When Worlds Collide: Public Policy, Private Markets, and the Price of Health Insurance

by Katie Merrell

The health insurance market in the United States is shaped by a number of public policies and private market characteristics that create the insurance choices faced by those under age 65. Proposals to expand health insurance coverage differ in the degree to which they take account of the public and private aspects of the market and the likely effects of changes in one arena on the other. Indeed, the notions of public versus private insurance and insured versus uninsured oversimplify the U.S. health insurance market.

One of the challenges in understanding how public policy and private markets interact is that the concept of "health insurance" is poorly defined. As the growing body of literature on "underinsurance" suggests, there are people covered by health insurance who nonetheless have to pay for more of their personal health expenditures than they expect to. Insurance policies vary in both price and comprehensiveness of benefits. As a result, analyses based on reported premiums paid, whether for the employee share of group benefits or for individually purchased non-group policies, are not like price analyses in markets where the good studied has essentially the same function across the product models available; for example, all cars provide transportation, albeit with different amenities and fuel efficiency. Without detailed information about what benefits are included in an insurance policy, premium data are difficult to interpret. Being insured is not associated with a specified level of coverage in every case, limiting the meaning of discussions of "the insured" versus "the uninsured" and challenging analysts to account for differences in benefits when comparing premium data.

The U.S. health insurance market offers an array of products that vary in price and value, which suggests that this market functions much like other goods and service markets, where one can buy Yugos or Mercedes-Benzes and can spend the night at a Motel 6 or at the Ritz-Carlton. As the result of public policy, private market characteristics, and the interaction of the two, however, there are important differences between health insurance and other markets. Anyone with enough money to buy a Mercedes-Benz can walk into a dealership, hand over the cash, and drive away in a new car. Conversely, someone with enough money to pay the premiums of a comprehensive policy provided by a firm at which the potential purchaser does not work cannot necessarily buy that level of coverage at that price. As a result of the U.S. employment-based insurance system, publicly provided insurance, the tax treatment of health insurance premiums, and the price difference between individual and group-sponsored policies, people face different price and value combinations depending on whether and where they work, factors highly associated with both their health status and income level.

This paper explores the effect of key public policy and private market characteristics on the price of insurance, standardized for the actuarial value of benefits, across income lev-

els[137] and discusses the factors that drive the price per value available to consumers. The analysis builds directly on conventional wisdom, data, and analyses of the U.S. insurance system presented by others. The first section explores the notions of price, value, and consumer choice in the health insurance market. The second section explores key aspects of public policy—publicly provided insurance and tax-subsidized private insurance—and is followed by a section reviewing the price and value of private insurance in the individual and group markets. The fourth section examines the combined effect of public and private features on the effective price of health insurance across the income levels, and the final section explores the relationship between after-tax price and income as a means for comparing alternative proposals to expand insurance.

This analysis focuses on the price of health insurance and the actuarial value of different insurance products in an effort to create a policy analysis tool that integrates public and private effects on the net price of insurance to consumers. The closely related, and arguably more important, questions of the relationships among insurance status, health service use, service prices, health status, and individuals' total health expenditures are not addressed.

The Price and Value of Health Insurance

An individual facing the choice of whether to buy health insurance and which policy to choose presumably weighs the cost of whatever policies are available, the probability of needing health care services, the cost of expected care under each policy, and what health care would cost without any insurance.[138] Balancing the cost and value of alternatives in this market is not inherently different from making the same calculation in other markets. Whether the added safety features of a Volvo, for example, are worth the higher price raises similar issues: what are the odds that my family will really ever benefit from those features, and does that benefit justify the additional cost?

The price (premium) of a particular insurance product is inversely related to the likely out-of-pocket costs of care: comprehensive policies that ensure low out-of-pocket costs even when high levels of care are used are more expensive than those that absorb less of the financial burden of illness. At the same time, some service needs such as routine preventive office visits, are predictable and relatively inexpensive, while the use of other potentially life-saving services, such as live-donor liver transplantation, are rare but very costly. As a result, the insurance consumer is faced with a broad array of options that differ in both price and value, depending on the specific services covered.

In the traditional context of fee-for-service care, plan value is inversely related to how much a policy holder expects to pay out of pocket when services are used—people in high-value plans expect to pay little beyond their premiums for health-related services, but for those in low-value plans, premiums account for relatively less of total health spending. Plan value is determined largely by cost-sharing requirements, including annual out-of-pocket caps, and by benefits package design, including lifetime benefits caps. There are more subtle factors that increase plan value, however, such as whether the insurer has negotiated rates with providers, which

[137] Income distribution, rather than health status, is used as the organizing principle because it has a tradition as the basis for public policy making in the United States. With few exceptions, such as pregnancy and end-stage renal disease, health status has not been used to identify people as eligible for public programs.

[138] The insurance value of insurance (that is, insulation from risk) is more important to risk-averse consumers than it is to risk-neutral or risk-taking consumers. It can be thought of as either an additional aspect of this decision or as included by individuals in their assessment of the probability they will need care, the cost of care, and the proportion of these costs covered by different policies.

lower not only the insurer's cost but also the dollar cost of a percentage-based copayment. Ironically, as a result of the prevalence of such negotiated rates, those without insurance typically face the highest provider prices. In general, the notion of plan value becomes more complicated in the case of managed care, where this traditional insurance concept must be applied to the combination of insurance and service value represented by different plans. Ease of access to specific services and providers may be a better indicator of plan value than out-of-pocket costs, although they may be highly correlated if those individuals in plans with tight access control end up paying directly for out-of-plan services to circumvent plan limits.

The actuarial value of insurance policies provides, at least theoretically, a summary of the value of all aspects of a policy, allowing for comparison of different insurance policies through a single measure rather than having to assess the relative importance of, for example, prescription drug coverage compared to a specified annual out-of-pocket cap. Analysts have used the actuarial value of plans to assess whether policy holders are "underinsured" compared with some benchmark,[139] as a tool for modeling consumer choice of plans in Medicare managed care,[140] and as a way to think about defining a minimum benefits package.[141] Health plan actuarial value can be thought of as a scale from 0 to 100, where 100 equals first-dollar coverage for all conceivable health services with no limits. Lack of (or limited) coverage for particular services, lifetime caps, limited provider panels, and cost-sharing provisions all reduce the actuarial value from this maximum value.

Economists argue that a limitation of using the actuarial value of insurance products as an indicator of their value to consumers is that it does not measure *insurance* value. In other words, risk-averse individuals derive more value from a particular insurance product than do risk-taking individuals, regardless of the product's actuarial value. Risk-averse individuals are more likely to buy even a high-price, low-value plan if it is the only one available to them, while risk-neutral or risk-taking individuals may be more likely to go without insurance in this instance. This is not a critical problem, however, to the extent that it is related to the heterogeneous personal preferences that underlie consumer choice—not everyone who can afford the high-end Mercedes-Benz in fact buys one.

The analysis below uses the concept of the price per actuarial value unit to explore how public policy and private market characteristics affect individuals at different income levels. The measure can be thought of as a summary of the price of insurance plans faced by consumers grouped by income level, where the actual premiums have been adjusted for differences in benefits. The main advantage of the price per value is that it avoids defining some package of benefits as appropriate for everyone or more desirable than other packages. The increasing concern that people are underinsured is not proved with information about lower premiums (suggesting less extensive coverage) but rather with data showing continued high or increasing premiums despite eroding benefit packages. For example, the Center for Studying Health System Change reports that small employers in 12 studied communities have both high premium increases (14.5 percent for those with 3 to 49 employees, compared to 10.2 percent for those with 200+ employees) and are reducing the value of offered plans to employees through increased cost sharing and reductions in serv-

[139] P. F. Short. "Hitting a Moving Target: Income-Related Health Insurance Subsidies for the Uninsured." *Journal of Policy Analysis and Management 19* (3) (Summer 2000): 383–405.
[140] K. Merrell. "Medicare+Choice Benefits and Premiums: How Do They relate to One Another and to Enrollment?" Office of the Assistant Secretary for Planning and Evaluation, Office of Health Policy, December 2001.
[141] S. Glied, C. Callahan, J. Mays et al. "How Comprehensive are Standard Private Health Insurance Plans?" Prepared for the Commonwealth Fund, February 2003.

ices covered, among other measures.[142] Therefore, data on premiums without information about value are difficult to understand. When consumers and advocates claim that certain forms of coverage "aren't even available" in the individual market, economists conclude that they really mean "for an amount within anyone's budget," based on the assumption that for enough money, an insurer would issue any policy. Actually analyzing price per actuarial value unit of insurance, however, is difficult because data about actual insurance coverage held by individuals typically do not include sufficient benefit details to calculate plan value. Consensus that there is less value in the individual, non-group market suggests that reported premium differences understate the difference in price per unit value across different parts of the insurance market. As a result, simulations of alternative proposals to expand insurance based only on premiums may misstate the potential costs of improving the nation's insurance status as well as the interactions between public policy and private market characteristics.

The price per unit of actuarial value provides a helpful tool for exploring public policy and private health insurance markets. By normalizing for variation in the value of benefits, it provides a single measure for thinking about supply in the U.S. health insurance market from the consumer's perspective.

Health Insurance: Public Policy

Publicly financed insurance is the most prominent health insurance-related public policy in the United States. Through Medicaid and the State Children's Health Insurance Program (S-CHIP), federal and state governments provide insurance to nearly one-fifth of the nation's non-elderly population.[143] Reflecting the typical private-public dichotomy of insurance provision, policymakers considering Medicaid expansions during the late 1980s and S-CHIP in the late 1990s were concerned that raising the income cutoff for Medicaid eligibility would cause large numbers of people just above the then-current income eligibility levels to switch from the private market into publicly provided insurance. An extensive body of literature has evolved assessing the potential magnitude of this "crowding-out" effect.[144]

In its simplest form (shown in figure 1), this notion suggests that raising the income level for public insurance eligibility will move everyone with incomes between the old and new eligible income levels out of the private market, where insurance costs $\$P_P$, into the public program, where insurance costs $0. The final version of S-CHIP allows states to establish sliding-scale premiums for those at higher eligible income levels, so the price of public insurance increases gradually with income among those eligible (see figure 2). For example, there were three premium levels for California families of four in 2000: those at the poverty level paid $8 monthly; at 150 percent to 185 percent of poverty, they paid $14; and at twice the poverty level, they paid $27 a month. The actual slope of this sliding-scale premium for expanded public coverage is state-specific, as are the income levels at which the price of coverage jumps to the market price and the actual size of the insurance price difference for those whose incomes are just above the maximum eligibility level.

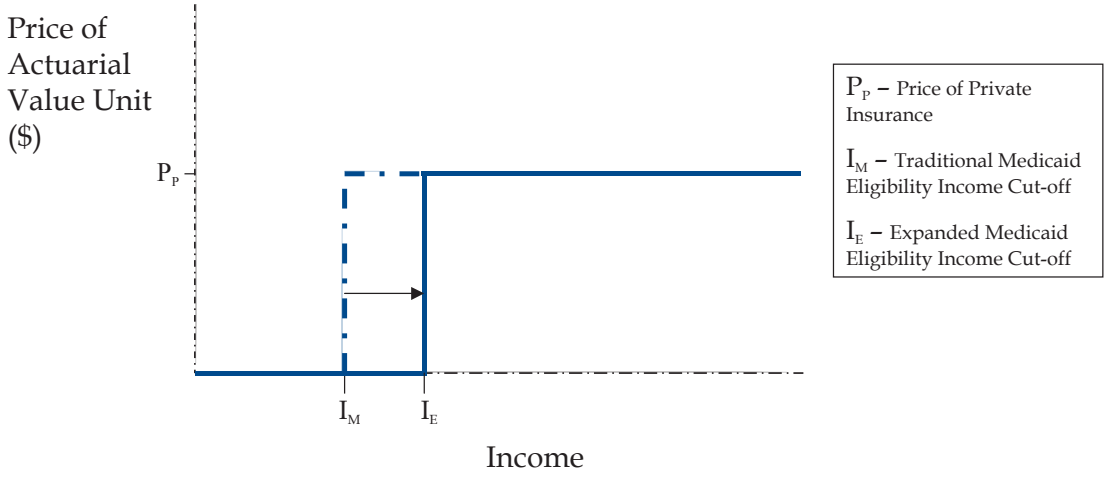
[142] Center for Studying Health System Change. "Cutting Back But Not Cutting Out: Small Employers Respond to Premium Increases." Issue Brief No. 56, October 2002.

[143] Institute of Medicine. *Leadership by Example: Coordinating Government Roles in Improving Health Care Policy*. Washington: National Academies Press, 2002.

[144] D. M. Cutler and J. Gruber. "Medicaid and Private Insurance: Evidence and Implications." *Health Affairs 16* (1) (Jan.–Feb. 1997): 194–200; L. Dubay. "Expansions in Private Health Insurance and Crowd-out: What the Evidence says." Kaiser Family Foundation, October 1999, http://www.kff.org/content/1999/19991112m/dubay.pdf; L. Shore-Sheppard, T. C. Buchmueller, and G. A. Jensen. "Medicaid and Crowding Out of Private Insurance: A Reexamination Using Firm-Level Data." *Journal of Health Economics 19* (1) (January 2000): 61–91.

FIGURE 1

Effect of Raising the Eligibility Limit of Income-tested Public Insurance Program on the Price of Insurance by Income



The price drops from $P to $0 for those between the traditional eligibility level and the new level.

FIGURE 2

Effect of a Sliding-Scale Premium Public Insurance Program on the Price of Health Insurance by Income

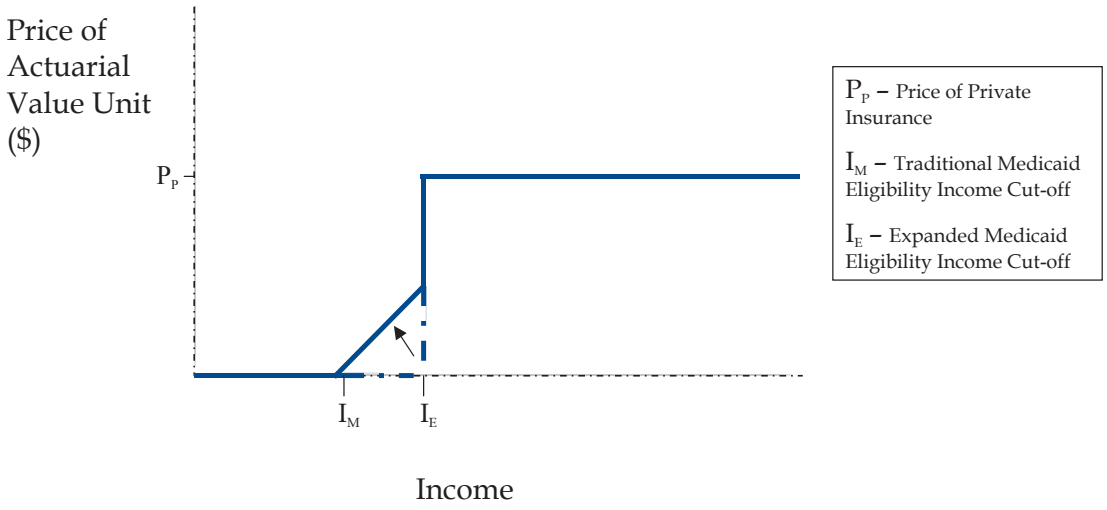
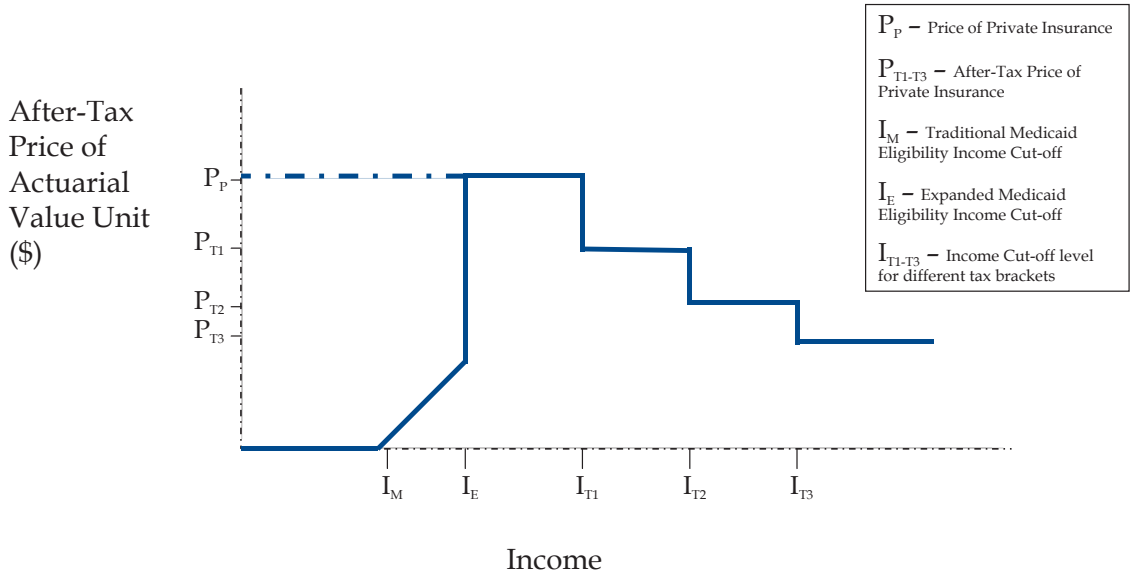


FIGURE 3

Combined Effect of Public Policy on the Price of Health Insurance by Income



In addition to providing insurance to low-income people, the income tax code encourages certain forms of insurance. In particular, employer-based insurance is tax advantaged for the firm and its employees, who can also use pre-tax dollars to pay their share of premiums. According to Sheils and Hogan,[145] federal tax collections were $111.2 billion lower than they would have been in the absence of the tax advantage given to employer-based health insurance.[146] As a result of the tax treatment of health insurance premiums, the effective after-tax cost of a particular health insurance policy drops as the marginal tax rate increases with income.

From a public policy perspective only, therefore, the effective after-tax price of a particular amount of health insurance coverage is zero for those below the income eligibility level for public insurance (assuming they meet other program criteria); it peaks for those just above the maximum income level for publicly provided insurance; and it drops at income levels where the marginal tax rate increases (see figure 3). This simple view ignores the fact that many people below the income eligibility level are *not* eligible for public insurance because they fail to meet non-income criteria. As a result, low-income people face one of two prices—the private insurance price (P_P) or $0—depending on the non-income eligibility requirements of public insurance. Tax subsidy proposals aim to use federal tax policy to reduce the after-tax price from P_P for low earners, presumably those with incomes below or possibly slightly above I_E.

[145] J. Sheils and P. Hogan. "Cost of Tax-Exempt Health Benefits in 1998." *Health Affairs 18* (2) (March–April 1999): 176–81.

[146] Historically, self-employed individuals who buy themselves insurance enjoyed half the tax advantage of those in group plans, but current policy now provides 100 percent deductibility for these taxpayers. Others who buy policies in the non-group market receive no tax break, paying after-tax dollars for their entire premium.

In summary, the key public policies that affect the consumer's price of insurance are the income (and non-income) eligibility requirements for public insurance and the tax-advantaged treatment of spending on health insurance. The primary effect of these policies is directly on after-tax prices, rather than on the value of insurance products. These factors have a secondary effect, through the incentives they create in the private market, that affects both premiums and value.

Health Insurance: Private Markets

The price/value relationship in the private market is driven primarily by whether products are purchased individually or through groups such as unions and employers. The price per actuarial value (or, similarly, product value for a given price) differs widely between these two, with prices substantially higher in the individual, non-group market. Glied et al.[147] document the difference in actuarial value between individual and employer-sponsored plans held by individuals to be about 5 percent at the median. This observed difference understates the difference in value *faced* by people in the two groups, since the probability of being insured differs between those with access to employment-based coverage and those without such access. Among group-sponsored plans, there appear to be differences in price and value by group size, with smaller groups facing higher price per actuarial value than larger groups. The small-market reforms implemented by most states in the mid-1990s were designed to reduce the price-value differences between the small- and large-group markets, largely by reducing the variation in premiums across groups.[148]

Lower-income people are less likely to have access to group coverage. For example, Pauly[149] estimates that among the uninsured, only 12 percent with incomes below the poverty level have access to group insurance (directly or through a family member); in contrast, 36 percent of those with incomes at 100–200 percent of poverty have such access. As a result, low-income individuals not eligible for public insurance are more likely to face the non-group market's high prices than are high-income people (see figure 4). The share of people with access to lower-price group products increases with income, so the mean income-specific price per value unit falls as income rises. Among those with private insurance of any type for the entire year, low-income people are more likely to report they face financial or insurance-related barriers to care, again suggesting that the actuarial value of insurance that people buy increases with income.[150]

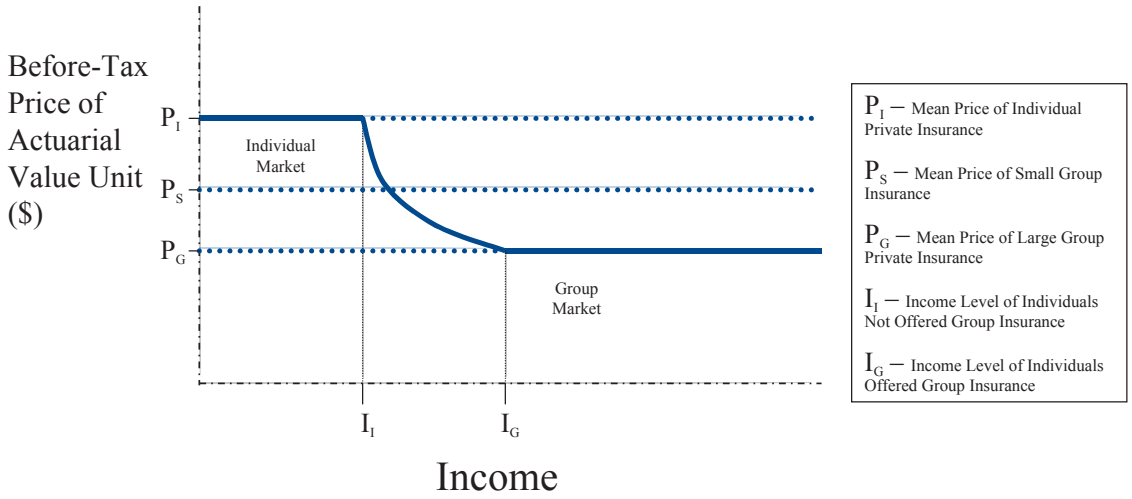
Relative to the non-group market, the price per unit value is lower for employer-sponsored coverage for three reasons: employer subsidy of premiums, risk selection, and administrative costs. The size of the employer subsidy has dropped steadily since the postwar period, when employers typically paid the entire premium, but it still represents an important reduction in the price actually paid by the insured in most group-sponsored products. The size of the price difference due to risk selection has been studied widely but remains difficult to quantify. Strategies such as excluding coverage for pre-existing conditions and limiting certain types of benefits exist largely as risk-selection tools for insurers, since the value reduction they represent is of more importance to high-risk individuals than

[147] Glied at al., 2003, op. cit.
[148] Physician Payment Review Commission. *Annual Report to Congress, 1995*. Washington: Author, 1995.

[149] Pauly M. Herring B. "Expanding Coverage via Tax Credits: Trade-offs and Outcomes." *Health Affairs*. *20* (1):9-26, 2001 Jan-Feb
[150] Based on analysis of individual data from the Medical Expenditure Panel Survey (MEPS) 1999 household survey data, where the financial and insurance-related reasons respondents did not receive care included "could not afford care," "insurance company would not approve/cover/pay," "pre-existing condition," "insurance company required referral—could not get," and "doctor refused family insurance plan."

FIGURE 4

Effect of Correlation between Income and Source of Private Insurance on Mean Price of Available Insurance by Income



At incomes below I_I, few people have access to group-sponsored insurance, so the average price they face is P_I. Access to group products grows with income and is virtually universal for incomes greater than I_G, where the price levels off at P_G.

to those at low risk. As discussed at length when many states instituted insurance market reforms in the mid-1990s, legislative efforts to lower premiums for high-risk individuals and small groups through fewer opportunities for risk selection must be weighed against the likelihood that higher premiums will cause low-risk individuals and groups to drop coverage. Essentially, this means that efforts to improve the value of these products comes with a price tag that will chase away low risks, thereby raising premiums further for those who remain in the insurance market.

Finally, non-group insurers argue that their administrative costs are higher because they incur marketing and application processing costs that are borne by the human resource departments of firms offering group products. Pauly[151] argues that these costs in the non-group market may be unnecessarily high, citing the drop in administrative costs of automobile insurance that occurred when national firms began bypassing insurance agents and offering direct-to-consumer products.

In addition to these direct effects on the price per unit value, employment-based insurance likely has a number of secondary effects on the insurance market. First, when total compensation includes a mix of wages and benefits such as health insurance, nominal wages act as an imperfect price signal in the labor market. This creates the potential for selection effects that lead to inefficient labor allocation and health risk pooling. Second, this system makes employers become health insurance agencies, a role for which they may be poorly suited.

The mean price per unit value as a function of income (figure 4) reflects the mix of people buying in each of the three markets at a particular income level and the actual levels of P_I, P_S, and P_G. The fact that these different prices

[151] M. Pauly, A. Percey, and B. Herring. "Individual versus Job-Based Insurance: Weighing the Pros and Cons." *Health Affairs 18* (6) (Nov.–Dec. 1999): 28–44.

reflect at least in part the risk selection that has occurred into each of the three suggests there is a complicated relationship among the three. To understand the price per unit value across the income distribution, how it has been changing over time, and how policy affects it, the key question is to understand the effect on price per unit value of risk selection into and out of the individual and small-group markets relative not only to uninsurance but also to group products. As discussed below, some reform proposals express the direction and magnitude of these selection effects; others do not.

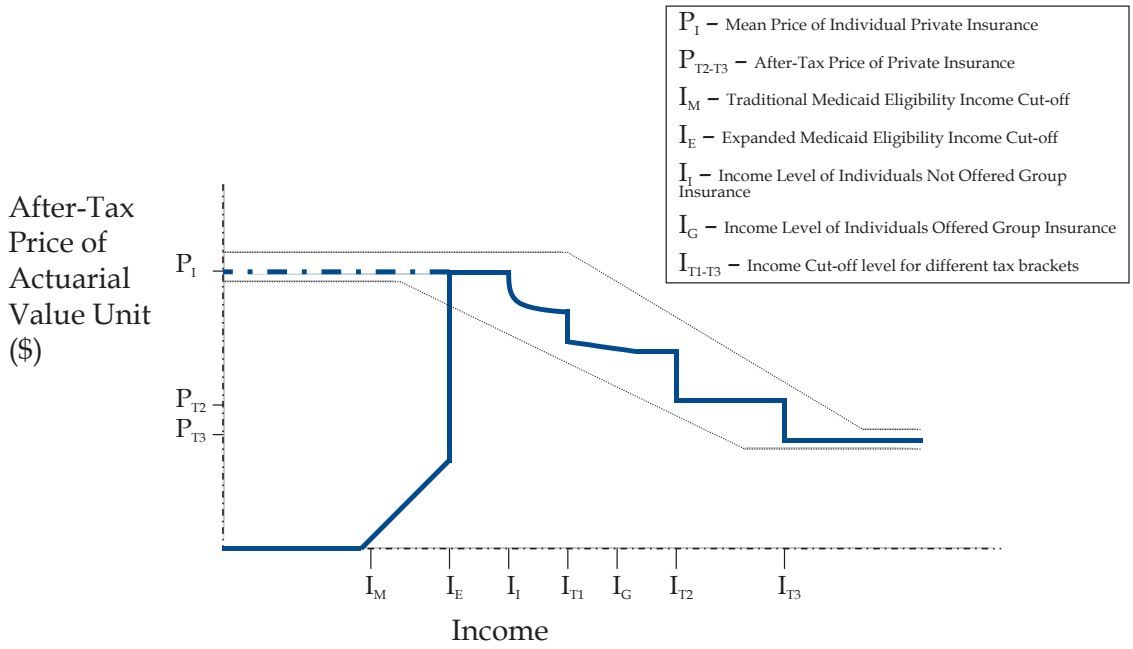
Within the private market, then, the key factors that affect the price per value borne by the consumer are the share of the premium paid by the employer, risk selection, and administrative costs. The first and third factors appear to affect premiums directly, while the second may affect the value of offered products more directly in different segments of the private market.

After-Tax Price as a Function of Income and Its Role in Insurance Purchase

This individual-versus-group private market exists within the public policy regimes described earlier. As a result, some low-income consumers who do not have access to group products are able to choose the free or sliding-scale public program while others are not (see figure 5). Those with incomes above the public program's eligibility level operate exclusively in the private market. Those closest to the eligibility level are those people in the private market least likely to have access to a group product. As a result, within the lowest income tax brackets, the mean after-tax price per actuarial value unit falls as the share of people at each income level with access to group products increases. This within-tax-bracket effect

FIGURE 5

Combined Effect on Public Policy and Private Markets on Mean Price of Insurance by Income



Note: Dotted lines indicated two standard deviations around the mean.

likely disappears in higher tax brackets, where access to group products is widespread. At these higher income levels, consumers benefit from the tax treatment of their spending on health insurance, the explicit subsidy provided by their employers, and the risk selection and administrative cost savings associated with group products.

The actual shape of the after-tax price per value unit function depends on several public policy and private market characteristics. The after-tax price as a function of income as represented in figure 5 is based on several assumptions about the relationship between key publicly determined income levels, such as the maximum eligibility for expanded public programs (I_E) and income-tax bracket cutoffs (I_{T1-T3}), and market-determined levels, such as the income levels at which individual and group products are relatively more prevalent (I_I and I_G). In particular, as drawn, key income levels are assumed to ascend from expanded eligibility for public insurance, individual-dominant private market, tax bracket change, and, finally, the group-dominated private market, after which only tax bracket changes continue to occur. If, instead, the expanded eligibility level (I_E) equals (or exceeds) the level at which individual policies dominate the private market (I_I), then the after-tax price would begin to decline from P_I (or some P between P_I and P_G) immediately at I_E. The variance around the mean is driven primarily by the shares of people in the non-group, small-group, and large-group markets at each income level. For those with incomes below the public insurance eligibility level, the variance shown is only for those *not* eligible for public coverage; the price and variance for those eligible is zero.

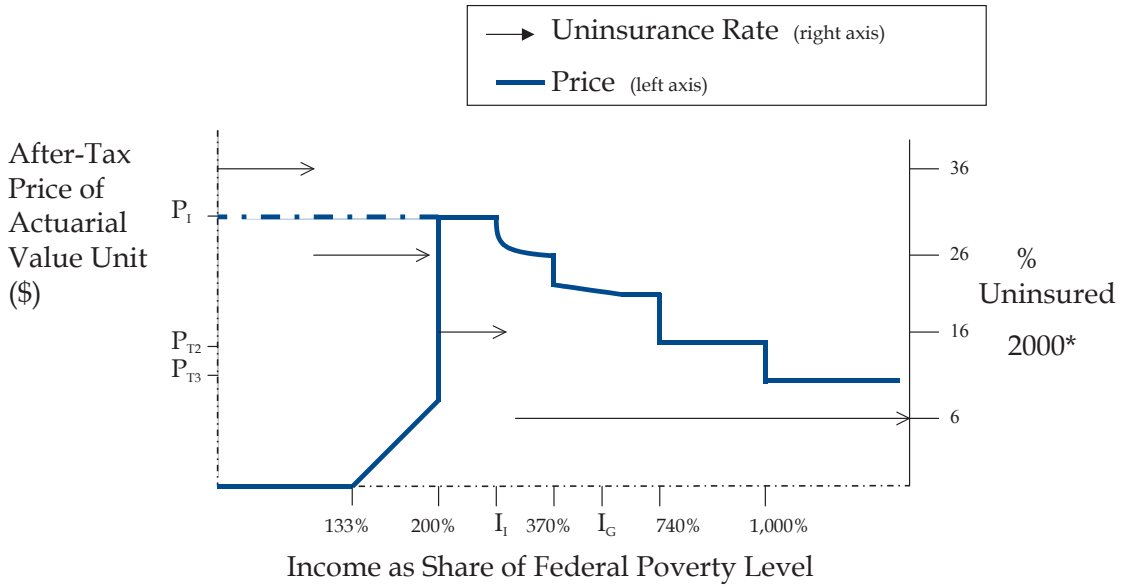
To reflect public and private policy accurately, it would be necessary to construct figure 5 separately by state and by population subgroups explicitly recognized by policy, such as eligibility levels for children compared to those for adults. In fact, other dimensions besides income might yield an even more noticeable price differential among groups, such as age and health status. For example, the ratio of the non-group price per value for someone with a costly chronic condition and that of a healthy person is likely to be larger than the ratio of the price for low-income people to high-income people as represented here.

The price function is also affected by how the actuarial value of plans is conceived. As described above, the maximum value was based on the notion of first-dollar coverage for all health services.[152] This avoids making any assessment of appropriate levels of coverage, or picking those dimensions in which coverage characteristics are more important to consumers. However, this definition may lead to a biased measure of price per value across income for analyses of policies that *do* make such choices, to the extent that there are particular benefits whose marginal price differs in different parts of the private market. For example, the price per value in the individual market (P_I in figure 4) may be higher than that in the small-group market (P_S) because, say, coverage for infertility treatment is extraordinarily expensive in the individual market, while the price for coverage for all other services is not that different. In this case, the difference between P_I and P_S is larger than it would be if the definition had been "price per actuarial value unit for all but infertility services." As a result, using the price per value measure as defined here might be misleading when analyzing a policy aimed at promoting access to a particular benefits package. Again, such distortions exist only if the marginal cost of coverage for particular services differs across the income distribution. If this is an important issue, then it may be appropriate to define alternative price-per-value measures for particular analyses. This issue should not

[152] In fact, as represented here, the benefits offered through Medicaid effectively constitute the maximum value, since those eligible for Medicaid are shown as facing an after-tax per value price of $0.

FIGURE 6

Mean Price of Insurance and Uninsurance Rates by Income



*Uninsurance rate is reported for income ranges (Kaiser Commission, 2002)

change the overall *shape* of the price function, but it will affect the distances between key prices, such as P_I and P_G in figure 4.

Unfortunately, the difficulty in putting actual values on the different income levels at which the price changes, and the actual prices at these cut points, prohibits us from making a precise comparison of price per value by income directly with uninsurance rates by income. Nonetheless, national guidelines and summaries can be used to draw the relationship among price, uninsurance, and income. Medicaid's income eligibility level differs among eligibility groups, but for these purposes, 133 percent of the poverty level was used. Similarly, states differ in how much they have expanded eligibility under S-CHIP, but most have approved plans for covering those up to 200 percent of the poverty level.[153] This simple set of key income level estimates allows for a direct comparison between price per value and uninsurance rates across the income distribution (see figure 6). As expected, uninsurance rates drop with price per value along the income distribution.

Policies for Expanding (or Redistributing) Insurance

The after-tax price per actuarial value as a function of income provides a tool for comparing alternative strategies for expanding insurance coverage. As evidenced by the growing crowd-out literature, such analyses typically lead to particular concern for under-

[153] These estimates are for a family of four that includes two children and files jointly. Standard deductions and exemptions were added to the taxable income level at which tax rates change to convert to gross income. The resulting sum was then converted to a share of the federal poverty level for a family of four. These estimates are imprecise because they ignore the effect of the earned income tax credit, itemized deductions, and other aspects of the tax code that affect the relationship between gross and taxable income.

standing market alternatives for those below through just above the eligibility level for public programs.

Before focusing on that part of the income distribution, however, the fact that after-tax price *declines* with income above this point merits comment in terms of equity and efficiency. The regressive nature of the way our current employment-based system is taxed is likely inefficient, leading those at high income levels to be "overinsured," which, in turn, may be an important contributor to medical cost growth.[154] Similarly, the falling price as income increases due to public policy alone is arguably inequitable by some simple, intuitive notions of equity (figure 3). As a result, the tendency to focus on policies aimed at individuals with income levels around I_E may lead us to ignore the larger question of whether public policy is directing resources in this market as appropriately as possible through the implicit public spending on tax-advantaged employer-based insurance. In other words, discussions of covering the uninsured are often couched as expanding public spending, which begets the crowding-out concerns described above. A quick glance at figures 3 and 5 suggests that it may be just as appropriate to ask if rather than *expanding* the amount of government spending on insurance, public policy's effect on the price of insurance could be redirected to *reallocate* public spending, both explicit and implicit, on insurance. It may be appropriate to ask whether the downward-sloping part of figure 3 should be eliminated, and whether the additional tax revenues generated could be used to subsidize insurance for those with low incomes. In other words, at a minimum, eliminating the publicly generated downward-sloping part of the price function could be both efficient and equitable; at the same time, additional tax revenues would be generated that could be used to modify the steep ascending part of the curve at I_E (and the high price for those in private market earning less than I_E).

Currently, modifying the steep gradient at the maximum public insurance eligibility income limit is at the heart of efforts to reduce uninsurance (and the high price to those below this income cutoff who are ineligible for public insurance), since this is the part of the income distribution where uninsurance rates are highest and premiums appear to be most "unaffordable." The analysis presented here suggests that working through taxes alone, such as with refundable tax credits, may be an expensive way to provide everyone with some minimal value of coverage, since people at this income level are more likely to shop in the expensive non-group market. Some discussions of this type of solution, like the graph in figure 3, fall into the trap of considering a "private price" (P_P in figure 3) as the operand for tax arithmetic, when in fact multiple private prices (simplistically P_I, P_S, and P_G in figure 4) are not uniformly distributed across income levels. If the intent of tax-based reforms is to lower the effective price of insurance, this could be achieved through tax credits directly or through some combination of tax credits and insurance market reform (or subsidy). In other words, tax credits alone affect only the tax treatment of whatever premium is paid (figure 3), and market reform affects the before-tax market prices faced (figure 4), while some combination might be the most cost-effective way to produce the after-tax price that will expand insurance coverage.

It may be that changes in one sphere lead naturally to desired changes in the other. For example, Pauly[155] asserts that refundable tax credits for low earners will, in essence, level the public-policy playing field across income levels *and* revitalize the individual non-group market. In the framework presented here, he argues that balancing the tax treatment of employment-based insurance with refundable

[154] Sheils and Hogan, 1999, op. cit.

[155] Pauly, Percy, and Herring, 1999, op. cit.

credits for low-income people will level P across incomes in figure 3 and, subsequently, in figure 4. If he is correct with regard to the effect of public policy and private markets, the resulting after-tax price per value would no longer vary with income, except for those eligible for public insurance (with incomes below $I_{E)}$. Presumably, the effect would be the same if the tax advantage to employment-based coverage were eliminated, since it would greatly reduce the incentive for employed people to restrict themselves to the group market. If Pauly is overly optimistic about the nature and magnitude of this effect, then the size of the tax credit would have to be larger than he estimates if it is to be large enough to enable those with low incomes to buy insurance.

The market reforms passed by most states in the 1990s were largely aimed at changing the price/income gradient in the private market, moving P_I, P_S, and P_G in figure 4 toward one another, mostly by reducing the role of risk selection in inflating and creating variance in P_I and P_S. To the extent that states focused on the small-group market rather than the individual market, the fact that small firms could opt out created the possibility that P_I could decline as the result of declines in P_S, if relatively high-risk small groups dropped out but lowered the risk of those subsequently in the individual market.[156] (The opposite could happen as well, with P_I increasing if the new risks in the individual market exceed the previous level of risk and price continues to reflect risk.) There seems to be consensus at this point, however, that these reforms have not had important effects.[157]

Proposals to expand insurance through mandated purchase of a minimum benefits package or other approaches that do not explicitly involve tax policy, public program eligibility, or market reform are amenable to analysis through the after-tax price per value. To analyze such a proposal, the after-tax price per value would first be estimated based on a maximum actuarial value equal to that of the required benefits package. Within this somewhat constrained benefits universe, the curve in figure 4 is presumably flatter (as are the within-tax bracket slopes of figure 5), but without other policy changes, those at low-income levels would still face the highest after-tax price per value. Multiplied by the required package value, these individuals would pay the highest dollar value to satisfy the new insurance mandate.

The after-tax price per value by income level is a fairly simple measure for considering alternative proposals for reforming the U.S. health insurance system. It is the product of all the key factors in the system—publicly financed insurance, the tax code, employer subsidies, risk fragmentation, and administrative costs—and can help us understand how changes in one area may or may not have significant net effects from consumers' perspective.

Acknowledgements

Jonathon Hess provided excellent research assistance for this project. All opinions and errors are the author's. ■

[156] This would happen if the average risk in the small-group market was lower than the average risk in the non-group market. If small firms withdrew coverage, and their employees reverted to the non-group market, then the average risk in this market would fall, possibly lowering P_I.

[157] Marquis, MS and SH Long. "Effects of 'Second Generation' Small Group Health Insurance Market Reforms, 1993-1997." *Inquiry* 38(4):365-380, 2001/2002 Winter; Jensen, GA and MA Morrisey, "Small Group Reform and Insurance Provision by Small Firms, 1989-1995." *Inquiry* 36(2): 176-187, 1999 Summer.

Merrell

Commentary Abstract

Katie Merrell reviews characteristics of public policy and private markets for personal health insurance to understand how they affect the cost of insurance at different income levels. While policy makers worry that expanding public insurance programs will "crowd out" private insurance, they typically do not acknowledge the reality of the private insurance market faced by low-wage workers nor the public subsidy enjoyed by higher-wage workers who purchase insurance through their employers. The regressive tax treatment of employment-based health insurance, combined with its enhanced value, make private market health insurance most expensive for lowest-income purchasers. This paper illustrates the net effect of public and private factors on the after-tax price per actuarial value of insurance, creating a framework that can be used to assess proposals for expanding insurance coverage in the United States.

About the Author

KATIE MERRELL has been a Senior Analyst at the Center for Health Administration Studies at the University of Chicago for over a decade. Her current projects range from an analysis of the Medicaid careers and service utilization of various subgroups of program participants to the feasibility of using hand-held computers to collect real-time information from informal caregivers of community-based geriatric and pediatric patients. As an instructor at the University's School of Social Service Administration, she teaches graduate level courses in data analysis and the U.S. health services system. Ms. Merrell was a senior staff member at the Physician Payment Review Commission for eight years, where she was responsible for topics such as practice expense payment under the Medicare Fee Schedule, geographic adjustment of fee schedule payments, insurance market reform, and Medicare managed care payment policy. She has been invited to speak about Medicare and payment policy by academic, medical professional, and government groups in the United States and Europe.