to move to public coverage (crowd-out). As a result, there is a reduction in the number of employer insured of 0.6 million. Overall, the number of persons on public insurance rises by 6.2 million, so that the total amount of crowd-out (1 - change in uninsured/change in public insurance) is about 17%.

This expansion has a total cost to (federal plus state and local) government of $26 billion per year. This amounts to about $5000 per person newly insured. This reflects not only the cost of paying for the previously uninsured who sign up for public coverage, and also the cost of paying for those previously insured who sign up (which increases the numerator but not the denominator). This cost also includes some (relatively small) tax incidence effects from changes in wages due to the policy.

The next row of the table focuses on the targeting of the policy, in terms of which types of formerly uninsured individuals are helped by this intervention. The average age of those newly insured by this policy is over 33 years, and 21% of those who were newly insured by the policy were in fair or poor health. For comparison, among all uninsured persons, the average age is 31 years old, and 9% are in fair/poor health. Thus, the set of individuals getting covered by these expansions are in much worse health, and therefore more costly to insure, than are the

set of uninsured individuals not affected by the policy.

This point is summarized by the next row in the table, which shows the average cost associated with insuring the uninsured who gain coverage through these initiatives. For this calculation, I have imputed to each person in the data the cost of insuring them through non-group insurance, which varies by age/sex and by health status. I then discount this figure by 33% to approximate the cost in a group environment. I then add up across all newly insured, and subtract it for those newly uninsured, to get a total "value" of insurance provided. This is a somewhat arbitrary normalization but provides a useful means of comparing different policies. For the public expansion this cost is almost $5400; by way of comparison, for all uninsured persons, the average cost is less than $3400.

The next row shows government spending per dollar of insurance value provided, which is the ratio of government spending to the sum of the insurance value provided to the uninsured; this is the "buck for the bang" measure described earlier, for this arbitrary normalization of insurance value. For this expansion the figure is $0.93; that is, relative to providing those newly insured with coverage at an age/sex/health specific group-level price, this policy spends 7 cents less per person. As emphasized earlier, this is not a measure of deadweight loss or social efficiency; it is simply a convenient proxy for capturing the targeting of this approach versus alternatives that we consider below.

The final rows in the table show the redistributive impact of this policy by documenting the share of government spending going to different income groups. In this case, the result is simple: 100% of the benefits go to those below the poverty line, with no benefits for those above

the poverty line. This is a highly redistributive policy.

The second column of Table 3 shows the effect of a much larger expansion in public insurance, making all individuals with incomes below 185% of the Federal poverty line eligible for public insurance. This expansion covers 10 million persons, although Medicaid rolls rise by 13.5 million, for a net crowd-out of one-quarter. The cost of this policy is much larger, at $47 billion per year, or $4700 per newly insured. Thus, despite the much larger expansion, the cost per newly insured is quite similar to column 1.

The set of individuals newly insured by this more generous expansion is somewhat healthier than in column 1, and the typical person newly insured has an average cost of $4690. The bang for the buck is somewhat lower than in column 1: spending per dollar of insurance value provided is roughly $1. This is a common feature of most health policies: as they are expanded more broadly, the value of insurance coverage per dollar of spending falls. This is because more generous expansions are less well-targeted, leading to a bigger problem of crowd-out.

Moreover, the spending is somewhat less redistributive with this policy. In this case, 55% of spending goes to those below the poverty line, and 45% to those between 100% and 200% of the poverty line.

Non-group Tax Credits

Table 4 considers an alternative popular incremental reform: tax credits for the purchase

of non-group insurance.[14] Individuals and families are eligible for a credit of one size for single coverage, and another size for family coverage. This eligibility is restricted on income in one of two ways. First, I consider a "tightly targeted" non-group credit, which is fully available to single persons with income below $15,000, or families with income below $30,000, and which phases out as income rises, with eligibility ending at $30,000 for singles and $60,000 for families. Second, I consider a "loosely targeted" non-group credit, which is fully available to single persons with income below $25,000, or families with income below $50,000, and which phases out as income rises, with eligibility ending at $50,000 for singles and $100,000 for families. The required magnitude of these credits is shown in the second row of the table; for each level of targeting, I choose a credit amount sufficient to hit the targets of 5 and 10 million newly insured persons.

Several differences in the effects of nongroup tax credits and public insurance expansions are immediately apparent. First, there is a much larger gross increase in the uninsured offsetting the gross reduction in meeting our targets of 5 and 10 million. For example, to hit the target of a 10 million person reduction with tight targeting requires take-up by 13 million persons, since there is a 3 million person rise in the uninsured from firm dropping. Second, there are very large reductions in the number of employer insured, due both to employee switching and firm dropping; roughly 20% of this reduction comes from switching, and the remaining 80% is due to firm dropping. Moreover, a much smaller share of the recipients,

[14]For all of the tax policy analyses considered here, I assume that any tax policies are fully refundable. Roughly half of the uninsured do not pay taxes, so any non-refundable tax policy will have very limited impact.

between 37 and 50%, were previously uninsured; the majority are using this subsidy while retaining insurance coverage.

This may seem like a lot of firm dropping in response to (in particular in the first column) fairly small non-group credits, but it is important to remember that this reduction in employer insured is off of a very large base of 180 million employer-insured. The 5.5 million reduction in employer-insured in the first column, for example, represents just 3.5% of the employer-insured in the U.S. Even with the enormous non-group credit shown in the second column, $6000 for singles and $15,000 for families, only 6.6% of those with employer-provided insurance drop that insurance. This is partly because the credits are targeted to only a subset of employees, so that on average the pressure on employers to stop offering insurance (due to the erosion of the employer tax advantage) is small. When the credit is more loosely targeted, in the final two columns, the reduction in the employer-insured is much larger, rising to almost 13% of the employer-insured in the final column.

Third, this approach is by and large more expensive than public expansions. For the 5 million target, with the tightly targeted credit, the cost is fairly similar to the public expansion. The other approaches, however, are much more expensive, both overall and (by definition) per person newly insured. Indeed, a loosely targeted credit designed to cover 10 million persons costs almost $80 billion per year, or about $8000 per person newly insured.

Another striking difference between public expansions and non-group credits is the targeting of the spending. In contrast to public expansions, the set of uninsured who gain

coverage through non-group credits are much healthier than the average uninsured person, with an average age of 27-28 years, and only 5-7% in fair or poor health. The average cost of insuring the newly insured is only $2400-$2700 per year.

The reason for these low costs is that these types of partial subsidies to non-group insurance are much more attractive to the healthy individuals for whom the lower cost of non-group insurance makes these a larger percentage subsidy. As a result, the value of insurance provided by these policies is much less than for a public expansion. Indeed, as the last row shows, it takes $2.40 to $4 of government spending to provide just $1 of insurance coverage through these policies. Thus, by this measure, non-group tax credits are much lower bang for the buck than public insurance expansions.

Another lesson is that the BfB of non-group credits is much higher if they are tightly, rather than loosely, targeted. This is because, given the low incomes of the uninsured, more tightly targeted credits spend a higher share of their costs on those who would otherwise be uninsured. This highlights the value of tightly targeting health care interventions, but it is not clear how politically realistic such targeting will be, given the broad reach of recent tax policy changes. For example, the child tax credit, originally introduced as a benefit for low income families with children, now extends to families with incomes over $100,000 per year.

Because of the less stringent targeting than for public insurance, non-group credits also embody less redistribution, as shown by the distribution of net spending in the final rows of the

table.[15] The credits that extends coverage to 5 million persons distributes benefits to those up to 300% of poverty; the credits that extend coverage to 10 million persons distributes significant benefits up to 400%, and some even beyond that level.

In order to combat the erosion of nongroup tax credits, many have suggested extending tax credits to the employee portion of employer-provided insurance as well. While this does to some extent mitigate the erosion of the employer market, however, it significantly raises costs. This follows directly from the observations made earlier: 93% of those offered already have insurance, so most of the dollars from credits to employees will flow to those already covered, and those who don't take up employer offers are very price insensitive, so there will be relatively few newly insured from such a policy. Moreover, employers would react to such a policy by raising employee contribution levels to some extent, so that the incidence of the tax credit would not be fully on lowering health insurance costs. Indeed, if the government attempted to newly insure 5 million persons through a tightly targeted credit to employees to purchase employer-provided insurance, it would require a credit of $1200 for individuals and $3000 for families, for a total cost of $55 billion per year. Costs rise exponentially as the credit is more loosely targeted or attempts to cover more individuals.

More Fundamental Reform

If politicians decided to consider more fundamental reforms to address the problem of the

[15] The spending distribution here incorporates both the spending through non-group tax credits and the savings through lower public insurance payments to these groups for those leaving public insurance.

uninsured, there are a number of directions that could be considered. A more comprehensive plan to deal with the uninsured must address three issues. The first is pooling. Insurance is most efficiently provided through a pool, and a key goal of fundamental health care reform must be to provide some type of pooling mechanism through which individuals can buy their insurance and avoid the harsh non-group market. The second is affordability. The largest single private insurance pool in the U.S. today is the Federal Employee Health Benefits Program (FEHBP), which insures almost 3 million federal employees. Employees face a variety of choices in this pool, but all are fairly generous and subject to mandated restrictions such as mental health parity (mental health expenses must be covered as generously as other expenses). The cost of insurance under the most frequently chosen Federal plan, the Blue Cross plan, is very high: for 2006 this plan cost $5125/year for individuals and $11750/year for families. For a family of four at 200% of the poverty line, this would represent more than one-quarter of their family income!

The final issue is mandates. A key issue that must be faced by policy makers as they address the uninsured is whether the goal is universal insurance *access*, or universal insurance *coverage*. As will be clear from the estimates below, there is no way to design a public policy that gets close to universal coverage without mandating that individuals are insured. But mandates are politically unpopular, so politicians may want to focus instead on ensuring that everyone who wants insurance can afford to have it.

To give some sense of the cost and consequences of fundamental reform, I consider three options that take as given the constraint that private insurance provision must be a centerpiece of any reform plan.

Universal Access

The first option is to ensure universal access of individuals to an affordable insurance product. Here I follow the proposal for national universal coverage developed in Gruber (2007a). This proposal shares many features with the ambitious health care reform passed in Massachusetts in 2006 (and considered by other states as well, most prominently California), as well as many of the proposals of the leading Democratic candidates in the 2006 Presidential election.

Public insurance entitlements would be frozen at their current level, which is typically around 200% of poverty for children in most states, and 100% of poverty for parents in many states. The remainder of low income individuals in the U.S. who do not have access to employer-sponsored insurance would be enrolled in new state-specific pools. Insurance companies would be eligible to offer insurance in these state-specific pools on a guaranteed issue basis. Within these pools, insurance prices would be completely community rated.

The benefits packages within the pools would vary based on income group. For the lowest income individuals (below the poverty line), coverage would be complete, with minimal cost-sharing. As income increased, modest cost sharing would be introduced, reaching levels typical of new employer-sponsored insurance offerings for the highest income members of the pool (e.g. $20 copayment for physician visits or generic prescriptions). There would be other cost controls in place, such as selective networks, to offset the more generous benefits provision

for lower income groups. In my modeling I assume that the cost of insurance in this pool would equal the typical cost of insurance to large firms in each state, and that this would fall to 95% of that level for those between 100 and 200% of poverty, to 90% of that level for those between 200% and 300% of poverty, and to 85% of that level for those between 300% and 400% of poverty through cost-sharing. There would also be redistribution across plans within this pool to offset very high cost cases, with all insurers contributing to a fund going to offset part of the highest cost patients.

Insurance would be subsidized in this pool by setting a limit as a share of income that individuals must pay for their insurance. These limits would be:

- 2% of income between 100 and 150% of the poverty line
- 4% of income between 150% and 200% of the poverty line
- 6% of income between 200% and 250% of the poverty
- 8% of income between 250% and 300% of the poverty line
- 10% of income between 300% and 350% of the poverty line
- 12% of income between 350% and 400% of the poverty line

For comparison purposes, median income in the U.S. is between 3 and 4 times the poverty line, depending on family structure, so this schedule would subsidize insurance up to median income levels.

This approach leaves one low income group without subsidies, however: low-income individuals who are offered employer-sponsored insurance (ESI) but who cannot afford the premiums. As highlighted earlier, the vast majority of low-income individuals who are offered

ESI take it; for example, 87% of those between 100% and 200% of the poverty line offered ESI are insured (Gruber, 2007b). Thus, it is very expensive to try to insure the remaining individuals. At the same time, there is a major horizontal equity concern with allowing subsidies only to those who aren't offered ESI (particularly once, as described below, the tax subsidy to ESI is removed).

Gruber (forthcoming) reviews the options for addressing this inequity and suggests that a middle ground may be the "voucher" option that is present in the recent Massachusetts legislation: low income individuals offered ESI can come to the low-income pool, but must bring their employer contribution with them (e.g. employers must contribute their share to offset the state's pool cost). While expensive, this approach reduces costs by forcing individuals to move to the pool if they want to get the subsidies, rather than just subsidizing their status quo ESI choice. I include this option in the modeling here.

For middle and high income families (above 400% of poverty), states would set up a new pooling mechanism which would replace the existing non-group insurance market. This new pool would be guaranteed issue (insurers cannot reject any applicants), and there would be no health rating, although insurers could age-rate on a 2:1 basis (e.g. the premiums for the oldest enrollees can be no more than 2 times the premiums for the youngest enrollees). Any insurer participating in the pool would contribute towards a risk pool that offset part of the costs of the very highest cases, to deal with adverse selection within the pool.

While the new pooling mechanism would replace the non-group market, firms would also be allowed to buy into that pool, although if they did so they could not offer their employees any non-pool source of insurance (to avoid sending the worst risks to the pool). If an employer offered the pool to its employees, the employer would be list-billed for the individual costs of each enrollee.

The results of introducing a plan of this nature are shown in the first column of Table 5. This policy would increase the number of newly insured by 23 million, slightly less than half of the total stock of uninsured, despite these very generous subsidies and comprehensive reform. This reflects the fact that many uninsured are uninterested in obtaining coverage even at very high subsidy rates. Although this is clearly an out of sample prediction, this result is consistent with the large number of uninsured who are eligible for free public insurance but do enroll as well as the large number of uninsured who are eligible for highly subsidized employer-provided insurance but do not enroll. Universal access does not lead to anywhere near universal coverage.

This policy is also very expensive, with a cost of $102 billion, or almost $4500 per person newly insured. This reflects the fact that the vast majority of those taking up the new subsidies were already insured; only 25 million of the 52 million persons using these subsidies were formerly uninsured. There is a sizeable erosion of employer provided insurance, with 16 million persons losing employer coverage, which represents about 10% of the existing stock of employer-insured individuals. Most of those move to the new pool, but over 2 million become uninsured as their firms drop insurance but they don’t find the new pool option attractive.

This policy attracts individuals who are slightly sicker than the average uninsured person,

with average costs per person of $3430 (about $70 higher than the typical ex-ante uninsured). Overall, this policy spends $1.10 per dollar of insurance value provided. It is quite striking that the BfB of this policy is better than for non-group tax credits. In other words, compared to a broad tax credit designed to cover 10 million uninsured, this policy covers more than twice as many individuals for only 25% more in spending, and delivers almost four times as much insurance value.

Individual Mandate

The second option is to move from the universal access approach in the first column to a universal coverage approach. This can be accomplished by adding an individual mandate, a requirement that all individuals obtain insurance coverage, to the universal access option. This is similar to what is required for auto insurance in many states, and was a centerpiece of the recent Massachusetts reform plan. We have no experience to date with such a mandate, so it is hard to predict the success of enforcement. But, if penalties are strong (as they are in Massachusetts, where individuals are liable for half of insurance premiums even if uninsured), the mandate is likely to be close to universal. For simplicity here I assume that the mandate provides close to universal coverage, although in practice some individuals are likely to "slip through the cracks".[16]

The results of adding this mandate are shown in the second column of Table 5. By

[16] In particular I assume that 95% of those who would not voluntarily choose to insure are forced to insure through the mandate.

assumption, 97% of the uninsured are covered. What is striking about these results, however, is the incredible gain in budgetary efficiency relative to the universal access plan. Total public sector costs have risen only 25%, while the number of newly insured has increased by 100%. There is less displacement of employer insurance than in the universal access plan, as individuals use their employer coverage to meet this mandate. With the mandate, 52% of those using the new pooling mechanism were formerly uninsured. As a result, the cost of this option per newly insured falls to $2732, and the government spends only $0.81 per dollar of insurance value provided.[17]

This is a striking set of findings, which suggest that besides any moral/paternalism argument for universal coverage, there is a budgetary efficiency argument as well. The logic of this result is quite clear: relative to a universal access plan, moving to universal coverage involves mandating those who would be uninsured to sign up for insurance. This is the ultimate form of targeting; these individuals are only tunas, so there is no money wasted on dolphins.

This result in particular highlights the important difference between bang for the buck and social efficiency. The higher bang for the buck in this case comes from mandating that uninsured individuals spend money they would prefer to spend elsewhere on their health insurance coverage (above and beyond subsidies). Yet there is no gain in social efficiency unless there are externalities from this increased insurance or other gains through paternalism.

[17] This estimate is below 1 because I value insurance at the typical group insurance cost, while I assume that individuals enroll in less generous plans at higher income levels in the pool.

Universal Coverage Financed By Removing the Tax Exclusion

A natural source of financing for this initiative is the tax subsidy to employer-sponsored insurance. While employer expenditures on wages are taxed, employer expenditures on health insurance are not. This large subsidy to ESI is regressive, since it is worth the most to the higher income individuals with the highest tax rates, and induces inefficient insurance purchase, since individuals can buy excessively generous insurance with pre-tax dollars. Of course, in the absence of any other pooling mechanism for workers, the ESI tax subsidy may be a necessary price to pay to keep the employer-sponsored insurance market intact. With a new pooling mechanism, however, reductions in ESI are not problematic: it doesn't matter whether individuals obtain insurance through employers or not, so long as they have access to some group insurance mechanism. That is, introducing a new pooling mechanism can facilitate reform of the regressive and inefficient existing subsidy to ESI.

Moreover, the employer tax expenditure has a natural advantage as a source of financing: the tax savings grow at the rate of health insurance premiums, matching the growth in expenditures under a universal coverage plan. Since health insurance premiums grow faster than incomes, supporting universal coverage through an income tax would require a constantly rising tax rate. Limiting the exclusion, however, would provide a stream of revenues that grows at the same rate as program costs.

I therefore consider the impact of funding the national plan by removing this tax subsidy. More specifically, employer expenditures on health insurance would be included in taxable

wages for individuals. An important issue to resolve with such a policy is whether ESI expenditures would be included for both income and payroll tax purposes and, if included for both, whether the resulting revenues would be dedicated to the social insurance programs financed by these payroll taxes or "recaptured" for use in funding the universal coverage plan. I assume that revenues would be recaptured from the payroll tax.

The next column of Table 5 shows the implication of using this financing source for the mandate plan. Strikingly, this source is sufficient to move than pay for the national plan, with $50 billion in excess government tax revenues.[18] That is, the current tax exclusion is so large that by rededicating it in this fashion the U.S. can have universal coverage with a $50 billion surplus. This $50 billion is much less than the amount lost through the tax exclusion ($200 billion) minus the cost of the individual mandate in Table 5 ($120 billion), because the removal of the employer exclusion significantly erodes the employer-provided insurance base. Whereas employer-provided insurance fell by only 7 million before removing the exclusion, it now falls by 24 million, or 15% of the base, when the exclusion is removed as well. Of course, with the individual mandate, this is simply a shift of insurance coverage from employers to the new pooling mechanism. Indeed, the cost per dollar of insurance provided is negative, since the government saves money yet provides insurance.

Of course, such a policy would have enormous distributional consequences, as the spending would be targeted to the lower parts of the income distribution, while the higher taxes would be borne by higher income groups. In fact, while there would be substantial gains for

[18] This estimate understates the total gain in revenues from removing the tax exclusion because it does not count the revenues collected on employer-provided insurance to retirees.

those below 2 times the federal poverty line, there would be losses at 3 or more times the federal poverty line; median income in the U.S. is between 3 to 4 times the poverty line depending on family structure. Thus, such a policy would be a net loser for more than half the families in the U.S.

The surplus revenue of $50 billion can be used to reduce the net losses from the proposal experienced by those with income above about three times the poverty line. For example, these funds are sufficient to provide a credit equal to $380/individual and $950/family for those between 300% and 400% of the poverty line, falling to $120/individual and $340/family for those between 400% and 500% of the poverty line. The final column shows that adding such a credit would lead to no net losses between three and four times poverty, and would reduce by 25% the losses between four and five times poverty. Thus, by recycling revenues, we could finance universal coverage in the U.S. in a way where there are net gains to all income classes below median incomes in the U.S.

Part VI: Conclusions

There is a standard health policy joke that goes like this. Health policy expert X dies and goes to heaven. When there, he is greeted by God himself, and the Lord says that the health expert can ask one question of Him before entering heaven. The health expert chooses to ask God "Will we ever have universal health insurance coverage in the United States"? To which God answers "Yes, but not in my lifetime".

This joke summarizes the prospects that policy experts see for universal health coverage

in the United States. Over the past few years, however, significant coverage expansions have started to percolate up from the U.S. states. Maine's "Dirigo" program, enacted in 2003, gained national attention for its bold structure and large subsidies to individuals and employers. More recently, the state of Illinois announced plans to cover all uninsured children in the state. Most dramatically, the state of Massachusetts recently enacted legislation that transforms the nature of the insurance market, subsidizes a large share of the low-income population so that they can afford health insurance, and mandates that all residents be covered by health insurance. This is truly a comprehensive reform that brings the state as close to universal coverage as anywhere in the United States. This effort is being replicated in other states, most notably in debates in California.

These recent episodes have brought the issue of the uninsured back to the forefront of policy debates in the U.S. In this article, I have reviewed the issues that must be addressed as policy makers consider further expansions in insurance coverage at either the state or national level. There are many routes to expanded insurance coverage in the U.S., and economic analysis has a lot to offer in terms of guiding us towards the correct path.

Of course, this essay has focused on only one of the two major problems facing the U.S. health economy. The other is the rapid rise in health care costs. Health care spending has more than tripled as a share of GDP since 1950, and by current projections will reach almost 50% of health care over the next 75 years (Congressional Budget Office, 2007). What has driven this rapid rise in health care costs? A large health economics literature has studied this question, and the general conclusion is a simple one: the rapid rise in health care costs has been driven by

quality-improving technological change.

The focus of the current article (as well as most recent policy proposals) is to focus on covering the uninsured, and to pay only lip service to fundamental cost control. This is by design. The solution to problems of low insurance coverage is clear, and there is an emerging consensus path to addressing this concern in a politically feasible fashion. But the science of cost control is much less advanced, and at this point we have no way to fundamentally control health care costs which does not deny American consumers (and their health providers) care that they value.

Measures that are being discussed today under the guise of cost control are very modest. Initiatives such as medical electronic records, increased preventive and maintenance care, and reduced medical errors will at best reduce health care costs by only a few percentage points, and are just as likely to raise costs (with increasing quality). With health care costs rising at 7-10% per year, this is not enough. To fundamentally control health care costs we need to actually be willing to deny care that does little for health – but which consumers now want. This would be accomplished either through government technology policy, medical standards, or global provider budgets.

There remains considerable controversy, however, over the appropriate level of such government interventions – or whether they are necessary at all. Some argue that past health care spending advances are well justified by improvements in population health (Cutler, 2004). Others argue that there are huge variations in health care practices across the U.S. with no

tangible benefits (e.g. Skinner, Staiger and Fisher, 2006). These two views are not mutually inconsistent: the first speaks to the average value of medical care over time, the second to the marginal value of additional health care at a point in time. But until we can resolve these discrepancies and understand more fully which health care spending is justified and which is not, we are not prepared to take on the American public on cost control. The fundamental insight of this round of reform is therefore to not hold the attainable goal (universal coverage) hostage to the (currently) unattainable goal, fundamental health care cost control.

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Table 1: Non-Elderly Americans' Source of Health Insurance Coverage

	People (Millions)	Percentage of Population
Total Population	260.0	100.0%
Private	179.4	69.0%
Employment-based	161.7	62.2%
Individually purchased	17.7	6.8%
Public	45.5	17.5%
Medicare	6.5	2.5%
Medicaid	34.9	13.4%
TRICARE/CHAMPVA	7.1	2.7%
Uninsured	46.5	17.9%

Table 2: Nonelderly Population With Selected Sources of Health Insurance, by Family Income

Family Income	Total	Employment -Based Coverage	Individually Purchased	Public	Uninsured
		Population (Millions)			
Total	260	161.7	17.7	45.5	46.5
Under $10,000	20.5	2.2	2.1	9.5	7.3
$10,000-$19,999	22.8	4.9	2.1	9.1	7.8
$20,000-$29,999	25	9.8	2	6.8	7.6
$30,000-$39,999	25.6	13.4	1.9	5.5	6.1
$40,000-$49,999	23.4	15	1.6	3.6	4.5
$50,000-$74,999	48.9	36.6	3	5.2	6.4
$75,000 and over	93.8	79.9	5	5.7	6.7

Table 3: Public Insurance Expansions as a Benchmark

Policy	Expand to 100% of Poverty	Expand to 185% of Poverty
Changes in Population (Millions of Persons)		
Uninsured Takeup	5	11
Uninsured Share of Takeup (%)	84%	78%
Uninsured Increase	0	1
Net Decrease in Uninsured	5	10
Net Change in Employer Insured	-1	-3
Net Change in Non-group Insured	-1	-1
Net Change in Publicly Insured	6	14
Costs ($2006 Millions)		
Total Cost Per Year	$26,000	$47,000
Cost Per Newly Insured ($)	$5,000	$9,000
Targeting		
Average Age of Newly Insured	38	37
% of Newly Insured in Fair/Poor Health	21%	17%
Average Cost of Newly Insured	$5,400	$4,700
Spending Per Dollar of Insurance Provided	$0.93	$0.99
Distribution of Federal Spending Benefits (%)		
<100% Poverty	100%	54%
100 - 200% Poverty	0%	46%
200 - 300% Poverty	0%	0%
300 - 400% Poverty	0%	0%
400 - 500% Poverty	0%	0%
> 500% Poverty	0%	0%

Table 4: Non-group Credits

Targeting	Tight (15-30k/30-60k)		Loose (25-50k/50-100k)	
Target	5 Million	10 Million	5 Million	10 Million
Credit Amount	$2500/ $6250	$6000/ $15000	$2200/ $5500	$4300/ $10750
Changes in Population (Millions of Persons)				
Uninsured Takeup	7	13	9	16
Uninsured Share of Takeup (%)	44%	49%	37%	40%
Uninsured Increase	2	3	4	6
Net Decrease in Uninsured	5	10	5	10
Net Change in Employer Insured	-5	-10	-11	-20
Net Change in Non-group Ins.	12	22	17	32
Net Change in Publicly Insured	-1	-2	-1	-2
Costs ($2006 Millions)				
Total Cost	$22,600	$61,500	$29,300	$79,100
Cost Per Newly Insured ($)	$4,400	$6,100	$5,900	$7,900
Targeting				
Average Age of Newly Insured	27	28	27	29
% Newly Insured Fair/Poor Health	5%	7%	5%	6%
Average Cost of Newly Insured	$2,400	$2,700	$2,400	$2,700
Spending Per $ of Insurance	$2.35	$2.50	$4.01	$3.67
Distribution of Federal Spending Benefits (%)				
<100% Poverty	29%	27%	17%	16%
100 - 200% Poverty	48%	45%	33%	32%
200 - 300% Poverty	20%	22%	29%	29%
300 - 400% Poverty	3%	5%	14%	15%
400 - 500% Poverty	0%	0%	5%	6%
> 500% Poverty	0%	0%	2%	2%

Table 5: New Pool with Subsidies and Changed Tax Exclusions

Tax Exclusions	None	None	Eliminate All	Distributionally Neutral
Individual Mandate	No	Yes	Yes	Yes
Voucher	Yes	Yes	Yes	Yes
Changes in Population (Millions of Persons)				
Uninsured Takeup	25	33	34	34
Uninsured Share of Takeup (%)	48%	53%	43%	43%
Uninsured Increase	2	0	0	0
Net Decrease in Uninsured	23	45	45	34
Net Change in Employer Insured	-16	-7	-24	-24
Net Change in Non-group Ins.	-7	-7	-7	-7
Net Change in Publicly Insured	-7	-3	-3	-3
Net Change in New Pool	53	62	78	78
Costs ($2006 Millions)				
Total Cost	$101,900	$124,100	($50,000)	($14,500)
Cost Per Newly Insured ($)	$4,400	$2,700	($1,100)	($400)
Targeting				
Average Age of Newly Insured	32	31	31	31
% Newly Insured Fair/Poor Health	10%	10%	10%	10%
Average Cost of Newly Insured	$3,400	$3,400	$3,400	$3,400
Spending Per $ of Insurance	$1.10	$0.81	($0.33)	($0.10)
Distribution of Federal Policy Benefits ($B)				
<100% Poverty	$50	$63	$63	$63
100 - 200% Poverty	$39	$49	$43	$43
200 - 300% Poverty	$14	$20	0	$0
300 - 400% Poverty	$1	$2	($28)	$0
400 - 500% Poverty	($1)	($0)	($28)	($21)
> 500% Poverty	($3)	($2)	($87)	($87)