WHY ARE SO MANY AMERICANS UNINSURED?
A CONCEPTUAL FRAMEWORK, SUMMARY OF THE EVIDENCE, AND DELINEATION OF THE GAPS IN OUR KNOWLEDGE

Linda J. Blumberg, Ph.D.
The Urban Institute

Len M. Nichols, Ph.D.
Center for Studying Health System Change

Section 1. Introduction

Numerous data sets are available which allow us to count and describe the socio-economic characteristics of the uninsured in the US. While these data differ on precise estimates, by all accounts the number of uninsured is large (around 40 million in the best of economic times) and prone to grow, both in absolute terms along with the population and as a percentage of the population when the economy weakens.

There is some dispute about whether the widespread lack of insurance is a market failure that justifies policy intervention, and we address this issue in our theoretical discussion below. There is less controversy about the substantial body of research which demonstrates that the uninsured have reduced access to care.[1] Many researchers have also concluded that the uninsured often have inferior medical outcomes when an injury or illness occurs.[2] Regardless of final analytic judgments about causation between health insurance and health outcomes or health status, few dispute that many individuals cannot afford necessary health care on their own, and thus at least since the mid-1980s (when the last large Medicaid expansions were enacted), policy makers have debated, not whether, but how best to enable more Americans to pay for needed health care services. This question inevitably leads to discussions of how best to expand access to health insurance coverage.

The purpose of our paper is to describe some of what economic research can and cannot (yet) offer policy makers who are concerned about reducing the number of

---

[1] Cunningham, PJ and P. Kemper. "Ability to Obtain Medical Care for the Uninsured,." *Journal of the American Medical Association* v. 280 # 10 (September 9, 1998): pp. 921-27.
[2] The complex issue of causation between health insurance and health outcomes is addressed by Helen Levy and David Meltzer in this volume.

uninsured. We focus on a deceptively simple question: What do we know about why so many non-elderly Americans are uninsured? The detailed answers are as varied as the sub-populations within our multifaceted health care delivery and financing "system." This means that identifying the causes requires reviewing institutional realities within the many different avenues to coverage.

Unlike other industrial nations, the United States does not compel any individual to have comprehensive health insurance, and thus even if a particular person has more than one option for obtaining coverage, each option is associated with a choice and an opportunity cost of taking it. For some, these opportunity costs can be substantial. For others, barriers related to risk segmentation and other characteristics of insurance markets make some options prohibitively expensive or even inaccessible at any price.   We will explore these costs and barriers in some detail. But it is important to recognize that individuals' own preferences for risk bearing are also key factors in the way they identify and choose among options.

This paper explores the reasons why demand for health insurance varies so much across individuals, why some with high demand are able to find arrangements with the lowest effective prices, as well as why some with high demand face barriers they cannot overcome in the absence of policy intervention.   Section 2 develops a theoretical and conceptual framework for why some individuals are uninsured. Section 3 reviews the employer-based health insurance options and the supply and demand issues associated with them. Section 4 describes the public insurance options available to the non-elderly, their limitations and reasons why enrollment is less than 100 percent of eligibles. Section 5 describes the private non-group market and the particular risk segmentation issues

which dominate its character. Section 6 concludes with a summary of remaining research questions and data needs.

Section 2. The Theory of Demand for Health Insurance

2.1 Theoretical Framework for Private Demand for Health Insurance

The standard economic theory of behavior under uncertainty is well known; risk averse individuals will pay to avoid severe financial consequences of the "unfortunate" state of the world. In some markets, that willingness to pay to avoid risk leads to the existence of contingent contracts, or insurance markets. In the health insurance context, the "unfortunate" state of the world can be described as the event of illness or fear of illness serious enough to require an individual or family to pay the full cost of necessary and efficacious medical care solely out of current income or wealth. Risk averse individuals facing actuarially fair prices will fully insure, but with unavoidable loading costs in the real world, individuals prefer incomplete insurance. The optimal degree of coverage in the face of loading costs is increasing in the degree of risk aversion.

One's degree or intensity of risk aversion to not having health insurance can be reasonably posited to depend upon wealth (W), because the potential financial loss from catastrophic illness is increasing in wealth, although after a very high threshold level of wealth is reached, risk aversion may decline again; education (ED), because more educated people know the consequences of not having insurance, they know the likelihood of appropriate health care being efficacious, and they also may have more confidence that they can obtain efficacious care within any insurance and delivery system; income (Y), because financial protection -- both of wealth and of current income

or consumption streams -- is a normal good; family status (FS), since parents and married partners may be more likely to seek coverage for family members whom they care about and/or for whom they feel responsible; other access to insurance (OTHER_ESI, ELIG), since the value placed on any particular insurance option may be different if one is married to a worker whose employer offers coverage, or if some family member(s) is(are) eligible for public insurance; health status (HS) of everyone in the family; perceived risk (RISK) to health status, increasing in age and other sometimes observable clinical factors which we summarize with α, so that RISK = RISK(age,α); gender (SEX), since men and women have different health use profiles; and then, contingent on a health shock that requires an intervention, one's aversion to the risk of illness also depends upon expected expenditures (EX) and the variance of possible expenditures (σ_{EX}). These expenditure functions depend upon the quantity (C) and quality (q) of medical care that may be necessary (and efficacious) as well as the expected price of each unit of that medical care (PC). Note, when it comes to risk aversion and demand for health insurance, the expected value of necessary medical care is not more important than the variance of that potential demand or need for medical care, i.e., the upper bound of potentially required medical care affects demand. In other words, the first *two* moments of the health services utilization and expenditure distribution matter, *a priori*, to insurance demand.

We find it useful to think about an individual's demand for health insurance having two classes of arguments: those that reflect influences on the subjective value of insurance coverage per se, and those that determine the net price to the consumer. From the above, one may summarize the value of a particular package of health benefits, $V(B_i)$,

as:

$$V(B_i) = V(W, ED, Y, FS, OTHER\_ESI, ELIG, HS, RISK, SEX, EX(C,q,PC), \sigma_{EX}).$$

Let the price of health insurance (to the individual) be P*. Health insurance demand for a particular package of benefits is then:

$$HI^d = 0 \text{ if } V(B_i) < P^*,$$

$$HI^d > 0 \text{ if } V(B_i) \geq P^*.$$

Thus we have the truism, people will be uninsured if the value to them of the insurance benefit package they can buy is less than the price they have to pay. We also note the obvious that those which value health insurance the most are likely to buy the most of it, conditional on a given price. This concept of V(B) is similar to Pauly and Herring's notion of reservation price for health insurance (Pauly and Herring, 2002, forthcoming), and V(B) – P* is similar to consumer surplus.

An interesting feature of health insurance markets is that some of those with the highest V(B) are also those most likely to make choices -- such as seeking jobs from employers that offer health insurance -- that lead them to find the *lowest* prices of health insurance (P*). Thus purchasers of insurance are likely to obtain substantial consumer surplus. Other people with high demand – say those who expect to be very sick – are unable to work. They often either qualify for public programs or end up facing very high prices in the private non-group insurance market, and sometimes can find no one willing to sell insurance to them at any actuarially fair price.[3] Therefore, it is difficult to sustain the interpretation that observed prices paid in health insurance markets reflect equilibrium marginal subjective values of having health insurance.{my argument is that

---

[3]Pollitz K, R Sorian, and K Thomas, "How Accessible is Individual Health Insurance for Consumers in Less-Than-Perfect Health?" Report to the Henry J. Kaiser Family Foundation, June 2001.

buyers have CS, so nobody's marginal utility is revealed in these markets. I inserted a new CS sentence above}.

The arguments in our expressions of health insurance demand are useful for general expressions of demand, but we also need to make clear that some eligible people do not enroll in insurance even though the monetary cost is zero . This would not seem possible from our characterization of health insurance demand. The important point is that P* in our framework represents more than just monetary cost. P* includes time cost and any disutility from an enrollment process that is perceived as burdensome or embarrassing (e.g. some say a kind of stigma is associated with Medicaid since it was for so long associated with people on cash assistance). We explain more in section 4 what is known about the ways P* exceeds zero for various public insurance programs with zero nominal fees.

2.2 Socially Optimal Levels of Health Insurance

Does the fact that some choose not to purchase health insurance mean that there is a market failure?

There are three distinct analytic arguments against interpreting uninsurance as a market failure that justifies government intervention. First, the benefits of most health care services, as opposed to immunizations against communicable diseases which are administered free of charge by public health departments – are private, with no substantial positive externalities. Second, much of health care is routine or at least predictable, and thus does not result from an unforeseen catastrophic event. Routine health care consumption is not insurable in the strict meaning of the term as used within the economics of uncertainty, and should not be construed as under-consumption of true

insurance for catastrophic events. The latter is under-consumed only if there is no well-developed market for catastrophic insurance products which are priced in an actuarially fair manner. Third, the existing tax subsidy for employment-related health insurance – exempting employer premium payments from employee income and payroll taxes – has led to *too much* health insurance being purchased and therefore if anything the number of uninsured Americans is too low on strict efficiency grounds.

Except in the cases of children, the elderly, the severely disabled, and low income pregnant women (which is derivative from the social concern for children), it is difficult to argue that most Americans feel much positive externality from other people's consumption of health care services. But for these groups external effects are felt, and thus we observe substantial public spending on the Medicaid and Medicare programs. On the other hand, since hospitals are generally required to stabilize patients that need emergency services before discharging them, society has exhibited a desire to make sure people do not die if provider capacity and ability permits, regardless of ability to pay. This can be interpreted as an externality or social willingness to pay for catastrophic care to be available to all. This willingness is financed through an implicit tax on hospitals in the form of service provision requirements. The cost of these requirements is borne by paying (insured) patients through higher prices for their care and by some governments directly. General altruism also exists and is manifested in private charitable contributions to hospitals and even primary care clinics on behalf of those who are unable to pay.

Other more subtle arguments that uninsurance is a market failure include the notion that inefficiencies result from health care systems which are forced, without adequate funding, to treat disproportionate numbers of uninsured patients. Because they

have to devote so many resources to securing payment and performing appropriate triage, these systems have higher total costs per patient than others. Finally, some low wage uninsured workers might be more productive if they and their family members had health insurance, but employers cannot reduce their wages enough to pay for coverage, due to minimum wage constraints.

It is certainly true that much health care is predictable, and that a market for catastrophic health insurance products exists. It is also likely that the larger market failure here is related to income distribution: the seriously ill often cannot afford to pay actuarially fair prices for health insurance priced for them alone, and the chronically ill cannot afford to finance their needs. But as we will discuss in the section on non-group insurance, the market for individual insurance does not function very efficiently for those in less than perfect health, and risk averse insurers erect many barriers to sales that may be inefficient in the aggregate. At the same time, some healthy people may systematically underestimate the probability they will become seriously ill. This may lead to a kind of information market failure in under-consumption of insurance, which translates into a free rider problem when they get sick while being uninsured. The free rider problem results from the fact that at least a minimum amount of medical care (say, for stabilizing one's condition) will likely be forthcoming at no cost to the uninsured low-income person. Under certain circumstances, however, it may be much more efficient to provide insurance for preventive and monitoring services that reduce the likelihood of later catastrophic health events and outcomes (e.g., extremely premature birth).

It is difficult to evaluate the argument about moral hazard from the "overly generous" current tax subsidy. The subsidy does lead to more generous policies being

purchased by workers who work for firms that offer. But it strains credulity to argue that the number of uninsured is therefore too *low*. It seems more likely that those with insurance have overly generous policies, and this may in the aggregate bid up the price of all medical services, which makes it even more difficult for the lower income uninsured to afford coverage.

But relatively few observers think most medical service markets are perfectly competitive. That is, health providers often have some kind of local monopoly power, temporarily counterbalanced by managed care but now returning with a vengeance in many markets[4] (HSC provider pushback paper). Consequently, more generous insurance packages resulting from the tax subsidy may actually work to counterbalance the inefficiently low levels of coverage that would exist under the unsubsidized monopolistic market.

On balance, then, we think that while it is ultimately an empirical question, there is a reasonable probability that subsidized coverage expansions could improve the efficiency of the overall resource allocation. Just as perfect price discrimination by a monopolist can be welfare enhancing compared to a typical single price equilibrium, altering the status quo health insurance price structure based on elasticity of demand could increase coverage and enhance welfare as well.

To put the motivation for analyzing why people are uninsured into an efficiency framework, consider Figure 1. Let C be the marginal cost of coverage, which is shown as constant for simplicity. P(Q) is the private demand curve for insurance. The current tax subsidization of employer-based insurance reduces the price of health insurance to

consumers to P_o, with Q_o being the number of persons insured through employer coverage, more than the Q_h that would be covered without the subsidy.

S(Q) reflects the net positive externality that higher coverage confers on the society at large. We infer -- from the roughly $100 billion dollar federal tax expenditure the US makes each year to subsidize employer sponsored insurance and all the arguments discussed on pp. 7-10 -- that the social value of coverage is larger than the private value of coverage at least for the middle class and working class. We infer from Medicaid that the social value of coverage is also greater than the private value for the low income population. In this context, ending the current tax subsidy would be akin to "raising" the price to the currently insured -- from P_o to C. If this were done, the savings to the government could then be used to finance a larger per person subsidy for those individuals with low willingness to pay, presumably because they are currently income-constrained. As drawn, this redistribution would enable us to move closer to a socially optimal level of coverage, Q_L. Such a re-directed subsidy may or may not be large enough to induce coverage among all of those uninsured at price C, but it should be able to subsidize a level of coverage which improves welfare by moving us in the aggregate between Q_O and Q_L.

Some portion of those who are covered under the current system, but who would lose coverage due to the elimination of the current tax subsidy (represented by $Q_o - Q_h$) may not receive enough of the re-directed subsidy to induce them to continue purchasing coverage. If this was indeed the case, we would still not have a first best scenario

---

[4] Mays, G, S. Trude, L. P. Casalino, P. Lichiello, A.C. Short, and A. Benoit. "Hospitals Profit from Aggressive Negotiations," Center for Studying Health System Change, *Community Report # 10,* Summer 2001 (http//http://www.hschange.org/CONTENT/333/?topic=topic07).

although, as noted above, the new state would likely be a social welfare improvement relative to the current system.

It is of course impossible to know what the optimal level of coverage is, since $S(Q)$ cannot be precisely identified. Our fundamental point is that it is at least possible and to our minds plausible that net social welfare could be enhanced by rearranging our current health insurance subsidy structure. Specifically, we could improve welfare by subsidizing to a greater degree insurance purchases by the lower income population and by reducing the mostly pecuniary subsidies flowing to higher income (and low elasticity) purchasers of health insurance. The greater the disparity between the elasticities of demand between low income and high income, the greater the coverage expansion and welfare enhancement, for a given redistribution of the current system subsidy CP_o. This is why it is crucial for policy analysts to estimate the elasticity of demand correctly for different subgroups of the population. In order to estimate Q_L exactly we would need to know the elasticity of $S(Q)$ which is clearly unknowable. However, to move toward Q_L from the status quo (assuming we agree qualitatively that $Q_L > Q_o$), we only need to know the relative elasticities along $P(Q)$ and to have the power to adjust prices through policy changes at the margin. This is why we put so much emphasis on elasticity estimation in the remainder of this essay.

2.3 Determining the Price of Health Insurance

Even abstracting from time and disutility costs, the price of health insurance is among the most complex phenomena in all of economics. On the one hand, the price of one dollar of insurance has long been interpreted as the administrative load.[5] The load is

---

[5] Pauly, Mark V. 1997. *Health Benefits at Work: An Economic and Political Analysis of Employment-based Health Insurance*. Ann Arbor: University of Michigan Press.

the percentage markup on expected medical costs required by insurers to cover the costs of selling and administering an insurance contract in a world of heterogeneous health risks, provider quality, and provider cost. Thus, any premium for a particular risk class, k, is $P = E[C*q*PC](1+L)$, where L is the loading factor and E[ ] is the expectations operator.[6] Competition among insurers keeps L as low as possible, but they range from 5 - 40 percent in different markets.[7]

We agree that the load is the appropriate concept of the price of insurance, and actually is the right price of insurance to use operationally *if* the individual expects to incur expenses of $E[C*q*PC]$ in the absence of insurance, i.e., if the actuarial value of the insurance contract equals what the individual expects to spend. In this case the person is paying for the convenience of having the insurance company pay bills they would have expected to pay themselves in the absence of insurance, as well as the promise to protect the individual financially if uncertain health care needs turn out to be much greater than expected. But all insurance contracts, even in the non-group (or individual) market, pool somewhat diverse people with quite different health risks and expectations. These contracts typically charge all policyholders in the same pool the same price which reflects average expected $C*q*PC$ among all the particular pool's (or sub-population group's) members.

In real life, most individuals in the group would have expected expenditures below the mean, and a few individuals in any group may have expected expenditures well above the group mean. Most individuals in any insurance pool expect to and do spend less than the actuarial value of the policy in any given year, but they go ahead and buy

---

[6] The assumption is that quality "q" works like an index, such that higher q is equivalent to higher C and can be priced per C*q unit at PC.

the policy because they are risk averse and wish to be protected in the unlikely event they become truly sick.[8] They might buy a more parsimonious policy if they could find it, but transactions costs and economies of scale limit the degree to which insurance contracts can be tailored to individual expectations and health risks.[9] Thus, most people are paying a price for insurance well above the load, and some are paying less. The optimal amount of insurance is not likely to be available to every person, if indeed it is available for any person.

So how should the price of insurance be conceived? The first point is to note that because of transactions costs, administrative economies of scale, and the high cost of one hospitalization and attendant ambulatory visits, $1 insurance contracts are not written. In fact in most markets, partially due to state mandatory benefit laws, minimum actuarial value health insurance contracts are quite large and lumpy. (Typical prices of insurance packages today are over $2,500 for singles and over $6,800 for families). This means that the opportunity cost of purchasing health insurance at all -- as opposed to the cost of one more dollar of coverage on the margin -- can be quite high. We think of this opportunity cost of purchasing insurance vs. not purchasing -- the market value of goods in the consumption bundle that must be foregone if insurance is obtained -- as the appropriate price of health insurance. This opportunity cost, of course, is equal to the premium, or at least the fraction of the premium the individual must actually pay, directly or indirectly.

---

[7] Hay-Huggins, 1988.
[8] Monheit, Alan C., Len M. Nichols and Thomas M. Selden. 1996. Winners and Losers in the Employment-Related Health Insurance Market: How Are Net Health Benefits Distributed? *Inquiry* 32(4).
[9] Newhouse, 96/8.

But the net price of insurance to any particular consumer is even more complex than the opportunity cost of other goods that must be sacrificed to buy the lumpy insurance contract. For the actual net price is in some ways endogenous to the consumer's choices, even though exogenous conditions may set many of the constraints under which the consumer makes those choices. The five key choices can be thought about in sequence: (1) to work or not; IF WORK: (2) to be self-employed or an employee of a firm; IF AN EMPLOYEE: (3) to work for a large or a small firm that offers health insurance or not; IF WORK FOR A FIRM THAT OFFERS: (4) to take that insurance or not; IF NOT WORK, or self-employed, or work at a firm that does not offer health insurance: (5) to purchase non-group insurance or not. We describe how each of these choices leads to a different net price of insurance below.

Overlaid on all these choices for some low income workers (typically less than 200 percent of the federal poverty level, but in some states even higher income cutoffs are in place) is the possibility that they or some of their family members may be eligible for Medicaid or some other public program, like SCHIP, the State Children's Health Insurance Program (which is administered by states with mostly federal financing). In this case, at every appropriate juncture in the decision tree outlined above, if eligible, adults have to decide if they want to enroll themselves, their spouses, or their children in the public program. Once the Medicaid/public eligibility determination and enrollment decision is made, they can then make a fully informed decision regarding private insurance purchase.

Each of these private choices -- or the fact of Medicaid eligibility -- will alter the net price of insurance to any given consumer. Medicaid and in most cases SCHIP have

zero or low prices to those who are eligible (though a non-zero price may not seem low to a low-income family), and an infinite price to those who are not. Often this means children, or a woman while she is pregnant, may be enrolled in a public program at no cost[10] while other adults -- and sometimes older children[11] -- face buying any insurance they want for themselves in the non-group market. Perhaps surprisingly, but indicative of deeper forces at work in health insurance demand, millions of people who are eligible for free public insurance do not enroll. Of course, some workers decline zero out-of-pocket premium ESI plans so it is not just Medicaid eligibles who refrain from taking up "free" insurance.[12] One reason low income workers decline "free" ESI is because deductibles and co-pays are perceived as onerous compared to the free care they may be able to obtain in clinics or public hospital outpatient departments. This rationale could also be important for lower-than-expected enrollment in some Medicaid and SCHIP programs with co-payments as well.[13] Note, the availability of free health care lowers PC to near zero (waiting and travel time may still be non-trivial), and this lowers the demand for health insurance, *ceteris paribus*. We discuss what is known about possible reasons behind the decision to decline public insurance in section 4.

Except for the self-employed, participants in the non-group market are not subsidized by any government. Furthermore, in most states, insurers are allowed to

---

[10] It is useful to remember that low income pregnant women are guaranteed eligible only for pregnancy related services, not comprehensive health care typically associated with the Medicaid benefit package. Their limited Medicaid eligibility expires one month after giving birth.

[11] The SCHIP program has subsidized states who wish to, to equalize eligibility thresholds for children of all ages. Medicaid mandates alone left infants, toddlers, pre-adolescents, and adolescents eligible at different income levels across the states.

[12] Chernew M, K Frick, and CG McLaughlin. 1997. The Demand for Health Insurance Coverage by Low-Income Workers: Can Reduced Premiums Achieve Full Coverage? *Health Services Research* 32(4).

[13] Dubay, Lisa, Genevieve Kenney and Jennifer Haley. Forthcoming. "Medicaid and SCHIP Programs for Children: What Do We Know About Participation?" Washington, DC: The Urban Institute. *Assessing the New Federalism* Policy Brief.

adjust premiums -- or the willingness to sell altogether -- to individual health status and

other personal characteristics of those seeking non-group coverage. In this way, elements

of an individual's demand function affects supply prices relevant to them. At present we

do not know if the offer price gradient associated with health risk -- for example, imagine

a premium table arrayed by age group -- has the same slope as the willingness to pay

gradient that is associated with the same risk factor. We do know that both influences

serve to increase the premiums older Americans will face. Empirical difficulties in

teasing out actual demand elasticities, given this complexity, will be discussed in section

5. Recall that transaction costs prevent truly individual custom prices, since collection of

accurate health status information is expensive. Rather, insurers use individual

characteristics to classify applicants into similar subgroups, and each member of the

subgroup is quoted the same price. Non-group insurers may be expected to have many

subgroups, which we also discuss in some detail in section 5.

Since 1986, the unincorporated self-employed have been given a partial federal

tax deduction on premiums. As a result of this tax break, the self-employed are more

than twice as likely to purchase non-group insurance as the other non-group candidates.[14]

This disparity is likely to increase as the self-employed deduction is increased to 100% in

the next few years.

Group insurance -- mostly employer-sponsored insurance -- provides a number of

price advantages for consumers. First there is the federal income and payroll tax

---

[14] Blumberg, Linda J. and Len M. Nichols. 2000. "Decisions to Buy Private Health Insurance: Employers, Employees, the Self-Employed, and Non-working Adults in The Urban Institute's Health Insurance Reform Simulation Model (HIRSM)." Final Report to DOL/PWBA pursuant to contract J-9-P-7-0044.

exemption for "employer" premium payments on the worker's behalf.[15] There is some

dispute -- in practice if not in theory -- about how much of this employer premium

payment is extracted from wages, and if any, whose wages. We return to this issue below

and in some detail in Section 3. But the basic point is that if we let "t" represent an

individual's marginal income tax rate plus the employee's payroll tax rate, the degree of

this tax subsidy is the product of the employer share (s) and "t," or "st." If an employer

pays 100 percent of the premium, the subsidy rate is equal to "t." Thus it is clear that

higher income workers with higher "t" receive greater tax subsidies through their

employers than do lower income workers, even given the exact same employer payment

levels.

The second price advantage of group insurance results from administrative

economies of scale in comparison to non-group purchase. These are due to largely fixed

costs of administering enrollment and plan/provider screening activities, which can be

spread over more employees the larger the firm. Similar economies of selling and

administering on the part of group insurers enable them to offer health benefit packages

with lower loads as group size increases. Finally, due to the law of large numbers, the

variance of expected health care costs decreases with group size, so that there is a kind of

risk pooling economy of scale that accrues only to groups, and in greater degree the

larger the group.

Each of the three price advantages for group insurance is large, since the average

income plus payroll tax rate is about 30 percent, administrative loads can be 25-30

---

[15]Many states exempt this "in kind" income from state taxes as well, since they use federal definitions of AGI as their starting point of state income tax liability calculations.

percent lower for group insurance products[16], and the risk premia required for very small

groups or individuals often exceed 15 percent.[17] Note, the price advantages for large

firms can be substantial vis a vis small firms (< 50), as well as vis a vis individuals trying

to buy in the non-group market. In practice, observed price differentials across the

different markets -- individual, small group, large group -- are less than what is implied

by these various differences because purchasers in the small group and non-group

markets typically buy less generous packages than large firms. Controlling for benefit

package generosity is a serious empirical problem which we discuss in Section 3. But

controlling for benefit package generosity is essential if one is to use premiums as the

price of health insurance, for a premium without information about the benefit package is

insufficient information, in general, to make inferences about the relative generosity of

coverage being considered.

Another empirical problem is analogous to the non-group premium being affected

by the individual's demographic and health status characteristics (discussed above).

Firms with high percentages of older workers are likely to have strong demand for health

insurance, but they are also likely to have higher health care costs and thus be more

expensive to insure. So again, we see interactions reinforcing higher prices, but once

again we cannot know *a priori* if the demand gradient in willingness to pay is greater

than the supply price gradient based on cost. The supply price age gradient, of course,

may also be partially a function of how the price elasticity of demand for health insurance

is expected to vary with age. Structural form estimation is therefore crucial to derive

parameters useful for policy analysis, an issue we discuss at the end of this section.

---

[16] Hay-Huggins, 1988, op cit.

Next we write out the prices at the end of each decision tree / path above.   For those eligible for Medicaid or SCHIP or some other public program: $P^* = P^{mcd} = \varepsilon > 0.$. There are positive nominal premiums in some SCHIP programs, and they do deter enrollment, but most uninsured Medicaid and SCHIP eligibles face zero out-of pocket prices. Still, P^{mcd} is not zero, for time and hassle or stigma factors in the application process are non-trivial and are clearly burdensome enough to affect enrollment. At the same time, some people are not aware they are eligible for public programs, and thus for them, epsilon reflects search or transactions costs that are effectively infinite.[18]

For the non-self-employed who end up as candidates in the non-group market, i.e., those who do not work or who work for a firm that does not offer or does not make them eligible, the price of non-group insurance is: $P^* = P_k^{ng}$, where k indexes the risk pools or population subgroups believed to be similar by insurers in that market. These are typically organized by age, sex, health status, geography, and family size. Note that P_k^{ng} = expected average medical costs of members of subpopulation k *times* $(1+L^{ng})$, where L = the loading factor (including administrative plus underwriting and risk bearing costs) in the non-group market.

For the unincorporated self-employed, $P^* = (1-dt)P_k^{ng}$. The normal non-group premium is effectively reduced by the product of the percentage that is deductible (d) and the self-employed worker's income plus payroll tax rate. Current law is taking "d" upward from .25 to 1.0 between 1997 and 2003.

For workers who receive an offer from their employer, the net price of insurance is $P^* = (1-s)P_j^g + s(1-t)P_j^g\gamma$. This is the most complicated price, and the price relevant to

---

[17] Cutler D, "Market Failure in Small Group Health Insurance," Working Paper no 4879, National Bureau of Economic Research, Inc., Cambridge, MA, October 1994.

the majority of U.S. workers, since over 70% are offered health insurance by their own

employer. Recall that "s" is the employer share of the premium. P_j^g is the nominal total

premium in the group market, (expected average medical costs of members of group j

times $(1+L_j^g)$, where L_j^g is the load for the j-th group), t is the worker's income + payroll

tax rate, and γ is the fraction of employer payments on the worker's behalf that *the worker*

believes are actually extracted from that worker's would-be wages. Thus the first term

$[(1-s)P^g]$ is the worker's out-of-pocket payment for health insurance, and the second term

is the wage loss from employer premium payments $[s(1-t)P^g\gamma]$.[19] We discuss the various

arguments and implications of γ ≤ 1 at some length in section 3 below.

Empirical estimation problems that arise from our theoretical discussion

To summarize this section, we note that net prices of health insurance are affected

by, if not completely determined by, worker choices. This presents some obvious

econometric problems with traditional demand specifications. Interestingly, many

individuals with the highest demand for health insurance seem to undertake to obtain

access to the lowest possible prices for health insurance by working for firms that offer

health insurance. Thus, their quantity demanded is maximized vis a vis those with lower

risk aversion or demand who may end up facing higher net prices.

To simplify, we may write $HI^d = f(X,Z,P^*)$, where X and Z are both vectors of

variables that affect worker risk aversion and demand for HI (these are the right hand side

variables in the V(B) equation in section 2.1), and Z includes variables that affect demand

but not price (e.g., education and wealth). But $P^* = P^*(X,ID)$, where ID represents

---

[18] Dubay L and G Kenney, 2001, op cit.
[19] Employers may also set up an arrangement through which their employees pay their out-of-pocket share with pre-tax dollars, but, surprisingly to most economists, only about 25% of workers are in these plans, mostly because employers do no offer them.

identifying variables that affect insurers' offer Ps but not HI^d. Note that X variables -- e.g., age, health risk, family status, etc., -- influence both HI^d and P*.

There would seem to be two empirical solutions. One would be to estimate HI^d and P* as a system, and if appropriate Z and ID variables or instruments can be found, this is satisfactory. Alternatively, and this is the approach typically followed in the literature of an individual's demand for HI, one can use a P* measure that is believed to be somewhat exogenous to the worker's/individual's X vector or specific circumstances, and estimate HI^d directly. The potential bias and inefficiency in the estimated marginal effects of the X variables, as well as in highly policy relevant price coefficients and calculated elasticities, is a function of how appropriate these exogeneity assumptions turn out to be. Furthermore, in all empirical work on health insurance demand, there is considerable controversy over the best way to impute premiums to workers/firms who did not take/offer ESI. It is extremely rare to observe prices non-purchasers actually face. We examine these issues most closely in our discussion of the literature which follows**.**

Section 3. Employer Sponsored Insurance

Employer sponsored insurance is the most common form of health coverage for the non-elderly in the US. Sixty seven percent of the non-elderly had employment based insurance (either through their own employer or that of a family member) at some point in 1999, as did 73 percent of those who worked during the year.[20] However, 17 percent of workers (24.2 million) had no coverage of any kind during 1999, and 13 percent of children of workers (8.7 million) were also uninsured. Why have some and not other workers and their dependents obtained employment-based insurance?   Answering this question is the purpose of this section.

We begin with a brief description of the institutional options available for employer sponsored insurance, and then proceed to discussions of the employers' decision to offer ESI, the limits on workers' eligibility for enrollment, and workers' decisions to take-up an ESI offer.

3.1 Institutional Options for ESI

An employer interested in sponsoring a health insurance plan for its workers and their dependents has a number of options. The first is fully insured products for single employers (as distinguished from contracts written for groups of employers, discussed below). This option represents the purchase of an employment-based group health insurance policy from a licensed, risk-bearing carrier. There are many different types of licenses in each state, typically including Blue Cross Blue Shield (many of which remain non-profit), commercial, and health maintenance organizations (HMO). Within these

types, various products are made available, including indemnity plans, HMOs, preferred

provider organizations (PPO), and point-of-service (POS) options for HMO products.

Each insurer may offer multiple products (for example, a Blue Cross Blue Shield insurer

may offer a number of different indemnity products with different levels of benefits and

cost-sharing, and they may offer a PPO plan as well as a closed panel HMO). In fact,

commercial insurers and the Blues insure over 25 percent of HMO enrollees.[21] Fully

insured plans are subject to state regulation in addition to some federal regulation

(notably, the Health Insurance Portability and Accountability Act (HIPAA) of 1996).

Fully insured plans determine their premiums based upon the sum of expected

medical costs or claims, margin or reserve for higher than anticipated costs, expected

expenses (i.e., administration), and profit/contribution to surplus funds. Expected claims

are determined using the past experience of the insurer's group insurance business

(particularly for employers of a similar type), the past experience of the group itself, and

data from inter-company studies.[22] This means that employers with above average

claims experience in the past (those with sicker enrollees) and those employers of a type

(e.g., industry, size) that tend to have above average costs will face higher premiums.

The reliance of insurers on the claims experience of similar employers when setting

premiums effectively means that the insurers generally pool the risk of like-employers

over time to some extent, even in the absence of regulatory constraints..

Because of uncertainty about claims costs, insurers also include a protective

financial margin in the premium rate. This margin will vary with the size of the

---

[20]Census Bureau table HI01, http://ferret.bls.census.gov/macro/032000/hlthins/01_001.htm; March 2000
Current Population Survey, accessed 6/6/2001.
[21] Health Insurance Association of America, *Group Life and Health Insurance-Part A*, 5th Edition, HIAA,
Washinton, DC, 1994.

employer, since average claims for large groups are considerably more consistent over time than are the average claims of small groups. The expense/administration charge is generally calculated as a share of premiums, and decreases as a percentage as the size of the group increases, reflecting real economies of scale.

The second type of insurance option facing employers is to insure themselves or what is sometimes called "singly" self-insure. This option reflects the reality that firms can establish reserves and manage their own cash flow in such a way as to insure or indemnify their own workers against most health-related expenses. Federal law, the Employee Retirement Insurance Security Act (ERISA 1974), exempts employers from state insurance regulations as long as they are providing self-funded health insurance arrangements for their own workers. Self-insured employers are not exempt from the federal HIPAA law, however. Most employers self-insuring their workers choose to purchase "stop-loss" insurance from commercial carriers to protect themselves against very large losses. Stop-loss insurance policies have very large deductibles (called "attachment points") and are not regulated as are the typical commercial health insurance products. With the exception of the stop-loss component, self-insuring employers are effectively segmenting the cost of insuring their employees from the risk of workers in other insuring firms, which is difficult if not impossible to achieve completely when purchasing fully insured products from commercial plans, Blues, or HMOs. The variance minimizing efficiency of this arrangement increases with firm size.

---

[22] HIAA, pg. 150.

Consequently, the probability of self-insuring is much higher for large firms than for small. [23]

The third broad category of insurance options are those which allow multiple employers to enter into insurance arrangements together. These options include Multiple Employer Welfare Arrangements (MEWAs), multi-employer plans (Taft-Hartley plans), business coalitions, and health insurance purchasing cooperatives. A MEWA is an insurance arrangement that offers benefits to the workers of more than one employer. These were defined explicitly in amendments to ERISA which were passed in 1983.[24] A MEWA represents an agreement among employers alone — it is not collectively bargained by workers' representatives and multiple employers, as are Taft-Hartley plans. Legally, MEWAs can offer either self-insured plans or fully insured products. Regulation of MEWAs varies state to state, with some states treating them in the same way as the rest of the fully insured market, while others treat them more liberally than single-employer plans. MEWAs that are not fully insured are also subject to state insurance regulations as long as those regulations are not inconsistent with ERISA. MEWAs tend to be vehicles for small employers to pool together in an effort to segment themselves from the broader employer-based risk pool without having to take on as much risk as would be necessary under single self-insurance.

Taft-Hartley plans are defined and regulated by the 1947 Taft-Hartley Act, not by ERISA or the states. These plans are the result of collective bargaining agreements among multiple employers and their workers. These plans are particularly appropriate

---

[23] Acs G, SH Long, MS Marquis, PF Short, "Self-Insured Employer Health Plans: Prevalence, Profile, Provisions, and Premiums," *Health Affairs*, vol. 15, no. 2, pp 266-278, Summer 1996; Marquis MS and SH Long, "Recent Trends in Self-Insured Employer Health Plans," *Health Affairs*, vol. 18, no. 3, pp 161-166, May/June 1999.

when workers are employed by different employers in the same industry at different times throughout the year (e.g., longshoremen, construction workers, etc.). The boards of these plans are typically comprised of representatives of labor and management.

Purchasing cooperatives are entities that have been developed in a number of states, and they are generally designed to allow small employers to take advantage of economies of scale in purchasing similar to those enjoyed by large employers, thereby reducing prices and often increasing health plan choices for workers of small firms. [25] While some large employers participate in pooled purchasing arrangements, small employers are much more likely to do so.[26] Some cooperatives began with seed money and at times management provided by the state, while others are privately run. Purchasing cooperatives tend to be open to broad spectrums of employers (perhaps restricted only by size) and are oriented more towards increasing purchasing power and less toward segmenting risk. Business coalitions and other purchasing groups vary in terms of their openness to employers of varying risk, their boards' acceptance of conflict of interest rules, and whether they offer a choice of competing health plans.

Although these 3 groupings of insurance options and the multitude of plans which fall within these categories potentially provide many coverage options to employers and their workers, significant numbers of workers and dependents remain uninsured. Why is this the case? We summarize what is known, and what research questions remain by examining why some employers offer ESI to their workers while others do not; why

---

[24] Institute of Medicine, *Employment and Health Benefits*, National Academy Press, Washington DC, 1993.
[25] See the Institute for Health Policy Solutions website www.ihps.org, and its directory of consumer choice health purchasing groups.
[26] Long SH and MS Marquis, "Pooled Purchasing: Who are the Players?" *Health Affairs*, vol. 18, no. 4, pp. 105-111, July/August 1999.

some offering employers deny eligibility for ESI to some workers; and why some eligible workers decline to enroll in ESI and remain uninsured.

3.2 Why do some employers offer and others do not?

There are a number of reasons employers might make an economically efficient decision to offer insurance to their workers. We organize this section around those reasons, and then summarize the empirical literature which uses multivariate analysis to estimate the probability of an employer offering coverage. According to 1998 data from the MEPS-IC, 52.9 percent of private sector establishments offer health insurance to at least some of their workers. Offer rates vary dramatically by characteristics of the employer and its workers (for example, 96.7 percent of establishments of 1000 or more workers offer compared to 34.2 percent of establishments of fewer than 10 workers). The same data indicate that 87 percent of workers are employed by establishments which offer coverage to at least some of their workers. Since about 80% of workers who are offered take it, each firm's offer decision is the key to widespread coverage or its absence in a voluntary system like that in the US. In addition, one forecast approach suggests that offer rates will be more important than take-up rates in explaining near future declines in ESI.[27]

Prior to discussing the reasons why employers may offer health insurance, it is useful to review a theoretical framework of employers' offer decisions which was posited by Nichols et al. Given the assumption that employers care about health insurance only because workers do, the firm's demand must be derived through an aggregation of

---

[27] Acs G. and LJ Blumberg, "How a changing workforce affects employer-sponsored health insurance," *Health Affairs*, vol. 20 no. 1, pp. 178-183, January/February 2001.

individual worker demands.[28] Each worker's demand for health insurance (HI^{dw}) is a function of the net (relative) price of health insurance to the worker ($P*$) and her taste for health insurance, described above as $V(B)$. In symbolic format,

$$HI^{dw} = f(V(B), P*),$$

where

$$P* = (1-s)P_j^g + s(1-t)P_j^g\gamma.$$

Note that even for the same benefits and cost-sharing structure, P_j^g will be different if the employer chooses commercial insurance, self-insurance, or joins a multiple employer arrangement (e.g., MEWA). In each case, P_j^g is a weighted average of the group's own recent medical costs and the recent cost experience of similar groups with whom the group's risk is pooled. Insurance or risk pooling alternatives may be summarized with the nature of these weights (self-insurance is a special case in which the weight on the similar and larger pooled group is zero). The net price to the worker is equal to the premium price multiplied by the share of the premium that would be required as an out-of-pocket payment by the worker (s is the employer share of the group premium), plus the net reduction in wages the worker must accept in order to elicit the employer to sponsor coverage of that type. If wage incidence (γ) is 100 percent, then the employer extracts all health insurance costs from worker wages.

The probability of a firm offering health insurance to its workers, is expressed as:

---

[28] Nichols LM, LJ Blumberg, P Cooper, J Vistnes, "Employer Demand for Health Insurance: Evidence from the Medical Expenditure Panel Survey," paper presented at the 2001 American Economic Association Meetings.

Insurance Component

Φ(offer) = Φ(f(HI^{dw}), COMPETITION, FP). Here, f(HI^{dw}) is used to represent the distribution of the firm's many workers' demand for health insurance. Unfortunately, economists have yet to develop a satisfactory theory of how a firm actually aggregates the heterogeneous preferences of its workers. In pioneering work over 30 years ago, Goldstein and Pauly discussed this issue and developed two alternative mechanisms — the median voter/worker model and the average worker model.[29] Neither option has been satisfactorily proven empirically, and alternative theories clearly are possible. For example, the preferences of higher wage workers may receive disproportionate weight. There is some empirical evidence that supports the latter hypothesis, although further research in this area is clearly warranted.[30]

COMPETITION is the extent to which hiring workers of sufficient quality requires offering ESI, given the other labor market options in the same geographic area or industry. COMPETITION summarizes what one's labor market competitors are offering. Labor market competitors are not necessarily identical to their product market competitors, though product market competitors at some level must be competing for similar labor, though perhaps not in the same locale. COMPETITION is also likely to be a function of the wages of the workers employed by the firm, in that the nature of competition for low wage workers is likely to be quite different than that for higher wage workers.

FP is the price that the firm faces for health insurance. If wage incidence or γ is 100 percent, this price should be zero. The fact that firms act as if FP is not zero is yet more evidence that makes us think that $\gamma < 1$ for many firms and workers. If $\gamma < 1$, then

---

[29] Goldstein and M Pauly, 1967.

the premium the firm faces is the relevant price, as well as any administrative costs it must bear (that are not financed out of wage reductions). Once the premium is on the firm's radar screen, then premium variance or fear of premium variance over time is also relevant.

Reason 1: Employers' offer decisions reflect worker preferences. Without being able to describe a precise mechanism, it is obvious that workers with strong demand for health insurance, those for whom $V(B) >> P^*$, will prefer to work for firms that offer them the lowest P^*, *ceteris paribus*. Thus, firms with high percentages or critical masses of high income workers, older workers, married workers, higher educated workers, and workers in areas with high health care costs and/or few (acceptable) free care alternatives available, are more likely to offer health insurance. Note, these kinds of workers are most likely to be willing to pay for some if not all of their employers' costs of health insurance in the form of reduced wages. Conversely, firms that employ a preponderance of low wage, young, and very healthy workers are less likely to offer, since these workers are less likely to be willing to trade wages for employer health insurance contributions they do not value very highly. In the limit, firms which employ minimum wage workers cannot lower wages to offset employer health insurance costs. Thus, firms are extremely unlikely to offer if most of their workers earn the minimum or near minimum wage.

Workers may have very weak demands for ESI from their employer if their spouse has an offer or if they or family members are eligible for public coverage. For example, employers with a large percentage of secondary workers may not need to offer ESI to attract the workforce they require. Forty-six percent of small employers surveyed

---

[30] Gruber J and M Lettau, "How Elastic is the Firm's Demand for Health Insurance?" *NBER Working Paper Number 8021*, Cambridge MA, National Bureau of Economic Research, November 2000.

by Kaiser/HRET reported that their employees being covered elsewhere was very or somewhat important in their decision not to offer ESI. Some have hypothesized that the expansions in Medicaid eligibility that took place over the late 1980s and early 1990s could have led to employers deciding to no longer offer health insurance to their workers. The only empirical study of such firm level Medicaid "crowd-out" behavior found no evidence of employer dropping in response to the Medicaid expansions.[31] The researchers did, however, find some limited evidence that the probability of offering family coverage declined with increases in the share of Medicaid eligible workers. Their largest estimate was that a 10 percentage point increase in Medicaid eligibility would lead to a 6 percentage point decrease in the probability of offering family coverage.

In their study of four sites under the Robert Wood Johnson Foundation's Health Care for the Uninsured Program, McLaughlin and Zellers found that almost half of non-offering small employers surveyed in the 1990 Small Business Benefits Survey had no interest in offering ESI.[32] These employers reported that their was a lack of demand on the part of their workers. Consistent with studies of other experiments with subsidized employer sponsored coverage, McLaughlin and Zellers found very low penetration of the subsidized products within the non-offering small firm market.[33]

Workers who are young and/or healthy may not feel that they need insurance coverage. If their expectations for health service use is low, they may believe that

---

[31] Shore-Sheppard L, TC Buchmueller, GA Jensen, "Medicaid and Crowding Out of Private Insurance: A Re-Examination Using Firm Level Data," *Journal of Health Economics*, vol. 19, no. 1, pp. 61-91, January 2000.

[32] McLaughlin CG and WK Zellers, "The Shortocmings of Voluntarism in the Small-Group Insurance Market," *Health Affairs*, pp. 28-40, Summer 1992.

[33] See also, K. Thorpe et al., "Reducing the Number of Uninsured by Subsidizing Employment-Based Health Insurance," *Journal of the American Medical Association*, vol. 19, February 1992, pp. 945-948 and Helms WD, AK Gauthier, and DM Campion, "Mending the Flaws in the Small-Group Market," *Health Affairs*, vol. 11, no. 2, pp. 7-27, Summer 1992.

purchasing insurance or trading wages for insurance benefits is not worthwhile. We do not know how workers in non-offering firms value health insurance. What we do know are the characteristics of workers in non-offering and offering firms, and we know something about why workers in offering firms say that they decline coverage.

Using data from the May 1988 CPS, Long and Marquis found that the characteristics of workers in non-offering firms were more like those of workers declining ESI offers than like those accepting ESI offers.[34] They estimated the probability of taking up ESI on those workers with an offer who were eligible for the coverage. They controlled for wage, hours worked, age, number of employment turnovers, gender, family status, eligibility for group coverage from another family member, and firm size. They then used the estimated model to predict the probability of taking-up an offer for three groups of workers: those without offers, those with offers who took them, and those with offers who declined them. The predicted probabilities of take-up for the three groups were .75, .91, and .71, respectively. The predicted probabilities were closest for those who were not offered and for those who declined offers.

The researchers thus concluded that there was likely a strong demand component to the lack of offers. While this is likely to be true, it is important to note that the predicted probabilities of taking for those declining ESI were quite high — 71 percent. Consequently, there are other significant components of demand which are not measured by this model. These currently unmeasured components of demand are surely very important in the determination of purchasing coverage, otherwise the model would not be

---

[34]Long SH and MS Marquis, "Gaps in Employer Coverage: Lack of Supply or Lack of Demand?" *Health Affairs*, Supplement, pp. 282-293, 1993.

predicting such a high level of take-up for workers who in fact do not take up. The unmeasured factors, however, may be at least as important in explaining demand as those currently measured.

It would also be interesting to focus the comparison on workers who are not offered <u>and</u> are uninsured relative to those who decline offers <u>and</u> are uninsured. Since the majority of workers who decline ESI have alternative forms of coverage (only 25 percent of decliners are uninsured[35]), their characteristics may swamp those of the workers we are most interested in for policy purposes — those who do not have coverage of any kind. The same is true for workers who do not receive ESI offers, 60 percent of whom obtain coverage of some sort.

Only 4.1 percent of workers in offering firms report that they declined coverage because they did not need insurance.[36] Descriptive statistics indicate that those in non-offering firms are more likely to be young. Because younger people consume fewer health care services on average, they may have lower demand for coverage than older workers. Long and Marquis found that 26 percent of workers in non-offering firms are under age 25, as is the case for 32 percent of workers who decline ESI for reasons besides accepting spousal coverage. Only 10 percent of workers taking up ESI offers were under age 25.

However, Blumberg and Nichols found that of the *uninsured* workers in non-offering firms, approximately 8 percent reported being in fair or poor health compared to only 4 percent of those taking-up ESI. Approximately 6 percent who decline an ESI offer

[35] Blumberg LJ and LM Nichols, "The Health Status of Workers Who Decline Employer-Sponsored Insurance," *Health Affairs*, vol. 20, no. 6, pp.180-187, 2001.
[36] Thorpe KE and CS Florence, "Why are Workers Uninsured? Employer-Sponsored Health Insurance in 1997," *Health Affairs*, vol. 18, no. 2, pp. 213-218.

and are uninsured report being in bad health. These results indicate that there are at least some characteristics of the non-offered workers that would lead to higher demand for coverage as compared to those with ESI. Clearly, the issue of whether lack of employer offers is a problem of supply by firms or demand by workers has not been completely resolved. It is likely that there is a combination of reasons that drive the offer decision. One of the main complexities in understanding this decision-making process is how employers consider the heterogeneous demands of a diverse workforce. Not only do we have little insight into how such demands are taken into account, we have very little information about the actual extent of the heterogeneity of labor within firms of different types. However, beyond including workforce summary statistics in estimation equations (percent over 45, percent low wage, etc.), not much is known about how to model exact worker-firm interactions on this tradeoff.

Reason # 2: Labor market competition. Some employers do not offer health insurance coverage because, for a given level of worker preference for health insurance, the competition for workers does not require it. This is reflective of underlying worker demand, but may also be an independent factor, as we note considerable geographic disparity in offer and coverage rates across the country. Survey results indicate that in 2000, forty-four percent of small employers do not offer health insurance because they can obtain good employees without offering a health plan.[37] Interestingly, this 44 percent is down from 60 percent in the 1993 survey.[38] The surveys did not clarify why employers felt that this was the case, and there are a number of different possible

---

[37] The Kaiser Family Foundation and Health Research and Education Trust Employer Health Benefits 2000 Survey. Twenty-two percent of non-offering firms of 3-199 workers reported this as a very important reason and 22 percent reported it as a somewhat important reason for not offering health insurance.

explanations, but the tight labor market of 2000 compared to early post-recession 1993 is surely relevant.[39]

The workforce of non-offering firms might be skewed toward those with low demand for health insurance — they tend to be low wage, young and healthy, or have alternative sources of insurance (the latter two explanations are discussed further below). An alternative explanation is that the offer rates for the industry or geographic area in which they operate or across the occupations they need to hire are low. In other words, the market level compensation for the preponderance of workers that the firm wants to hire is not high enough to require provision of ESI.

Using employer level data, we can see that those industries and occupations with low offer rates are disproportionately comprised of small firms. The higher premium costs faced by small employers -- assuming the same benefit package -- combined with a concentration of workers within small firms in a given industry or occupation, may combine to make market conditions conducive to not offering health insurance. In other words, workers wanting jobs in a particular industry in a particular area may discover that small firms or low wage firms dominate local employment opportunities and those small firms tend not to offer coverage. Thus even larger employers do not have to offer health insurance to attract sufficiently good labor to run their business.

For example, the industry with the lowest offer rate is agriculture (28 percent of agriculture establishments offered in 1998 according to the MEPS-IC[40]). Eighty-seven

---

[38] Morrisey MA, GA Jensen, RJ Morlock, "Small Employers and the Health Insurance Market," *Health Affairs*, pp 147-161, vol 13, no 5, Winter 1994.
[39] Nichols LM, LJ Blumberg, GP Acs, CE Uccello, JA Marsteller, *Small Employers: Their Diversity and Health Insurance*, Urban Institute Monograph, Washington DC, 1997.

[40] http://www.meps.ahrq.gov/MEPSDATA/ic/1998/TIA2.pdf

percent of agricultural establishments have fewer than 10 workers, and 94 percent have fewer than 25 workers.[41] Construction has the second lowest offer rate of any industry (43 percent offered in 1998). Seventy-eight percent of construction establishments have fewer than 10 employees and over 90 percent have fewer than 25 workers.

Even within low offer rate industries, offer rates vary considerably by the worker's occupation. While measured by worker as opposed to by firm, this is further indication that firms' markets for particular types of labor may be very different. For example, white collar workers in agriculture and construction had high offer rates (virtually 100 percent for agriculture and 86 percent for construction) while offer rates for blue collar workers in those industries were only 32 percent and 49 percent respectively.[42] This suggests different labor markets and firms with different skill mixes will have different likelihoods of offer.

Reason # 3: Price to the employer. Conclusions about wage incidence are key to determining which price, if any, is relevant to the employer. Traditional economic theory holds that $\gamma = 1$, and there is some evidence that γ approaches 1 for workers in child bearing years.[43] This would imply that the price to the employer is zero, since all premium costs are extracted from wages. But there is also considerable evidence that workers behave as if $\gamma < 1$, at least on average[44], and at least one theory of how $\gamma < 1$ might be an equilibrium for a particular class of workers and firms has been advanced.[45]

---

[41] http://www.meps.ahrq.gov/MEPSDATA/ic/1998/TIA1a.pdf

[42] Nichols LM, LJ Blumberg, GP Acs, CE Uccello, JA Marsteller, op cit.

[43] Pauly, MV, op cit.; Gruber, J. 1994. The Incidence of Mandated Maternity Benefits. *The American Economic Review* 84(3):622-641.

[44] Levy, Helen and Roger Feldman. "Does the Incidence of Group Health Insurance Fall on Individual Workers?" paper presented at Why Do Employers Do What They Do?, conference sponsored by the US Department of Labor, April 2001; Chernew et al, op cit.; Blumberg LJ, LM Nichols, J Banthin, "Worker Decisions to Purchase Health Insurance," *International Journal of Health Care Finance and Economics* , forthcoming, 2002.

As we discussed above, a major reason employers offer health insurance is to compete for workers, though there could be inherent value to employers of having insured workers, if productivity is higher or work loss days are fewer. Because the market for health insurance is complicated, multidimensional, and heterogeneous, and at times fiercely competitive, employers should not be expected to be equally efficient at obtaining health insurance alternatives for their workers. But, to compete for mobile workers, they must offer competitive total compensation packages. An inefficient insurance-seeking employer -- or a small firm with inherent disadvantages in spreading administrative costs -- may find it impossible to recruit if it tries to extract more in wages from its workers than the most efficient insurance-seeking firm has to. Thus, as long as there are heterogeneous insurance-searching skills or constraints, for many employers and workers, $\gamma < 1$. This is possible in equilibrium of course only if these inefficient firms earn some kind of rent in their product market which is in turn dissipated on incomplete wage offsets, for this prevents entry and preserves the equilibrium.

Our judgment is that most markets have differentiated products, and thus "temporary" differentiation rents are potentially persistent. Given the host of other more powerful factors affecting profitability that change over time (inflation, energy costs, etc.), some firms that offer health insurance may well remain in a state of product differentiation rent disequilibrium indefinitely, or at least until they drop coverage or go out of business altogether in a downturn. In other words, workers may capture differentiation rents from less efficient insurance seekers, and this keeps $\gamma < 1$ for many workers.

.

Given the large administrative and risk pooling advantages of large firms relative to small firms, γ might be quite a bit lower than 1 for small firms competing for the same types of workers as large firms employ. Garrett and Nichols find some evidence to support this hypothesis. Indeed, in the limit, if γ is low enough for a given firm, they may not offer at all, for then the compensation package gets too expensive: they simply don't earn enough rent to finance $\gamma = 0$. Since small firms are inherently disadvantaged in searching for efficient health insurance packages, we expect them to be less likely to offer, *ceteris paribus*. Similar logic predicts that γ and offer rates are low in low wage firms, since these workers will be naturally resistant to having their money wages reduced for any reason.

A neoclassical purist might counter that all inefficient insurance-seeking firms will just offer higher cash wages and no insurance. But given the tax advantage to workers and the lower loads in group insurance products, *efficiently purchased* health insurance through the firm is much more valuable than equivalent cash wages would be, *since workers cannot purchase insurance on their own in the non-group market for that limited amount of "returned" wages.* This wedge, roughly $P_k^{ng} - [(1-s)P_j^g + s(1-t)P_j^g\gamma]$, works like a constraint on firms that compete for those workers who are able to obtain offers for health insurance from competing employers (recall that L^{ng} approx. $= 1.3*L^g$, so that $P_k^{ng} = 1.3*P_j^g$, and since $st\gamma < 1$, the wedge between equivalent cash wages and price in the non-group market can be quite large.

Therefore, firms that are inefficient at insurance-seeking may have to offer in most cases anyway, *if they want to use workers who expect to command offers of health*

---

[45] Garrett B. and L. Nichols. 1999. "Do Workers in Small Firms Pay for Health Insurance with Reduced

insurance on the open market. Monheit and Vistnes report that 79% of workers who value health insurance highly work for a firm that offers, and that 71% of workers who don't think they need health insurance at all work for firms that offer.[46] While these facts do suggest some worker sorting among jobs with different compensation packages, they also suggest two other important inferences: (1) most workers are offered health insurance; and (2) there is some sorting among jobs with more wages than health insurance, but it is highly imperfect and relatively uncommon. We posit, though it has not yet been formally tested, that most US workers are in labor markets wherein health insurance is attached to every relevant job, some are in labor markets wherein no job has health insurance attached, and a relatively small number of workers actually switch between jobs with and without health insurance attached. This reality could be one reason why it has been so difficult to trace the contours of wage-health insurance tradeoffs empirically.

Wages and the Incidence of Health Insurance Costs. {LEN to here TH pm} It has been consistently shown that workers employed by firms which do offer health insurance have higher wages on average than do workers whose employers do not offer.[47] This fact makes it difficult to find wage-fringe tradeoffs as economists normally posit. Of workers with earnings in the lowest quartile of the wage distribution only 32 percent had employer offers in 1993, compared to 73 percent in the second quartile, 87 percent in the third, and 93 percent in the highest quartile. Of those private establishments with 50 percent or more of employees earning $6.50 per hour or less, 30.7 percent offered ESI in

Wages?" Paper presented to American Economic Association Meetings, Atlanta, Georgia, January 2002.
[46] Monheit, Alan C. and Jessica Primoff Vistnes. 2000. Health Insurance Availability at the Workplace: How Important are Worker Preferences? *Journal of Human Resources* 34(4):771-785.

1998 as compared to 56.9 percent of establishments with less than 50 percent of workers low wage. [48] In terms of numbers of workers offered, those establishments with high levels of low wage workers offered ESI to 57.4 percent of their workers, compared to 86.5 percent of workers offered who were employed by establishments with lower concentrations of low wage workers. It is also true that small employers, those least likely to offer health insurance to their workers, pay lower wages than large firms on average.[49]

In a study of public school districts, researchers found that an additional dollar of health benefits was associated with an eighty-three cent reduction in teachers' salaries.[50] In another study, Stephen Woodbury found that when wage/non-wage tradeoffs were estimated combining pensions, health insurance, and life insurance, greater substitutability was found compared to when the benefits were defined as health insurance plus life insurance.[51] In other words, the wage-fringe tradeoff was greater the broader the definition of fringe benefits used.

Employers' costs for workers' compensation insurance have also been used to quantify wage incidence.[52] In that study, 56 to 85 percent of the costs were shifted back through reduced wages, depending upon the group of industries used. In other research, state and federal mandates for coverage of maternity benefits was used to measure wage

---

[47] Nichols LM, LJ Blumberg, GP Acs, CE Uccello, JA Marsteller, *Small Employers: Their Diversity and Health Insurance*, Urban Institute Monograph, Washington DC, 1997.
[48] Table I.A.2(1998) http://www.meps.ahrq.gov/MEPSDATA/ic/1998/Index198.htm, accessed June 7, 2001.
[49] Nichols LM, LJ Blumberg, GP Acs, CE Uccello, JA Marsteller, 1997, op. cit.
[50] Eberts R and J Stone, "Wages, Fringe Benefits, and Working Conditions: An Analysis of Compensating Differentials," *Southern Economic Journal*, vol 52, no 1, pp 274-280, 1985.
[51] Woodbury SA, "Substitution between wage and nonwage benefits," *American Economic Review*, vol 73, no 1, pp 166-182, 1983.

effects.[53] Using all states, this approach found that 59 to 90 percent of the cost of the mandates fell upon the wages of the workers expected to benefit from the maternity services. The estimate for full time workers was 75 percent. Unfortunately, we do not know the prevalence of maternity benefits prior to mandated coverage. If such benefits were relatively prevalent in employer based products, as seems likely, one would expect that the mandates per se would have had only modest wage effects.

While economists agree that workers bear a large portion of health insurance costs through reduced wages, they also recognize that little empirical work has been done specifically on job-based health insurance. And the evidence of how the incidence actually occurs is not compelling.[54] Are workers' wages adjusted individually, or on average? Specific groups that might move together for adjustment purposes are those buying family versus single policies or those of similar health status or with dependents of similar health status. There is no understanding of the time path that such adjustments take or how labor turnover plays into the dynamics of these adjustments. In addition, there is no evidence on a mechanism for these kinds of adjustments: are they within each firm, or across firms through compensating differentials?

One paper found that evidence that older workers do pay for their higher health care costs in reduced wages.[55] There are a number of measurement concerns with the approach taken in this work, however. First, the author did not control for a number of employment characteristics which are correlated with age and which have important

---

[52] Gruber J and AB Krueger, "The Incidence of Mandated Employer-Provided Insurance: Lessons from Workers' Compensation Insurance," in *Tax Policy and the Economy*, ed. D. Bradford, Cambridge, Mass, MIT Press, 1991.

[53] Gruber J, 1994, op cit.

[54] Blumberg L, "Who Pays for Employer Sponsored Health Insurance," *Health Affairs*, vol 18, no 6, pp 58-61, November/December 1999.

[55] Sheiner L, "Health Care Costs, Wages, and Aging,"

effects on wages, such as firm size, industry, occupation, and length of time on the job. These omissions could bias the estimated coefficient on age. In addition, average employer health care costs for each age and gender specific category of workers was used to compare wage effects with appropriate health care costs. However, there is no universally accepted gradient of the relative differences in cost between individuals of different ages — in fact premium/age gradients are quite variable across insurers and across states. Since area averages instead of actual observed premiums for the workers were used, inferences about incidence based on this study seem premature to us.

In addition, observed wage/age gradients do not support the notion that costs are shifted to workers in this age-specific way. For example, if this were true we would expect to see greater age-wage gradients in firms that do not offer health insurance, since the age-wage profile in those would not be attenuated by the age-health cost gradient. In a simple test, we estimated log wage as a function of dummy variables for age categories.[56] The sample included full-time working men from the February 1997 Contingent Worker Supplement to the CPS. The equation was estimated separately for workers in offering and non-offering firms. We found that the statistical relationship between wage and age for those in not offering firms was considerably weaker than was the case for those in offering firms. Wages are monotonically increasing in age in the offering firms, although the increment in wages does shrink at the higher ages. In the non-offering firms, wages actually begin to decline after age 49, precisely the time when high health costs should be bringing down wages in offering firms, if age-related incidence was indeed 100%.

In another study, researchers found evidence that employers vary ESI worker contribution levels in order to encourage their employees to obtain coverage from their

spouses' employer.[57] But if employers are able to pass the full cost of insurance on to their workers, and particularly if they are able to pass those costs along in direct relation to the costs imposed by the worker on the group, the employer should be indifferent about where the worker obtains coverage. We also note that employers tend to resist mandates to provide health insurance with some passion, whereas if incidence were 100% they should be indifferent. We infer from this kind of behavior that employers do not expect to be able to pass all of their employer payments on to workers.

Whether and how much of the cost of employer sponsored health insurance workers perceive that they themselves effectively pay has profound implications for whether or not they would prefer for their employer to offer it, and given an offer, the likelihood that they will take-it up. There is at least anecdotal evidence that workers and employers do not believe in wage incidence of employer premium payments [58] These perceptions may be just as important for determining behavior as is the currently undisclosed reality of incidence dynamics. If workers do not believe that they incur any of the employer contribution to health insurance, then their preference for health insurance is based only upon the out-of-pocket price that they face. On the one hand, this would make a worker more likely to vote for an ESI offer because the perceived price is quite low. They might also perceive a declined ESI offer as voluntarily foregone compensation.

If, however, they do perceive themselves as paying for the full cost of coverage, the probability of taking up an offer will depend upon how the worker perceives the pass-

---

[56] Blumberg L, Urban Institute internal memorandum, July 1999.
[57] Dranove D, KE Spier, L Baker, "'Competition' Among Employers Offering Health Insurance," *Journal of Health Economics*, vol. 19, no. 1, pp. 121-140, January 2000.
[58] Pauly MV, op.cit.

back occurring. If they decline an offer do they expect to receive a compensatory wage increase, or is the expectation that they will merely pay for an average share of the costs of coverage for the other workers who do take-up? If the latter is the more widespread impression, then workers who have low demand for health insurance have a strong incentive to attempt to sort themselves into non-offering firms. But if individuals truly believe that there is a person-by-person wage/fringe tradeoff, then there is very little incentive to sort themselves by firm offer status. It is interesting to note that only 1 percent of eligible workers who decline ESI offers report that they did so because they preferred higher wages in lieu of coverage.[59]

Thus, we conclude the traditional assumption that $\gamma = 1$ does not hold everywhere, and is wrong by varying degrees for different types of firms and workers. Because of this heterogeneity, analysis based upon the assumption that $\gamma = 1$ risks misleading policy makers quite seriously, at least in the short run. The empirical estimation implication of this conclusion is that total premium, adjusted for benefit package generosity, is the right price to use for employer offer decisions.

Labor turnover and price to the employer. There are two components to labor turnover: voluntary separations (worker motivated) and involuntary separations (employer motivated). In addition, involuntary turnover may be permanent (in the case of firing) or temporary (in the case of layoffs). For employers with high rates of turnover, the administrative costs of enrolling and disenrolling workers are high relative to employers with more stable workforces. To the extent that these administrative costs cannot be recouped from workers in some respect, they are a kind of higher price and

---

[59] Thorpe KE and CS Florence, "Why are Workers Uninsured? Employer-Sponsored Health Insurance in 1997," *Health Affairs*, vol 18, no 2, March/April 1999.

certainly represent disincentives to provide ESI. The medical underwriting costs built into the price of insurance for small employers may also be time consuming and expensive. High turnover also tends to lead to higher employer costs for recruitment and training, and worker productivity may be lower than is the case in similar firms with lower turnover. Consequently, compensation may be lower, and not offering health insurance may be one outgrowth of that. Data from the 2000 Kaiser Family Foundation and Health Research and Educational Trust (Kaiser/HRET) Survey of Employer-Sponsored Health Benefits reveal that 38 percent of all small firms (defined as 3-199 workers) report that high turnover is very important or somewhat important as a reason for not offering health insurance.[60]

From the worker's perspective, an expectation that job tenure will be short tends to decrease the demand for health insurance (also leading to a decreased likelihood of offer if this expectation is prevalent among the workers in the firm). This is because insurance is, by nature, more valuable as a longer term contract than as a short term form of compensation (one pays now for protection against future uncertainties; the probability that a person in good health will be sick some time during the year is much greater than the probability that person will be sick in the next month). In addition, a person expecting to leave a job in the near term might also have an expectation that they will be without significant income for some period, tending to increase the subjective value of wages relative to fringe benefits.[61]

---

[60] Kaiser Family Foundation, Health Research and Educational Trust, *Employer Health Benefits: 2000 Annual Survey*, Henry J. Kaiser Family Menlo Park, California, 2000

[61] In a study discussed further below, there is empirical evidence that turnover is concentrated in a subset of individuals. Anderson and Meyer found that 55 percent of total turnover is attributable to those with three or more separations during three years. Anderson PM and BD Meyer, "The Extent and Consequences of

Anderson and Meyer found that as firm size increased, the probability of a permanent separation decreased. They used 1978 to 1984 data from the administrative records of unemployment insurance systems in 8 states participating in the Continuous Wage and Benefit History Project. This difference by firm size is relevant here because there is a greater probability of being an uninsured worker for workers in small firms. Temporary separations did not seem to vary by firm size. In their multivariate work, their results held, with 10 percentage point difference in total separations between the smallest firms (fewer than 20 workers) and the largest firms (2,000 workers or more) in an individual fixed-effects model. Turnover was monotonically decreasing with size. Campbell used the equal opportunity pilot project employer database (EOPP) and found results consistent with Anderson and Meyer,[62] as did research sponsored by the Small Business Administration.[63] Groothuis, in contrast, found that turnover increases with firm size but at a decreasing rate.[64] This study used EOPP survey data, as did Campbell, and the results were consistent across all specifications of the model. We conclude, however that the preponderance of the evidence is consistent with the notion that turnover is negatively related to employer size.

In a study using 1988 CPS data, researchers found that 45 percent of workers in non-offering firms had at least one employment change in the previous 16 months; 23

Job Turnover," *Brookings Papers on Economic Activity*, Brookings Institution, Washington DC, pp 177-236, 1994.

[62] Cambell CM III, "The Determinants of Dismissals: Tests of the Shirking Model with Individual Data," *Economic Letters*, vol 46, pp 89-95.
[63] Haber S, "Aspects of Labor Market Turnover and the Impact of Fringe Benefits in Small and Large Firms," Small Business Administration Report, SBA-3052-OA-88, Washington, DC, US Small Business Administration, December 1993.
[64] Groothuis PA, "Turnover: The Implication of Establishment Size and Unionization," *Quarterly Journal of Business and Economics*, vol 55, pp 433-64, 1994.

percent had 2 or more employment changes.[65] Workers in offering firms had much more stable recent job histories, with only 23 percent having experienced any change, and only 10 percent with 2 or more changes. Differentials in turnover by offer status were true for both small and large firms

Using the 1984 panel of the Survey of Income and Program Participation (SIPP), analysts examined the importance of turnover for health insurance status.[66] The authors found that jobs without insurance tend to be significantly shorter than those with coverage. Only 35 percent of those without insurance lasted through the first year, while over 50 percent of those with coverage did. In an interesting study on the provision of retiree health benefits, researchers found that positions with higher levels of firm-specific training are more likely to offer retiree health benefits — most likely as a mechanism for attracting a low-turnover workforce.[67]

Because there are clear supply and demand issues that may lead to high turnover workers and high turnover employers avoiding employer-based insurance, and such decisions could be economically efficient ones, it would be helpful from a policy perspective to think of this population and their uninsurance problem as a distinct one. Alternative sources of coverage which are not dependent upon any particular employer (multiple employer arrangements, purchasing alliances for individuals, public insurance) are likely to be much better suited to this group. However, we do not currently know the

---

[65] Long SH and MS Marquis, "Gaps in Employment-Based Health Insurance: Lack of Supply or Lack of Demand," in *Health Benefits and the Workforce*, US Department of Labor, Pension and Welfare Benefits Administration, Washington, DC, US Government Printing Office, 1992.

[66] Klerman J, J Buchanan, A Leibowitz, "Labor Turnover and Health Insurance, in *Health Benefits and the Workforce*, US Department of Labor, Pension and Welfare Benefits Administration, Washington, DC, US Government Printing Office, 1992.

[67] Barron JM and A Fraedrich, "The Implications of Job Matching for Retirement Health Insurance and Leave Benefits," *Applied Economics*, vol. 26, pp. 425-435, 1994.

extent high turnover workers comprise the total number of uninsured person-months in a given year, and we have no understanding of their actual demand for health insurance, given that the employer market is not typically available for them to purchase and researchers to observe them there. The importance of this group relative to the total problem of uninsurance is also likely to fluctuate over the course of the business cycle.

Given that premium plus turnover costs are the relevant prices to the firm, we turn to descriptive evidence of the role prices have on firm offer decisions. According to the Kaiser/HRET employer survey, 88 percent of small firms not offering ESI reported that high premiums were very important (76 percent) or somewhat important (12 percent) in the decision not too offer. This could reflect a price response in the demand for coverage by workers, or it might indicate that employers do not believe that health insurance costs can be sufficiently (perhaps not fully) recouped through reductions in worker wages. According to the 1993 Robert Wood Johnson Employer Survey of 10 states, 40 percent of non-offering employers have recently investigated the possibility of providing insurance coverage, but did not find premium offers that were sufficiently low to entice them to purchase coverage.[68]

In previous surveys, researchers also found that three-quarters of employers cited uncertainty in premium increases over time as an important reason (either very or somewhat) why they did not offer.[69] The concern with the latter seemed to indicate that employers were more worried about offering insurance and then having to stop offering coverage than they were with not offering ESI at all. This indicates that stopping

---

[68] Cantor J, S Long, and MS Marquis, "Private Employment-Based Health Insurance in 10 States," *Health Affairs*, vol 14, no 2, pp 197-211, Summer 1995.
[69] Morrisey MA, GA Jensen, RJ Morlock, "Small Employers and the Health Insurance Market," *Health Affairs*, vol 13, no 5, Winter 1994.

coverage would be an employer motivated decision which would anger workers as opposed to a worker motivated response to future premium increases. Cutler found that premiums for small groups are subject to abrupt upward shocks following high-cost years, and that the effects of these increases persisted over considerable time.[70] In a finding also relevant to our previous discussion of wage and turnover issues, he found that premium variance for small firms is negatively related to the percentage of high-wage employees and positively related to the firm's turnover rate.

The meaning of "high premiums" is open to interpretation. Perhaps it is a way to summarize that the distribution of workers in a particular firm have low demand for health insurance relative to workers in offering firms, consequently; the willingness of these workers to pay for coverage is below that of workers in other firms. Alternatively, it might indicate that the price faced for insuring the particular workers in that firm is higher than is the case for the average firm which is offering ESI. Clearly, the workers' level of demand for coverage still plays a role under the latter interpretation, since some firms facing higher than average premiums will still choose to insure. However, it is important to consider what might make premiums for a particular group higher than another.

The first source is the health care risk profile of the group, and, relatedly, the costs associated with medical underwriting. The risk profile of a large group (perhaps 1,000 or more workers, perhaps somewhat less) will tend to reflect the risk profile of the working population as a whole. In other words, a majority of the group will have low health expenditures and a small number of workers within the group will have high expenditures. In the case of a smaller group, however, even a small number of high cost

---

[70] Cutler D., op. cit.

cases will have a substantial impact on the average cost within the group. Such high cost cases may be reflective of the age and/or chronic health status of the group of workers (thus implying an on-going higher cost of insurance) or they might be random occurrences (thus implying greater potential year-to-year variation in costs, but with persistence in terms of the effects on premiums[71]).

Because of the greater effect of even one case on the average cost of insurance for a small group, insurers are more likely to medically underwrite small group policies. The Robert Wood Johnson Survey found that whereas 42 percent of establishments of 1 to 4 workers offering ESI faced medical underwriting, only 21 percent of those of 50 or more workers did. The costs of medical underwriting are incorporated into the premiums, so the underwritten groups face not just more variable premiums, but also premiums increased by the costs of the underwriting itself.

The second source of high premiums is administrative costs. Marketing/sales costs are higher as a share of premium for small than for large firms, as these costs have fewer enrollees over which to be spread in small firms. These costs are incorporated into the premium, meaning that premium costs for small firms will be more expensive for the same level of benefits. Although not technically a part of the premium, employers also incur administrative costs in offering health insurance. These include the time spent investigating insurance options, obtaining quotes and any necessary mediation between workers and the chosen insurer(s). The Kaiser/HRET report indicates that 30 percent of small employers not offering coverage cite administrative hassle as either very important or somewhat important as a reason for not offering ESI. Many owners of small businesses do not employ benefits managers, meaning that in addition to running their

---

[71] Cutler, op cit, 1994.

business they are responsible themselves for the time consuming details of providing health insurance to their workers.

Multivariate Analyses of the Probability of Offer

A number of studies have attempted to estimate the probability of an employer offering health insurance in a multivariate framework. The difficulty in doing so is that price, obviously a key independent variable in this decision, is observed only for those firms which do offer health insurance. Survey's rarely collect information on prices faced by those who do not offer.   Marquis and Long (2001, forthcoming) conducted an employer survey that did ask for quotes received by non-offering firms, but they had a low item response rate (below 30%). While creative and quite interesting, their results cannot therefore be interpreted as representative.

As a consequence, researchers have taken different approaches to compensating for missing price data within representative data sets. One tack is to use tax rates as proxies for the premium price faced by the firm and its workers. Another technique is to impute premiums to firms which do not offer ESI. Still others have attempted to use data on employer responses to questions about their willingness to offer coverage. We leave the methodological disputes surrounding these studies largely to the paper by Chernew and Hirth. Here we present the recent literature and its findings.

Feldman et al. developed an approach to imputing premiums which they used for estimating the probability of employer offer using Minnesota data from the Robert Wood Johnson Foundation 1993 Employer Survey.[72] Nichols et al. adapted this approach for

---

[72] R. Feldman, B. Dowd, S. Leitz, and L.A. Blewett, "The Effect of Premiums on the Small Firm's Decision to Offer Health Insurance," *Journal of Human Resources*, vol 32(4), Fall 1997.

another study which used MEPS-IC data for the whole country.[73] The approach entails estimating a reduced form offer equation, calculating a selection correction term, and using the selection correction term in an equation which estimates premiums for those employers that offer ESI. The estimated premium equation is then used to impute or predict premiums for both offering and non-offering establishments. The predicted premiums are then used as explanatory variables in estimating a structural offer equation.

This approach has yielded estimated price-elasticities which are at the high end of the range of estimates. Feldman et al used the selection correction term in his premium prediction or imputation equation, whereas Nichols et al. presented results both with and without the selection correction term. The specifications and identification restrictions of the equations were also somewhat different. Feldman et al.'s estimated price elasticities were –3.9 for single and –5.8 for family policies for small firms in Minnesota. Nichols et al. estimated separate family premium price elasticities for each of four firm size groups: fewer than 10 workers, 10 to 24 workers, 25 to 99 workers, and 100 or more workers. Their data from the 1996 MEPS-IC included establishments in all firm sizes. The elasticities, in estimates derived from imputed premiums that were calculated without the selection correction term, declined with firm size and the largest group had a statistically insignificant response to price. . The estimated elasticities for the 3 smaller groups were –1.7 (fewer than 10 workers), -0.5 (10-24 workers), and –0.1 (25-99 workers). Nichols et al also found that the age and wage distributions of the workforce affected the probability of offer in predicted ways.

---

[73] Nichols LM, LJ Blumberg, P Cooper, J Vistnes, "Employer Demand for Health Insurance: Evidence from the Medical Expenditure Panel Survey - Insurance Component," Paper Presented at the American Economics Association Meeting, January 2001.

Hadley and Reschovsky (2002, forthcoming) also used a variant of the Feldman et al approach in their study of small firms, using a selection-corrected instrumental variable for price. They too found that the smallest firms (fewer than 10 employees) had higher elasticities than larger small firms (larger than 10 but less than 100), but all their estimated elasticities were smaller (in absolute value) than –1.

Gruber and Lettau used Employment Cost Index and Current Population Survey data to estimate the probability of offer as a function of tax price for the median worker in the firm and other firm characteristics.[74] They found an implied price elasticity of -.314. In addition, consistent with other work in the field, they found that the probability of offer increases with firm size. In addition, as higher wage jobs become an increasing share of jobs within a firm, the probability of offer increased as well. They also found significant differences across industries, as did the previous studies.

Leibowitz and Chernew estimate the effect of after-tax price of insurance on the decision of small firms to offer insurance.[75] They also use premium quotes from small group insurers in different geographic areas. They found an estimated premium price elasticity of –0.8. Gentry and Peress used US Bureau of Labor Statistics' data from the Occupational Compensation Surveys for 1988 to 1992.[76] They estimate the fraction of workers offered each of a number of fringe benefits as a function of tax incentives. They use regional data in order to capture how tax rules affect the average level of benefits in

---

[74] Gruber and Lettau, op cit., NBER, 2000.

[75] A. Leibowitz and M. Chernew, "The firm's Demand for Health Insurance, in *Health Benefits and the Workforce*, 37-42, Washington DC, US DoL, 1992.

[76] Gentry WM and E Peress, "Taxes and Fringe Benefits Offered by Employers," NBER Working Paper No. 4764, National Bureau of Economic Research, Cambridge MA, June 1994.

the region. They find that a one percentage point reduction in the marginal tax rate would decrease the share of employees offered health insurance by 1.8 percentage points.

Although not a multivariate approach, using responses to an employer survey of small firms, Morrisey et al calculated an implied price elasticity.[77] A comprehensive health insurance plan was described by the survey team, and non-offering employers were asked at what premium level they would be willing to offer this package to their workers. In 1993, 40 percent of the respondents said that they would offer the policy if it could be purchased for $175 per month per worker. Lowering the premium by 15 percent increased the share willing to offer to 53 percent. Seventy-five percent said they would offer if the premium were lowered by 50 percent. These responses implied a premium elasticity of –0.92. Whether responses to a hypothetical scenario such as this one would be consistent with actual behavior, however, is unknown. But these results are fairly consistent with other empirical work.

Coburn et al. used the 1993 Robert Wood Johnson Foundation Survey to estimate the probability of offer as a reduced form model (i.e., no price term).[78] The focus of the analysis was to determine if the lower rates of ESI coverage in rural areas relative to urban were the consequence of cultural/behavioral differences or due simply to differences in characteristics of the employers. While 78 percent of rural employees are offered ESI, 88 percent of urban workers are offered. They found that the 10 percentage point offer gap would be reduced to 3 percentage points if the distribution of firm size in rural areas was changed to that of urban areas. If, in addition, the rural distribution of

---

[77] M.A. Morrisey, G.A. Jensen and R.J. Morlock, "Small Employers and the Health Insurance Market," *Health Affairs*, 13(5):149-61, 1994.

wages is altered to be the same as that in urban areas, the gap in offer rates is reduced to just 2 percentage points.

In summary, multivariate studies have confirmed that premium price, tax incentives, and characteristics of the employer and its workforce are significant in explaining the probability that an employer will offer health insurance. While the tax-based premium studies imply that at least some of the offer decision is driven by worker preferences, the continuing importance of employer characteristics while controlling for worker characteristics indicate that employers may have independent reasons for choosing whether or not to offer ESI. Clarification of these lines of distinction could be instrumental in designing effective public policies for expanding insurance coverage.

3.3 Why are Some Workers in Offering Firms Eligible for ESI While Others are Not?

Employers who offer ESI to their workers have a number of options for restricting access to health insurance for certain classes of workers. They can establish waiting periods, which prevent new workers at the firm from receiving health insurance coverage until the specified period has passed. Employers can also restrict ESI coverage permanently to certain types of workers, for example full time workers, excluding part-time workers. While all workers of a particular class must be treated the same, and worker required contributions to health plans cannot vary within that group (i.e., you cannot make those with particular health problems ineligible for ESI if other similar

---

[78] A Coburn, EH Kilbreth, SH Long, MS Marquis, "Urban-Rural Differences in Employer-Based Health Insurance Coverage of Workers," *Medical Care Research and Review*, vol. 55, no. 4, pp. 484-496, December 1998.

workers are eligible), employers are able to limit eligibility significantly if they so desire.[79]

Garrett et al report that approximately 90% of workers in firms that offer ESI are eligible for that coverage. Part time and workers with short tenure (less than 1 year) are the least likely to be eligible.[80] According to the 1997 Contingent Worker Supplement to the CPS, 3.7 million (about 18 percent) of 20.3 million uninsured workers were in offering firms but were not eligible for that coverage.[81] An additional 6.4 million workers with insurance coverage from another source were also ineligible for their own employers' coverage. Of all those ineligible for their employers' ESI offers, 53 percent reported the reason as being that they don't work enough hours per week or weeks per year. About 8 percent said that contract or temporary workers are not allowed in the plan. Twenty-seven percent said that they had not worked for the employer long enough to qualify, and 1 percent cited a pre-existing condition. About 11 percent cited other reasons.

The reasons cited most frequently by the uninsured were that their hours were insufficient to qualify (36 percent) and that they had not been with the firm long enough (48 percent). The former reason is indicative of a longer term uninsurance problem, while the latter reason implies that eligibility will come with more time on the job.

---

[79] Farber and Levy, 2000, op cit. Summarize the multiple recent changes in non-discrimination provisions of the Internal Revenue Code. While they are oriented towards providing assurances that employers will not provide ESI to higher paid workers only, these rules seem relatively weak. Before 1978 there were no such rules; in 1978 they were applied to self-insured plans only; in 1986 they were made stricter and were also applied to commercially insured plans; in 1989 the stricter rules were appealed and they were no longer applicable to commercial plans. In 1996 HIPAA disallowed discrimination by health status for both commercial and self-insured policies.

[80] B Garrett, LM Nichols, E Greenman, "Workers without Health Insurance: Who Are They and How Can Policy Reach Them?" Urban Insitute Report to the Kellogg Foundation, June 2001

[81] Thorpe and Florence, 1999, op cit.

While the lack of eligibility for workers with an offering employer represents a minority of those workers who are uninsured, it is a status which appears to be growing in importance over time. Between 1988 and 1997, eligibility conditional on ESI offer fell from 94.3 percent to 91.3 percent.[82] But eligibility for peripheral workers (those on the job less than a year and those in part-time jobs) fell more dramatically, from 79.8 percent to 69.6 percent, over the same period. The largest percentage point decline (23) was for part-time workers in jobs for less than a year – their eligibility fell from 58.6 percent t 35.5 percent. Part-time workers in longer standing job saw their eligibility rates fall by 10 percentage points, to 67 percent in 1997, and eligibility for full-time workers in new jobs fell to 80 percent. Farber and Levy found that eligibility was responsible for all of the decline in coverage for part-time workers (old and new) during their period of analysis.

Why do some offering employers choose to make some workers eligible for ESI and some workers not? No published literature exists on this question at the present time. Perhaps employers use waiting periods in order to provide themselves with some assurance that a new worker will not leave before their productivity has been sufficient to allow the employer to recoup the costs of their coverage. But if this is true, how do employers who do not use waiting periods cover these costs? Little is known about the types of employers who do and do not use eligibility waiting periods, and how their use might vary by the characteristics and expected longevity of the workers.

While part-time workers may value health insurance less than wages due to their likely lower incomes, it is difficult to understand why their comparative valuation would

---

[82] Farber HS and H Levy, "Recent Trends in Employer-Sponsored Health Insurance Coverage: are Bad Jobs Getting Worse?," *Journal of Health Economics*, vol. 19, pp 93-119, January 2000.

be declining over time. And while some part-time workers have coverage through a spouse (another potential reason why coverage may be less valuable to them), Farber and Levy also found that declines in spousal coverage for part-time workers exacerbated their growing coverage problem. Could it be that employers do not feel that they can recoup the costs of providing coverage to part-time workers to the same extent as they can from full-time worker? And if they cannot, why can't they? With eligibility rates so low for part-time workers, is it possible that the part-time labor market has reached a "tipping point" where employers have accepted denying eligibility to this group as something of a cultural or at least competitive norm? With the share of part-time workers growing as a percentage of the labor market, eligibility may become a more prominent reason for uninsurance in the future.

3.4 Why Do Some Employees who are Offered ESI Take It Up While Others Do Not?

The participation rate of eligible workers offered health insurance is very high – 85 percent in 1997.[83] Yet participation is clearly not universal, and has declined somewhat in recent years among full-time workers, particularly those who are less educated.[84] Of those workers declining ESI, approximately 36 percent are uninsured, while the remaining 64 percent obtain other coverage (either private or public).[85] If workers were able to sort themselves perfectly into jobs with compensation packages that were consistent with their relative preferences for wages and benefits, the take-up rate for health insurance (conditional on an offer) would be 100 percent.

---

[83] Farber and Levy, 2000, op cit.
[84] See also Cooper PF and BS Schone, "More Offers, Fewer Takers for Employment-Based Health Insurance: 1987 and 1996," *Health Affairs*, vol 16, no 6, pp 142-49.

Thurston has developed a theoretical model which states that workers will take-up an ESI offer if "the marginal utility of insurance exceeds the marginal utility of forgone consumption from the net cost of insurance ($U_h(h; c,l) \geq U_c(p_h h; c,l)$)."[86] Here, h is health insurance, c is the composite consumption good, and l is the number of work hours. $p_h h$ is the out-of-pocket expenditure on health insurance. As the out-of-pocket price of health insurance grows relative to wages, you would expect more workers to opt not to take-up coverage. In addition, as more employers seek to create better matches between compensation and worker preferences by offering cafeteria plans, a decrease in ESI take-up should also be expected. Finally, Thurston notes that public insurance expansions effectively increase the price of private insurance relative to public for more workers, leading to a decrease in the relative utility of enrolling in ESI; an issue first raised by Cutler and Gruber, and explored further by others.[87]

As McLaughlin discusses,[88] jobs vary on many more dimensions than health insurance offers, and as posited in section 2 of this paper, some types of workers may find it difficult to find a job *without* an offer. Workers may choose not to pay the out-of-pocket health insurance premium in a job with an offer, perhaps finding coverage through a spouse, and perhaps being able to negotiate higher wages directly with the employer.

---

[85] Cunningham PJ, E Schaefer and C Hogan, "Who Declines Employer-Sponsored Health Insurance and is Uninsured?" Issue Brief No. 22, Center for Studying Health System Change, Washington, DC, October 1999.

[86] Thurston NK, "On the Decline of Employment-Based Health Insurance in the US," *Applied Economics Letters*, 1999, 6, 683-686.

[87] Cutler DM, J Gruber, "Does Public Insurance Crowd-Out Private Insurance?" *Quarterly Journal of Economics*, 1996; Dubay LC and GM Kenney, "Revisiting the Issues: The Effect of Medicaid Expansions on Insurance Coverage of Children," *The Future of Children*, vol 6, no 1, pp. 152-161; Dubay LC and GM Kenney, "Did the Medicaid Expansions for Pregnant Women Crowd-Out Private Insurance?" *Health Affairs*, vol 16, no 1, January/February 1997; Blumberg LJ, LC Dubay, SA Norton, "Did the Medicaid Expansions for Children Displace Private Insurance? An Analysis Using the SIPP," *Journal of Health Economics*; Yazici E and Kaestner RJ, "Medicaid Expansions and the Crowding Out of Private Health Insurance among Children," *Inquiry*, vol 37, no 1, 2000.

Chernew et al. and Blumberg et al. estimated multivariate models of take-up, conditional on the presence of employer offers for which the worker was eligible.[89] The Chernew et al. study used data from the Small Business Benefit Survey, which was conducted in 1992 and 1993 in 7 metropolitan areas, and covered employers and workers in businesses with 2 to 25 employees. Questions were asked of the individual most knowledgeable about benefits for the firm, and that person provided information on the firm and about specific workers in the firm. Their analysis was confined to single workers.

The Blumberg et al. study used a linked file of the MEPS-IC and HH components (national surveys of employers and households), which allowed them to match actual employer premium data to a sample of workers who were offered ESI and either took it up or did not. They estimated separate models for singles (those workers with no spouse or children) and for family candidates (those workers who were either married, had dependent children, or both).

Both studies found that worker take-up was not significantly related to total premium price (employer contribution plus worker contribution), but was significantly and negatively related to the worker contribution. This finding is consistent with the hypothesis that workers do not perceive themselves as paying for the full cost of health insurance. Using the worker out-of-pocket premium, Chernew et al. estimated arc elasticities of -.033 to -.095, while Blumberg et al. estimated elasticities of -.0025 for singles and -.04 for family candidates using the family premium. Blumberg, et al. also found that the low income (those below 200 percent of the federal poverty level) were

---

[88] McLaughlin CG, "Health Care Consumers: Choices and Constraints," *Medical Care Research and Review*, vol. 56, Supplement 1, pp. 24-59, 1999.

more price responsive than higher income workers. In addition to price, the Chernew et al. study found that salaried workers were more likely to take-up coverage and that earnings were positively related to take-up. The Blumberg et al. study found that take-up was positively related to the log of family income, the worker being in fair or poor health and having one of a list of serious medical conditions.

The Blumberg et al. study also tested for the presence of worker sorting across offering and non-offering employers according to their demand for health insurance. This was done using a bivariate probit framework which is identified by including establishment size, industry, union status, and whether the employer is in the public sector in the offer but not in the take-up component. They found that while the cross equation correlation (rho) was significant, inferring effective worker sorting behavior, the presence of the sorting did not appear to appreciably alter the estimated elasticities of demand for health insurance.

In another study Blumberg and Nichols used the National Health Interview Survey to estimate the probability of take-up.[90] This analysis supported, in general, the inference that out-of-pocket premium price is more important in the take-up decision than is health status of the worker and their family members. Lower income people appear to be more price-responsive than higher income people which is consistent with their findings in the previously described study. In fact, in this analysis, higher income people with other family members did not have a significant price response at the decision to buy health insurance of some kind (single or family), though they did have a negative

---

[89] Chernew, et al. op cit.; Blumberg LJ, LM Nichols, J Banthin, op cit.
[90] Blumberg LJ and LM Nichols, "Price Versus Health Status: What Matters More in Workers' Decisions to Purchase Employer-Sponsored Health Insurance," Report to the US Department of Health and Human

response to price at the decision to buy family instead of a single policy. Interestingly, low income persons seem to be more likely to enroll in ESI if they have a family member in fair or poor health, whereas their purchase behavior does not seem to be related to their own health status.

Cunningham et al. used data from the 1997 Robert Wood Johnson Foundation Employer Health Insurance Survey and found that worker out-of-pocket premiums (even for the lowest cost plan offered) tended to be higher in firms with more low-wage workers. If the typical wage in the firm was below $7 per hour, the average monthly employee premium amount for the lowest cost plan was $27 for single/$130 for family, compared to only $17/$84 for firms where the typical wage was over $15 per hour. The average take-up rates increased with income, with 78 percent for the lowest wage firms and 89 percent for the highest wage firms.

In a study on coverage, not take-up per se, researchers found that psychological characteristics, such as decisiveness and external versus internal locus of control significantly increased the explanatory power of a model estimating the probability of coverage relative to the use of demographic controls alone.[91] Such psychological attributes may be relevant to the decision to take-up offered coverage, as well as the decision to take a job with or without available ESI.

To some extent, the decision of a worker to take-up coverage may be influenced by the benefit package(s) offered by the particular employer. One workers' preferences

---

Services, Assistant Secretary for Planning and Evaluation, Pursuant to Contract No. HHS-100-97-0010 TO23, December 2001.

[91] Dolinksy A and RK Caputo, "Psychological and Demographic Characteristics as Determinants of Women's Health Insurance Coverage," *The Journal of Consumer Affairs*, vol 31, no 2, 1997.

might be such that a generous package with a low deductible may be perceived as worthwhile, but a more parsimonious package might not be.

As mentioned above, researchers have recently explored the extent to which the availability of public coverage (specifically, Medicaid) has led individuals to drop or decline to enroll in private insurance.[92] The measurement of this effect and the magnitudes of the estimates vary considerably across authors. For those individuals who are eligible for public coverage themselves, declining private coverage and enrolling in public coverage does not present a problem of uninsurance — it is more a distributional issue of who pays for the coverage. However, some have posited that workers who are low income, may drop their own ESI if they could cover their children through Medicaid. In other words, the parents might go bare if they can find very low cost or free coverage for their children. Cutler and Gruber incorporated this type of "spillover" effect in their estimation of their overall crowd-out effects, finding that the Medicaid expansions for pregnant women and children led to a decline in private coverage for other adults of .3 million persons.

There is some evidence that some low income workers choose to decline ESI offers, even when the out-of-pocket cost to them is zero (i.e., the employer does not require a worker contribution). Researchers have suggested that such a decision is made because the co-insurance and deductibles of even a "free" policy are more onerous for low income workers than the charity care/uncompensated care they might receive through hospitals and other providers in the event of a serious illness or injury. In work

---

[92] See L Dubay, "Expansions in Public Health Insurance and Crowd-Out: What the Evidence Says," Kaiser Family Foundation Report, October 1999, http://www.kff.org/content/1999/19991112m/dubay.pdf

related to that hypothesis, Rask and Rask found that public hospitals and uncompensated care reimbursement funds decreased private insurance coverage.[93]

3.5 Why do some Workers Work for Firms that do not Offer ESI?

As was discussed in section 3.2 under the rubric of employer aggregation of worker preferences, there are many reasons why workers might prefer to work for an employer that does not offer health insurance. These include preferences for wages relative to benefits, expectations for job tenure, level of premiums relative to expected medical costs, or the presence of coverage from another source. Monheit and Vistnes estimated reduced form job choice equations using data from the 1987 National Medical Expenditure Survey (NMES).[94] They found that respondents stating that "I'm healthy enough and really don't need insurance" and/or that "health insurance is not worth the cost," significantly increase their probability of having a job without an offer. However, 72 percent of those stating that they do not really need health insurance and 69 percent of those that feel that health insurance is not worth the cost work for employers offering health insurance.   There are clear mismatches in preferences for health insurance and job choice.

Aside from the preferences of the particular worker, there are other possible explanations why some workers may work for employers which do not offer coverage. Buchmueller suggests that there is an incentive for employers offering health insurance to attempt to screen out potentially high health cost workers.[95] If the cost of providing

---

[93] Rask KN and KJ Rask, "Public Insurance Substituting for Private Insurance: New Evidence Regarding Public Hospitals, Uncompensated Care Funds, and Medicaid," *Journal of Health Economics*, vol 19, pp 1-31, January 2000.

[94] Monheit AC and JP Vistnes, 2000, op cit.

[95] Buchmueller TC, "Health Risk and Access to Employer-Provided Health Insurance," *Inquiry*, vol 21, pp 75-86, 1995.

coverage is high to a given employer relative to its competition for labor, that employer will not be able to offer wages commensurate with other similar firms. Consequently, its competition for labor will look more attractive, and it may have a harder time attracting workers of sufficient quality. In addition, for workers who are absent from work at higher than average rates, productivity is lower, and there might be at least short-run mismatches in compensation and productivity.

Buchmueller's analysis finds support for the hypothesis that there is a negative relationship between poor health and access to ESI, and that this relationship is stronger for men than for women. This means that employers themselves may be effective screeners of worker health status, making it difficult for some workers with health problems or disabilities to obtain a job with an ESI offer. The current applicability of this study is diminished somewhat in that the 1984 Survey of Income and Program Participation (SIPP) data used precede the implementation of the Americans with Disabilities Act which prohibits hiring discrimination by disability status. In addition, the data used did not have ESI offer status explicitly — Buchmueller assumed equivalence between ESI offer and coverage. As we have seen that offer and take-up rates have diverged over time, this assumption is probably less appropriate today than it was in 1984.

Furthermore, it is labor productivity, based on education (ED), experience, and other human capital characteristics, that makes a worker valuable and able to command offers with health insurance from more efficient insurance-seeking firms. We observe that most human capital acquisition decisions are made early in a person's adult life, long before explicit and serious thought is given to health insurance demand and health plan

choice in an employment setting. This is another way of saying not that worker-job

sorting is random, but that the specifics of a health insurance arrangement may be less

important to some/most workers than other job attributes, like career ladders, working

conditions, and the nature of the work itself. These other considerations could also

compensate a worker for selecting a job with sub-optimal health insurance offering --

either because the benefit package is the wrong degree of generous, γ is too high, or P* is

just too high, *ceteris paribius.*

In summary, it seems clear that there is not a universal mechanism for workers

finding employment situations which come with health insurance options which are

completely consistent with their individual preferences. While there are sure to be

workers who do not value health insurance who are able to sort themselves into firms

which do not offer, there are also surely workers who would prefer not to have coverage

who are in firms which do offer and workers who want coverage and either cannot find

an optimal wage/health insurance mix. Whether the unavoidable magnitude of real world

search costs render this outcome efficient is unknown. Given the percentage of workers

who appear to be mismatched, we suspect efficiency could be enhanced by an appropriate

intervention. The lack of clarity about wage-fringe options with costly search implies

that some workers may be unable to find jobs with health insurance attached. Those low

wage jobs that do have ESI attached then may have long implicit queues that are hidden

because workers in this socioeconomic class cannot afford to search long while

unemployed.

Importantly, many low wage workers face affordability constraints even if they

have relatively high subjective valuations for health insurance. The tradeoff between

higher take-home pay, even for workers in offering firms who perceive their premium price as the worker out-of-pocket portion alone, is quite different for a worker at 150 percent of poverty than it is for one at 400 percent of poverty. The foregone consumption if health insurance is purchased is more discretionary for the latter, while it is more likely to be basic necessities of daily living for the former.

Section 4. Public Insurance

While a number of public health insurance programs exist at both the federal and state levels, the eligibility levels are generally limited to specific subpopulations of the low income. In addition, eligibility guidelines vary for each subpopulation state by state. The largest public insurance programs for the low income non-elderly population are Medicaid and the State Children's Health Insurance Program (SCHIP), both are jointly financed by the federal government and the states.[96] In addition, a number of states have subsidized health insurance programs for certain low income groups excluded from Medicaid and SCHIP --- these programs are financed completely with state funds. One example is the state of Washington's Basic Health Plan (BHP).

Medicaid is available to families who would have qualified for coverage as recipients of cash assistance prior to welfare reform. These eligibility levels vary considerably by state, and ranged from 15 percent of poverty for a family of 3 in 1996 (in Alabama) to 61 percent of poverty (in New York).[97] In addition, many states have

---

[96] The elderly population (those age 65 and older) is virtually universally eligible and enrolled in the Medicare program which is financed federally. Certain disabled persons and those with end-stage renal disease are also eligible for Medicare. Consequently, we focus on programs applicable to the non-elderly population here, where an uninsurance problem persists.

[97] Liska D, B Bruen, A Salganicoff, P Long, B Kessler, "Medicaid Expenditures and Beneficiaries: National and State Profiles and Trends, 1990-1995," Report to the Kaiser Commision on the Future of Medicaid, November 1997.

medically needy programs which make some individuals with high medical expenses relative to income eligible for Medicaid coverage. These eligibility cutoffs vary by state as well, and they ranged between 23 percent of poverty for a family of 3 in 1996 (Tennessee) to 86 percent of poverty (in California). Medicaid eligibility for those receiving cash assistance through the Supplemental Security Income (SSI) program are more uniform across the country, with the bulk of states at 75 percent of the poverty level for children and adults with qualifying disabilities. Federal law requires that Medicaid cover all children born after September 30, 1983 in families with incomes below 100 percent of poverty. Using Medicaid waivers or the 1902(r)(2), some states expanded coverage to children born before that date or to children in families with higher incomes. Medicaid also covers pregnant women and children under the age of 6 up to at least 133 percent of poverty. The SCHIP program provides states with the option of covering uninsured children in families with incomes up to 200 percent of poverty. For those states which had expanded Medicaid coverage beyond 150 percent of poverty prior to SCHIP, they can increase the income eligibility maximum by 50 percentage points above their prior Medicaid eligibility level.[98]

State participation is voluntary under both the Medicaid and SCHIP programs, although participation is universal under both. The costs of the Medicaid program are shared between the states according to a formula which takes into account the state's relative per capita personal income. The federal matching rates for the SCHIP program are 30 percent higher than each state's matching rate for the Medicaid program.

---

[98] Medicaid also finances long-term care and assistance with out-of-pocket Medicare payments for the low income elderly. Because the focus of concern with regard to uninsurance is with the non-elderly, these aspects of the Medicaid program are not discussed here.

Under the Medicaid program, some states provide the mandatory minimums of eligibility for children (e.g., Alabama, Alaska, Louisiana, Nevada, Wyoming), while others have gone much further.[99] Minnesota, for example, used an 1115 waiver to provide subsidized coverage to children up to 275 percent of poverty (some premiums are charged for those between 133 and 275 percent of poverty). On average, only about 54 percent of the low income children (those below 150 percent of poverty) are Medicaid beneficiaries. SCHIP initiatives vary considerably as well. Eligibility ranges from a low of 140% of poverty in North Dakota to a high of 350 percent of poverty in New Jersey.[100]

Gaps in eligibility for many low income persons who do not have access to or resources sufficient to purchase private insurance surely contributes to the lack of insurance coverage in the US. In addition, participation rates in public insurance programs for those who are eligible are significantly below 100 percent. While participation among those receiving cash assistance has historically been quite high (90 percent for children[101]), the more recent expansions which extended eligibility beyond the cash assistance population have engendered much lower participation rates.

Estimates of participation rates for Medicaid eligible children who do not have other sources of coverage have ranged from 59 percent to 69 percent for the expansion groups.[102] Evidence indicates that eligible but not enrolled persons are at numerous disadvantages relative to the enrolled. Children who are eligible but do not enroll in

---

[99] Bruen BK and F Ullman, "Children's Health Insurance Programs: Where States Are, Where They Are Headed," Assessing the New Federalism Issue Brief No. A-20, The Urban Institute, May 1998.

[100] Ullman JF, I Hill and R Almeida, "CHIP: A Look at Emerging State Programs," Assessing the New Federalism Issue Brief No. A-35, The Urban Institute, September 1999.

[101] Dubay L and G Kenney, 1996, op cit.

[102] Selden TM, JS Banthin, JW Cohen, "Medicaid's Problem Children: Eligible But Not Enrolled," *Health Affairs*, vol 17, no 3, pp 192-200; Dubay and Kenney, op cit 1996

Medicaid and are uninsured are more likely to report having unmet medical, dental, and other health care needs than are children who are enrolled in the program.[103] The eligible but uninsured children are more likely to have delayed seeking care in the last year due to cost (11.3 percent versus 2.5 percent), and their families are more likely to have spent over $500 out-of-pocket on health care costs (28.9 percent versus 12.9 percent).

Why do individuals who can enroll in public insurance for little or no cost choose to stay uninsured or to have their children be uninsured? Hypotheses abound. Some believe that the social stigma of being in a public program is a deterrent; that many do not know they are eligible; that they know they can enroll in the event of medical need; that administrative barriers to enrollment are important factors. No empirical study has yet compared the relative importance of these factors.

Researchers have attempted to estimate models to predict the probability of Medicaid participation for eligibles. A recent study used the 1994 and 1995 National Health Interview Survey to estimate a multinomial choice model of insurance coverage for Medicaid eligible children.[104] They found that Medicaid enrollment was positively related to the number of community and migrant health centers per 100,000 low income persons in the eligible child's county. This contradicts the safety net price of care argument we made in the demand section. We suspect this results reflects providers signing people up so they can be reimbursed. Providers thus lower the application hurdles for public program eligibles with fairly low latent demand for health insurance.

---

[103] Davidoff AJ, B Garrett, DM Makuc, M Schirmer, "Children Eligible for Medicaid but Not Enrolled: How Great a Policy Concern?" New Federalism Issue Brief, No. A-41, The Urban Institute, September 2000.
[104] Davidoff AJ and B Garrett, "Determinants of Public and Private Insurance Enrollment Among Medicaid-Eligible Children," *Medical Care*, vol. 39, no. 6, pp 523-535, 2001.

This study also found that participation declines with increasing age of the child. Black eligibles are more likely to participate than Whites, and children with activity limitations are more likely to enroll as well. As the age of the oldest parent increases, participation declines. Enrollment is also negatively related to the parents being immigrants and to the income of the family unit. As the number of children in the family increases, so does participation. Enrollment is also more likely for children with a parent in fair or poor health and for children eligible for Medicaid through the cash assistance program.

While SCHIP is still in its infancy, concerns about take-up rates within the program have arisen, even before any formal evaluations have been completed. Byck used data from the 1993 and 1994 National Health Interview Surveys (NHIS), data years which pre-date the implementation of SCHIP, and used a very rough proxy to identify children who were uninsured and would have been eligible for SCHIP had it already been implemented.[105] She compared this group to Medicaid enrolled children and to children with private health insurance. She draws on the differences in the two groups and experience with the Medicaid program to identify causes for concern in SCHIP take-up rates. Medicaid take-up rates have been low among higher income families and those with higher educated working families, and the SCHIP eligibles tend to be higher income and higher educated than the Medicaid group, implying that achieving high participation

---

[105] Byck GR, "A Comparison of the Socioeconomic and Health Status Characteristics of Uninsured, State Children's Health Insurance Program-Eligible Children in the United States with Those of Other Groups of Insured Children: Implications for Policy," *Pediatrics*, vol 106, no. 1, pp 14-21, 2000. There is clearly error in Byck's measurement of children who would be eligible. She does not use state by state Medicaid eligibility rules to determine which children are actually Medicaid eligible, and Medicaid eligibles are prohibited from SCHIP eligibility. In addition, income is measured in categories in the NHIS, which does not permit precise measurement of income or comparison with eligibility rules. In addition, SCHIP eligibility varies by state, and Byck assumes that all children between 133 percent and 200 percent of poverty who are uninsured are SCHIP eligible. Not only does this exclude state variations, but it also excludes older lower income children who are not eligible for Medicaid, but are eligible for SCHIP. Nonetheless, her analysis provides a rough approximation that is useful although not precise.

will be more difficult to achieve. Because the stigma hypothesis is credible, some states have implemented SCHIP using a different name than Medicaid. Still, residual stigma because it is a public program may still reduce participation rates. Stigma effects may also be stronger at higher income levels, where people have less experience with public program enrollment. Educating parents about the eligibility of their children is also more of a challenge for SCHIP because the parents do not tend to have contact with welfare offices and other locations where outreach for low-income programs traditionally occurs. And even modest cost sharing requirements may deter the working poor from enrolling.

There is considerable evidence that reform of the welfare system in 1996 negatively reduced the participation rate of Medicaid eligible persons. Kronebusch used data from multiple years of the CPS to estimate logit models of state Medicaid participation rates of children before and after the implementation of welfare reform.[106] The probability of enrollment grew in the 1989 to 1995 period, largely the result of the poverty-related expansions implemented during that period. Depending upon income level, the enrollment probabilities peaked in 1995 or 1996. Since that time, however, enrollment probabilities have fallen dramatically, even for children in the poorest families — those with no income. In 1995 the enrollment probability for children with no income was 81 percent, and by 1998 that rate had fallen to 68 percent. For children at 50 percent of poverty, participation rates fell from 61 percent in 1995 to 53 percent in 1998. This study also found that state declines in Medicaid participation were strongly associated with declines in welfare enrollment in each state.

---

[106] Kronebusch K, "Medicaid for Children: Federal Mandates, Welfare Reform, and Policy Backsliding," *Health Affairs*, vol. 20, no. 1, pp. 97-111, January/February 2001.

In another study, Garrett and Holahan used the 1997 National Survey of America's Families (NSAF) to examine the health insurance status of women leaving welfare between January 1995 and mid-1997.[107] While much of this study period pre-dates welfare reform, the analysis should provide an indication of the health insurance situation of those leaving welfare during the later post-welfare reform period as well. This prior period was in fact already one of rapidly declining welfare rolls, due to the strong economy and the implementation of early program changes under state waivers.

There are a number of avenues through which families leaving welfare can retain Medicaid coverage. Transitional Medicaid Assistance (TMA) covers families leaving AFDC due to increased earnings for 6 months, with another 6 months of coverage available if income does not exceed 185 percent of poverty. As noted previously, alternative coverage avenues for children, pregnant women, and those with high medical expenses are available depending upon income and state of residence. But the TMA provisions should protect the coverage of those who have recently exited from welfare.

For those women having left welfare within 6 months prior, 56 percent had Medicaid coverage, 12 percent had some form of private coverage (with some overlap between those two groups) and 34 percent were uninsured. For those who had left welfare a year or more prior to being surveyed, 49 percent were uninsured. Children fared better in this situation, with 19 of those exiting welfare recently uninsured and 29 percent of those exiting a year or more prior uninsured. But clearly, large gaps exist between coverage pre- and post-welfare receipt, even within time frames where the former recipients are guaranteed eligibility for Medicaid.

---

[107] Garrett B and J Holahan, "Health Insurance Coverage After Welfare," *Health Affairs*, vol. 19, no. 1, pp. 175-184, January/February 2000.

Madden et al examined participation in Washington state's subsidized insurance program for the low income population, BHP.[108] All persons with family incomes of less than 200 percent of poverty living in the service area of participating plans and who are not eligible for Medicare may participate. Insurance coverage is provided through managed care plans contracting with the state. At the time of the study, no enrollment caps were in place; since that time enrollment has been limited due to state budget constraints. The study included 4 counties, and used enrollment data from BHP as well as a telephone survey of applicants and of eligible not-enrolled families. The premiums charged enrollees vary by family income, with the minimum being $7 per month and the average $34 in 1989. Co-payments at the time of service were $5 per office visit and $25 for care received in a hospital emergency room which was not emergent.

The logistic regression results indicate that families with part-time workers only were more likely to enroll than those with no workers; the full-time employed were less likely to enroll. Families with children age 5 or younger were more likely to enroll, as were single-mother families, and those with higher recent out-of-pocket health care costs. There was no significant enrollment effect of health status. The price of coverage had a negative and significant affect on enrollment, with a $10 increase in the monthly family premium reduces the odds of enrolling by 13 percent.[109] Having family members with insurance from another source reduced enrollment. Larger families were more likely to

---

[108] Madden CW, A Cheadle, P Diehr, DP Martin, DL Patrick, SM Skillman, "Voluntary Public Health Insurance for Low-Income Families: The Decision to Enroll," *Journal of Health Politics, Policy and Law*, vol 20, no 4, Winter 1995.

[109] The great price sensitivity of low income eligibles was reinforced by a Washington Hospital Association survey of those who applied for BHP but did not join. More than 70 percent said they did not enroll because the premiums were too expensive.

enroll, as were those with no usual source of care. More highly educated eligibles were more likely to join, as were those families with older adults.

The great price sensitivity of low income eligibles found in that study was reinforced by a Washington Hospital Association survey of those who applied for BHP but did not join. More than 70 percent said they did not enroll because the premiums were too expensive.[110] This evidence poses a powerful dilemma for those hoping to reduce the number of uninsured: people who need subsidies have very low willingness to pay for health insurance. Administrative and stigma-related barriers traditionally associated with income-related programs such as Medicaid reduce enrollment for eligibles. And while new subsidized programs designed to be less stigmatizing, to be more like enrolling in private health insurance plans, and which are less complex from the standpoint of determining eligibility, have had success at overcoming those types of barriers, even modest premiums charged to enrollees may be sufficient to deter enrollment. Policy makers concerned with budget constraints and a desire not to encourage those already privately insured to opt for subsidized public coverage see charging premiums to enrollees as a mechanism for at least partially addressing both issues. Consequently, the decision of how much to require public enrollees to pay will continue to interact with the social decision of how many uninsured we can tolerate under a voluntary system.

Outside of limited evaluations such as that of the BHP, we still know relatively little about the probability of enrollment in public programs for different types of eligibles (single adults, families, etc. as opposed to children) at different income levels.

---

[110] Washington State Health Care Authority, *BHP Highlights*, vol. 1, Olympia: Washington State Health Care Authority, 1994.

We also know little about the character of demand of low and moderate income workers for public relative to private insurance. In other words, at what premium levels will workers choose to enroll in an employer-group plan instead of a public plan for which they are eligible in order to avoid the public sector administrative systems and obtain a plan for which perceived quality may be greater. Knowledge of such tradeoffs would be very useful in designing public insurance programs to increase participation rates within political budget constraints.

Beyond even program design components such as premiums, administrative processes, outreach, and logistical access to providers, which surely have substantial implications for expanding coverage, more subtle factors play in as well. For example, behavior, attitudes, and training of those responsible for enrolling eligibles in public insurance may reflect state concerns with expanding programs for which they are at least partially financially responsible. These types of factors may be quite important in affecting eligibles desire to follow through the enrollment process and are difficult if not impossible to measure or influence through policy.

Section 5. The Non-Group Market

Almost 24.5 million Americans have some kind of private insurance that was purchased in the non-group market.[111] This group of people and the insurance they buy is very diverse, however, for it includes supplements to the rather parsimonious Medicare benefit package for the elderly (the so-called "medi-gap" market), as well as dental and other more specific policies that some non-elderly buy to supplement their employer

---

[111] Census Bureau, "Health Insurance Coverage, 1999," Current Population Reports, P60-211, September 2000.

provided insurance. The number of non-elderly whose primary insurance was purchased

in the non-group market is much lower, approximately 10.5 million.[112] Four percent of

the poor and 7 percent of those with incomes above 200 percent of poverty buy non-

group insurance. Rural Americans are slightly more likely than urban Americans to buy

non-group.[113] Those who buy non-group insurance are healthier than the uninsured, on

average.[114]

5.1. Institutional realities of the non-group market

Perhaps reflecting their relative sizes, relatively little health economics

scholarship has been focused on the non-group market when compared to the group

market. Chollet and Kirk[115] report that the size of the non-group market varies

considerably across the country, from 15% of the non-elderly population in North Dakota

to less than 5% in Massachusetts. The relative size of the non-group market probably

depends upon the availability of employer-sponsored insurance. Blumberg and Nichols

report that less than 2% of workers who have access to group insurance turn it down and

then buy non-group insurance; the vast majority of workers who have access to both

reveal their preference for group insurance quite clearly.[116] State variation in the

importance of the non-group market also reflects public program generosity, as well as

possibly state regulations which affect the price and nature of non-group insurance sold.

This is the market for which classic adverse selection is the most serious problem:

ceteris paribus, those most inclined to seek non-group coverage are those with higher

---

[112] Pauly, Mark V. and Allison M. Percy. 2000. Cost and Performance: A Comparison of the Individual and Group Health Insurance Markets. *Journal of Health Politics, Policy and Law* 25(1):9-26.
[113] Chollet, DJ. 2000. Consumers, Insurers and Market Behavior. *Journal of Health Politics, Policy and Law* 25(1):27-44.
[114] Pauly MV and AM Percy, op cit.
[115] D.J. Chollet and A.M. Kirk, "Understanding Individual Health Insurance Markets," Henry J. Kaiser Foundation, March 1998.

health risks, and thus insurers have to worry that their applicant pool is not a random draw from the population at large. This is the problem that led Rothschild and Stiglitz to conclude that this market could break down until only the very sickest individuals would pay the requisite high premiums, and relatively few of them could afford to do so.[117] Pauly and Herring, based on their analysis of 1987 National Medical Expenditure Survey data, argue that the these concerns are overstated in real markets since transactions costs force some pooling even in the non-group market (this interpretation is also consistent with Newhouse).[118] Pauly and Herring conclude that the non-group market pools risks about as well as the group market, though non-group insurance remains more expensive due to unavoidably higher administrative loads (by as much as 15-20%).[119]

Swartz and Garnick[120] studied the enrollment experience of New Jersey's Individual Health Coverage Program, and concluded that adverse selection had not occurred even though underwriting had been prohibited. They did note that premiums were relatively high, and showed that good health status and income are highly correlated. Their inference is that price worked – at least in this special case – as an effective risk screening device, since the highest risk individuals could not afford to pay high prices on average. This result raises many interesting issues that deserve further testing with data from a number of states and under a variety of regulatory frameworks.

---

[116] Blumberg, LJ and LM Nichols, 2000, op cit.
[117] Rothschild, M and J. Stiglitz. 1976. Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information. *Quarterly Journal of Economics* 90:629-650.
[118] Newhouse, 98.
[119] Pauly, Mark and Bradley Herring. 1999. *Pooling Health Insurance Risks*. Washington, DC: AEI Press.

[120] Swartz, K. and D. Garnick, "Can Adverse Selection Be Avoided in a Market for Individual Health Insurance," *Medical Care Research and Review* v. 56 # 3 (September 1999).

The Pauly and Herring empirical analysis and the Swartz and Garnick results notwithstanding, insurers in the non-group market – when allowed -- make much more extensive use of techniques designed to protect themselves from the risks of adverse selection than do group insurers: pre-existing condition exclusions, policy riders (which exclude specific conditions or procedures from coverage for the life of the policy), medical underwriting (the process whereby insurers assess an applicant's relative health risk before selling, and either charge higher premiums to individuals whose risk is deemed to be higher than normal (non-standard) for some reason, refuse to cover specific conditions or body parts, or refuse to sell to particular applicants altogether).[121] The success of these techniques help explain the fact that non-group purchasers are healthier than the uninsured, even the though less healthy people should have stronger demand for health insurance, ceteris paribus. The applications of these techniques have engendered repeated calls for legislative reform (they are seen to be unfair to the unfortunate sick and to violate some philosophical views of what insurance is supposed to be about).[122]

Some states and now the federal government have tried market reforms, i.e., restrictions on the behaviors and techniques insurers would prefer to use to protect against adverse selection and segment risks into homogeneous pools.[123] Predictably,

---

[121] U.S. General Accounting Office (GAO). 1996. *Private Health Insurance: Millions Relying on Individual Market Face Cost and Coverage Trade-Offs.* HEHS-97-8. Washington, DC: GAO; Pollitz K, R Sorian, and K Thomas, "How Accessible is Individual Health Insurance for Consumers in Less-Than-Perfect Health?" Report to the Henry J. Kaiser Family Foundation, June 2001; Hall, Mark A. 2000. An Evaluation of New York's Reform Law. *Journal of Health Politics, Policy and Law* 25(1):71-99.
[122] Stone, Deborah. 1993. The Struggle for the Soul of Health Insurance. *Journal of Health Politics, Policy and Law* 18(2):287-318
[123] BlueCross BlueShield Association. State Legislative Health Care and Insurance Issues. December 1999; Marstellar, Jill A., Len M. Nichols, Adam Badawi, Bethany Kessler, Shruti Rajan and Stephen Zuckerman. 1998. Variations in the Uninsured: State and County Analyses. Urban Institute, 11 June. Available online at http://www.urban.org/health/variatfr.html; Nichols, Len M. and Linda J. Blumberg. 1998. A Different Kind of "New Federalism"? The Health Insurance Portability and Accountability Act of 1996. *Health Affairs* 17(3):25-42; Swartz and Garnick, "Lessons From New Jersey," *Journal of Health Politics, Policy and Law* 25(1):45-70.

market reforms produce tradeoffs, not unambiguously increased access, and all empirical evidence to date suggests that non-group market reforms have reduced, not increased, insurance coverage. Simply put, this is because all market reforms -- guaranteed issue (or selling to all comers), guaranteed renewal, limits on pre-existing condition exclusions, restrictions on premium variances, and benefit mandates -- all more or less force a degree of risk pooling that the private market would not obtain under *laissez faire.*

Because of the highly skewed distribution of actual and expected health expenditures -- 10% of any insured population typically accounts for 70% of all spending by that group[124]-- forced pooling raises premiums for more than it lowers premiums for.[125] Thus coverage falls from non-group reform, despite the best of intentions and undoubtedly improving access for the sickest individuals who are often underwritten out of the market altogether.[126] Partly because of this outcome, most states permit non-group insurers to adjust premium rates or refuse to sell altogether based on an individual's or family member's health risk. This imparts a special kind of endogeneity to the price of health insurance for those seeking coverage in the non-group market, which we discuss in relation to the empirical literature reviewed below.

5.2. Candidates for non-group purchase

Basically, candidates for insurance in today's non-group market are individuals who have no lower cost alternative source of insurance, i.e., either employer-sponsored or a public insurance program. There are three classic types of potential candidates: (1) the self-employed; (2) workers whose employers do not offer health insurance or are not

[124] Berk, M and A Monheit. 1992. The Concentration of Health Expenditures: An Update. *Health Affairs* 11(4):145-49.

[125] Nichols, Len M. 2000. State Regulation: What Have We Learned So Far? *Journal of Health Politics, Policy and Law* 25(1):175-196.

themselves eligible for what is offered for some reason, and (3) non-workers who are not eligible for Medicaid or similarly comprehensive public insurance program. We examine what is known about each group's demand for non-group insurance below.

The self-employed. If a business is incorporated, then 100% of an employer-provided premium payment is deductible as a business expense and excluded from owner or employee income tax liability. Beginning in 1986, self-employed owner-operators of unincorporated businesses and partnerships were allowed to deduct 25% of the cost of their premium from their federally taxable income. While a new tax subsidy, this still left the unincorporated self-employed disadvantaged relative to the incorporated self-employed and to wage earners of incorporated employers that offered health insurance. Furthermore, the new deduction for the unincorporated self-employed is allowed only if the self-employed also provide coverage for any employees they may have, and is not allowed if these owner-operators have access to employer sponsored insurance through a spouse or through another job as an employee which they may hold.

Monheit and Harvey reported that in 1987, 25% of the self-employed were uninsured (compared to 15% of wage earners), 25% of the self-employed sponsor a small group plan for themselves and their employees, 28% have coverage through their spouse's employment, and 22% of the self-employed purchase non-group coverage (compared to 4% of wage earners).[127] In this section we focus on the self-employed without spouse offers or employees, for these are the candidates for the non-group market.

---

[126] GAO, 1998, op cit.; Pollitz et al. op cit.

[127] Monheit, AC and Harvey. 1993. Sources of Health Insurance for the Self-employed: Does Differential Taxation Make a Difference? *Inquiry* 30(3):293-305.

Monheit and Harvey's paper is focused on showing that the unincorporated self-employed are less likely to have group insurance than the incorporated self-employed. But Monheit and Harvey also report that 30% of the self-employed with income below 125% of the poverty level purchased non-group insurance in 1987, a much higher percentage than for any other group of low income individuals.[128] Thus, the 25% deduction, which is not available to non-self employed non-group candidates, is important in inducing even low income self-employed to purchase health insurance. Interestingly, Monheit and Harvey find that poor health status had no effect on the probability of any self-employed person's likelihood of obtaining employment-related health insurance.

Of course, Monheit and Harvey included no price variable -- not load, total premium, nor marginal tax rate -- in their empirical analysis. Thus, they estimated a demand equation of the form

PROB of ESI = Φ(incorporated status, X, ε; P*),

where X is a vector of socioeconomic, health status, and attitudinal variables, and ε is the error term. Since P* is omitted, the estimates of the coefficients of the X variables are unbiased only if P* is orthogonal to X.. The practical extent of the problem is difficult to assess in the absence of data on the premiums the self-employed business owners actually faced in their small group marketplaces. Certainly the load is unlikely to vary much if at all for the small groups in Monheit and Harvey's self-employed business sample. But if one accepts our conclusion from the theoretical discussion (section 2) that the appropriate price is not the load but the opportunity cost of consumption that must be foregone to

---

[128] Chollet, op cit.; Pauly MV and AM Percy, op cit.

purchase the insurance, then the premium and P* relevant to any self-employed person will likely differ by family size and health status, both variables in the X vector. Thus, at least some of the coefficients in their multivariate employment related coverage model may suffer from omitted variable bias.

Gruber and Poterba used the introduction of the self-employed health insurance deduction in 1986 as a natural experiment in price reduction, from which they deduced an elasticity of demand for the self-employed of -1.8, 3-5 times larger than the elasticity of demand usually estimated for others in the non-group market.[129] They use the Current Population Survey, comparing coverage of the self-employed to the employed in order to control for changes in the economy that might have affected health insurance coverage, as well as comparing the self-employed before and after the tax reform. Their innovation was to use the change in tax price as the relevant price change to model. This was clearly appropriate for this natural experiment's case. The question that remains is, how applicable is this elasticity to non-tax price changes for the non-self employed? This study may be a good example of a well done paper that cannot be generalized.

Workers who aren't offered insurance by their employers. Marquis and Long wrote the most frequently cited paper that estimates demand for health insurance by this group.[130] To complement the worker characteristics from both CPS and SIPP data, they use premiums taken from a price list provided by a prominent non-group insurance company. The price list included a premium for each 3-digit zipcode for a standard product. The premiums also varied by age, sex, and type of coverage (self-only,

---

[129] Gruber J and J Poterba, "Tax Incentives and the Decision to Purchase Health Insurance: Evidence from the Self-Employed," *Quarterly Journal of Economics*, vol. 109, pp. 701-733, August 1994.
[130] Marquis MS and SH Long. 1995. Worker Demand for Health Insurance in the Non-Group Market. *Journal of Health Economics* 14(1):47-63.

employee and spouse, employee and dependents, family). Marquis and Long aggregated

zip-code level premiums at the MSA and CMSA level using county population weighted

averages. Thus, Marquis and Long used premium prices -- reflecting opportunity cost,

not administrative load -- that were not actually observed by individuals but which were

presumed to be representative of the prices faced by workers with different family

structures and in different locales. Swartz used a similar approach, for non-group

purchasers and the uninsured, with price data from a non-group insurer with much larger

market share (Blue Cross Blue Shield plans,nationwide).[131]

This approach addresses two key problems often encountered in health insurance

demand estimation. First, when worker characteristics that affect demand are used by the

insurer to adjust premiums, the price is endogenous. But if the prominent insurer's

premium is correlated with but not identical to the actual premium faced, this premium

proxy is more exogenous to the individual than the premium actually faced. Second, the

insurer's price list provides a relevant and presumably unbiased way to impute premiums

to those who did not buy anything and for which no price is observed in most survey data

sets.

If there is some pooling in the non-group market, then no one faces a premium

completely unique to themselves. In that way, the actual (or potentially) observed

premium is always somewhat exogenous to the individual, for it will be based on

expected costs for "similar" people. The empirical problem is, "similar" can be quite

similar in the nongroup market, wherein underwriting is most stringent. That is, insurers

may have quite a large number of different groups -- defined by age, sex, and a large

---

[131] Swartz, Katherine. « The Demand for « self-pay » Health Insurance: An Empirical Investigation."
Urban Institute Working Paper, 3308-04.

number of different health conditions -- to which they charge different prices. The question that must precede complete acceptance of Marquis and Long's or Swartz' results for this population of workers not offered employment-based insurance is this: do premiums in real life vary systematically with any variables that were included or excluded in their demand estimation?

The non-group purchase regression using CPS data does not have a health status variable, whereas the analysis based on their SIPP sample does. (Swartz used CPS people and so had no health status variable in her analysis). We expect offered premiums to vary with health status in the nongroup market -- not because insurers "rate up" any single individual but because those with discernable and costly conditions are grouped with others with similar conditions for rating purposes, given age, sex, geography, and type of coverage. But the CPS analysis must maintain the assumption that premium offers are independent of health status. Comparing their SIPP analysis to their CPS analysis, we may infer some of the consequences of their premium price variable ignoring health status.

We note that the price coefficients are roughly similar across samples. However, the price coefficients by income class (they compute a price coefficient for those above a below 200 percent of poverty) are not significantly different from each other with the SIPP analysis, which includes health status, whereas the CPS model indicates that the low income population has a significantly greater price responsiveness than the higher income population. We also note that coefficients on some of the socioeconomic variables vary quite a bit across the samples and occasionally lose significance (e.g., female head, married, number of children, race, education and age).

This comparison of their results leads us to conclude the following. Individual health status is correlated with the premium measure and that is why the CPS coefficients and significance levels are not mirrored in the SIPP analysis. While it does not significantly affect the overall price elasticity estimates, it does mean we may not conclude that low income workers have higher elasticities than the rest. It also means the search for better measures of price and health status should continue, and that the research community is not ready to inform policy makers about relative elasticities by income class just yet.

A study by Pollitz et al suggests individuals with health problems, even fairly mild ones (e.g., hay fever), will, when seeking health insurance in the non-group market, face a fairly daunting set of choices.[132] Specifically, these authors point out how common it is for insurers to refuse to cover someone at all or to permanently limit coverage such that body parts/systems which required health service utilization in the past (even if treatment was completed and no above average future use is expected) are excluded from any policy offered. Second, their data confirm that price is highly variable in this market, so that a worker may get a very high quote and stop looking, or find that benefit packages are limited by exclusions that are related to those health conditions which people have at the moment. This observed benefit package adjustment drives home the point about controlling for benefit package generosity when estimating health insurance demand equations. Perhaps most surprising, their findings suggest that premiums vary across insurers even when their exclusion rider response to a real person's condition is identical. This premium "noise" may drown out a lot of potential purchasers, and this could affect the real and estimated probability of buying non-group insurance.

As long as the noise is random, this should theoretically only impart some inefficiency to price elasticity estimates. However, the larger question is, does the deviation of the actual offered premium from the measured premium vary systematically with some other variable that is included or excluded from an econometric specification like Marquis and Long's or Swartz'? If the deviation is as correlated with some included variables as it would appear to be (e.g., health status), then de facto omitted variable bias is present in the included variable's coefficient estimate. If the deviation is correlated with an excluded or unobserved variable, e.g., the presence of specific health conditions which prompt higher premiums or policy riders or both (Pollitz, et al), then all coefficient estimates are potentially affected by the omitted variables. Combined with the fact that some individuals face an infinite price for non-group coverage (they are denied policies at any price due to health status factors), and the product itself is not uniform (benefit packages offered and exclusion riders required vary by health status), it is possible that estimating a precise elasticity of demand is not realistic. The practical significance of these problems are difficult to assess with currently available data, but Pollitz et al's results -- which showed a wide variance in quoted prices and products based on the presence of specific health conditions -- suggest that it is significant.

This is not to suggest that we do not believe that people are uninsured because premiums are high. Price responsiveness is present. The questions are, have we found elasticity estimates that are free enough from potential first order biases so that we can base policy inferences on them? And are we confident we have obtained valid structural coefficients on demand side variables that also affect price or the price category a non-group applicant is placed in? Marquis and Long and Swartz (whose elasticity estimates

---

[132] Pollitz K, et al., op cit.

are similar) probably have the best price measures extant in the literature, but we would recommend using ranges of their elasticity estimates for all situations of real policy analysis, since there is legitimate doubt about the unbiasedness of even their price measure. For the future we recommend constructing price data like Pollitz did, based on specific conditions that are also measured in the survey data set used -- perhaps the NHIS or the CTS household survey --and elicited quotes, to use in empirical work of demand elasticities. The inconsistencies in the products offered and the benefits covered, combined with the fact that some individuals are excluded from access to the products completely, pose an even more difficult empirical estimation problem.

Section 6: Concluding Remarks on a Research Agenda

This paper has explained what we do and do not know about why some Americans remain uninsured. This concluding section lays out an agenda organized around two types of gaps in the knowledge base necessary to inform coverage expansion policy choices: (1) conceptual gaps; and (2) empirical complexities.

Conceptual gaps.

Is the absence of health insurance coverage a market failure or not? Answering this question is a pre-requisite for policy analysis, so it is somewhat surprising that so few economists have addressed this issue directly. Part of the complexity of course comes from the inability to measure the social value of coverage as an externality. But part of it also comes from evaluating when constraints — like high non-group loading factors — prevent purchases that would have occurred at lower and feasible prices because these lower prices could not be observed. Why are these prices not observed? Is there an

informational intervention that could improve efficiency in this market? These are questions with which to begin this line of inquiry.

How do worker preferences affect firm decisions? Perhaps the most basic problem, at its most general level, is that we do not know how heterogeneous worker preferences are taken into account by different kinds of firms before their decisions about offer, eligibility, and employer share are made. This makes it difficult to assess the efficiency of, for example, current eligibility patterns (conditional on offer), and fairly problematic to derive predictions about how employers might respond to fundamental changes, like replacing the current tax preference for employer premium payments with individual tax credits. Principle-agent models could perhaps be of use here, but our sense is that relatively little creative thinking has gone into testing hypotheses about worker-firm interactions that seem fairly basic to understanding the health insurance choice set which a majority of Americans face each year. These issues span pension and other fringe benefit decisions, by the way, so perhaps a unified conceptual approach would be best.

What IS the appropriate wage incidence assumption? We do not know the extent of wage incidence by type of firm and worker, nor do we really have a clear idea of the mechanism by which wages are traded for employer premium payments. Some economists are comfortable asserting that in the long run, wages must adjust to compensate, and others (like us) worry that the short run implications of incomplete incidence could be quite debilitating for the success of an individual tax credit proposal that limited applicability to the non-group market. If economists assure policy makers

that workers will get their wages raised, then employer dropping would not be a major concern. We are uncomfortable with such assurances based on current evidence.

What are the major implications of imperfect sorting of workers into jobs with different compensation packages? Search costs are real, and in any event inertia would prevent perfect sorting. But if workers cannot find the jobs they really want — with health insurance and somewhat lower wages attached — then there could be more of a market failure in private health insurance access than previously thought, and perhaps non-employment based mechanisms for insurance purchase should be investigated more thoroughly. In addition, imperfect sorting creates additional complexities with aggregating heterogeneous worker preferences. So, assessing the links between job choice and health insurance options and choices is an important area for future empirical work

What are the intangible elements of preference for private vs. public insurance products on the part of potential enrollees? There is evidence that people turn down "free" insurance, both public and private. Why? We have some hypotheses and some limited evidence, but we really do not understand the extent how low income individuals weigh the pros and cons of public vs. private coverage. Policy makers need to know which kinds of people prefer each, why, and how much are they willing to pay for that preference, given a choice.

Empirical complexities.

Prices are inherently endogenous. This is especially true in the non-group market, but is also true in the group market as well, especially when one considers job choice — with different health insurance packages attached — as part of the question.

Techniques for measuring the presence of specific health conditions that insurers consider must be developed for structural demand estimation to proceed. Only structural estimation can adequately inform policy makers tying to gauge likely responses to new subsidies or other price changes.

Benefit packages are heterogeneous and differences among them, especially in the non-group market, are hard if not impossible to measure well. This is extremely important if inferences about estimated demand relations are to be drawn. Given the preponderance of exclusions in the non-group market, as well as network and coverage differences in the group market, structural equations that do not control for benefits are based on the heroic assumption that all benefit packages are identical. The consequences of this assumption being false in systematic ways should be explored in all empirical work forthwith.

To what extent are uninsured person years comprised of workers in transition/turnover? Before we can determine an appropriate policy tool for increasing health insurance coverage, researchers need to indicate the extent to which being uninsured is a result of labor market transitions — which end and from which most workers settle into jobs with offers attached — and to what extent being uninsured is more closely tied to low compensation but permanent labor force status. Until we can determine the relative importance of these two rather different sources, it is premature to recommend employer-based or any other type of specific subsidies as an effective remedy.