Financement public et marchés privés en assurance santé...un mélange délicat

Mix Without Stirring : Public Finance and Private Markets in Health Insurance

Mark V. Pauly

Édition électronique

URL : <http://journals.openedition.org/economiepublique/150>

DOI : 10.4000/economiepublique.150

ISSN : 1778-7440

Éditeur

IDEP - Institut d'économie publique

Édition imprimée

Date de publication : 15 juin 2005

ISBN : 37-53-20-U

ISSN : 1373-8496

Référence électronique

Mark V. Pauly, « Financement public et marchés privés en assurance santé...un mélange délicat », *Économie publique/Public economics* [En ligne], 15 | 2004/2, mis en ligne le 13 janvier 2006, consulté le 12 septembre 2020. URL : <http://journals.openedition.org/economiepublique/150> ; DOI : <https://doi.org/10.4000/economiepublique.150>

économie publique public economics

Revue de l'**Institut d'Économie Publique**

Deux numéros par an

n° 15 – 2004/2

économiepublique sur internet : www.economie-publique.fr

© Institut d'économie publique – IDEP

Centre de la Vieille-Charité

2, rue de la Charité – F-13002 Marseille

Tous droits réservés pour tous pays.

Il est interdit, sauf accord préalable et écrit de l'éditeur, de reproduire (notamment par photocopie) partiellement ou totalement le présent ouvrage, de le stocker dans une banque de données ou de le communiquer au public, sous quelque forme et de quelque manière que ce soit.

Imprimé en France.

La revue **économie**publique bénéficie du soutien du Conseil régional Provence-Alpes-Côte d'Azur

ISSN 1373-8496

Dépôt légal juin 2005 – n° imprimeur 375320U

Mix Without Stirring: Public Finance and Private Markets in Health Insurance

Mark V. Pauly*

Summary

This paper argues that the variation across countries in the relative mix of public sector and private market roles in allocating medical care resources may be explained, not as an evaluation of more or less efficient structures, but rather as determined by differences in characteristics across countries that make one or the other way of organizing financing and production more appropriate. In particular, it is argued that the share of private financing and production is likely to be higher than the degree of heterogeneity of preferences across citizens in terms of the intensity of care, the methods for control of moral hazard, the values attached to new technology, the level of excess burden in the country's tax structure, and the extent to which monopsony power is available to and attractive to government. Some informal evidence is provided in support of this hypothesis, and it is used to explain the evolution of the Medicare system in the United States.

Keywords: health insurance, private health care, public financing.

J.E.L. : H51, I11

*. The Wharton School, University of Pennsylvania. Bendheim Professor – Department of Health Care Systems, Room 208 Colonial Penn Center, 3641 Locust Walk, Philadelphia, PA 19104 – pauly@wharton.upenn.edu

Introduction

The balance between public sector activities and private markets in health care is always delicate. Part of the reason for ambiguity, uncertainty, and controversy surely is that, political platitudes to the contrary notwithstanding, there really is not unanimous or even near-unanimous agreement among citizens in a democracy over two fundamental questions: What are the goals for this sector, and how do they trade off? Everyone will, of course, favor “high quality medical care for all at low cost,” but that objective is probably (more about this adverb later) impossible in a world of constrained resources. My colleague William Kissick (1994) talks about the “Iron Triangle” of health care in which, from the set of objectives—high quality, universal access, and cost-containment—a society can choose any two goals easily, but not all three.

Added to the issues which are of concern to health care aficionados are factors that public economists also think to be important, such as the overall level of redistribution in society and efficiency in the provision of public goods.

There is also substantial disagreement over how markets and governments can and do perform. Although there is plenty of blame to go around, it is probably correct to say that our comparative descriptive research on the performance of private markets in health insurance and health care is more deficient than that on public systems of various types. The obvious reason for this is that researchers have had much less opportunity to observe private markets than to observe public systems, just because the latter are typically more prevalent around the world and more dominant than the former. That is, at best we know how private markets work in the U.S., with its own culture and tax and regulatory structure, but not how they would or could work elsewhere. And I think it fair to say that we have never had the opportunity to observe “unfettered free markets” in health care, not even in the United States, because of the omnipresence of regulation, subsidies, and taxes. The most we can observe is “fettered markets” and we know in theory and experience in practice the theory of the second best: that a combination of semi-free markets with poorly designed regulation can actually be worse than either “no market” or “all market.”

The next logical analytic step might seem to be to stop talking and to seek treatment for despair. I will not take that step. Instead, I want to assemble the arguments for why there should be a role for private markets in health insurance, specifically, for whom, and in which circumstances. Some of these rationales will be familiar, but I plan to pursue at some length some arguments I have not seen treated so explicitly in the literature.

To be specific: a common way of discussing the relative mix of public and private sectors in health care across countries or over time explicitly assumes that

there exists an optimal mix, a normatively specified split of funding and/or provision which, within narrow limits, ought to characterize an efficient and equitable health care system. Often this analysis is highly judgmental, resulting in sometimes emotional criticism (by Americans and non-Americans) of the American system as much too reliant on a defective private market, or equally emotional criticism of European systems as involving much too much government intervention and attendant bureaucratic defects. I will argue here for a different view. I will explore whether there are other, more or less exogenous characteristics of different societies that both predict, in broad terms, that these societies will choose different public-private mixes and which, to a limited extent, offer normative support for these choices. I will not provide a “Panglossian whitewash” here and will still allow for normative mistakes. But my fundamental point is that the scope of these mistakes may be much smaller than one would judge simply by looking at the variation in public-private mix in isolation. I will also argue that, if viewed in the proper second-best framework, some of the usual arguments against markets (largely having to do with static efficiency) are probably less important, compared to others that were often neglected (largely dealing with values and growth), which are perhaps more crucial. My main goal in this paper is to suggest that those arguments may both recommend and predict different roles for the private sector in different countries. I will summarize recent research by me and others, apply these thoughts to the U.S. in general and recent disputes in Medicare, and close with a plea for experimentation, tolerance, and more research.

1. Thinking Backwards

At this point, economic analysis of the roles of public and private sectors, for health care or anything else, usually turns to a discussion of “market failure,” that familiar terrain in which we discover (to feigned surprise) that the real world does not replicate competitive equilibrium and so there is a *prima facie* case for some public sector intervention (Feldstein, 1999).

In this discussion I want to reverse that model. I want instead to begin with a world of perfect government (when it comes to resource allocation and technical efficiency in health care), and then try to identify real-world situations in which there is likely to be “government failure.” I do this not only because it is somewhat more consistent with my intellectual upbringing, in which conventional welfare economics received only grudging acceptance, but because (for the reasons mentioned above) it seems the approach more consistent with worldwide reality: given the dominance of public sector arrangements in health care, we should begin with an idealized benchmark for that arrangement and move down from there.

So imagine that there could be an omniscient government able to reallocate resources without transactions costs. This government would know everyone's utility function and every product's production process, and would have at its command lump sum taxes which it could use either to change the allocation of resources to medical goods or services, or to redistribute purchasing power among citizens. I assume that this government allows competitive markets to work out resource allocation elsewhere in the economy, but reserves for itself the task of determining what will happen with regard to health care. What would we economists want it to do? (I will turn to the public choice question of what it or another more realistic government is actually willing to do later in my discussion.)

Certain limitations lead me to the conclusion that in many circumstances government should probably not do everything in health care. These are not the obvious limitations suggested by the theory of bureaucracy—that public officials have no obvious strong incentives to meet voter desires or administer insurance programs efficiently. Instead, I want to focus on three limits to efficient public sector resource allocations in a “best case scenario,” limits which (because they may vary across countries) may be helpful in predicting the mix of government and market activities which will be chosen. The three limits are (1) inherent uniformity, (2) excess burden of taxation, and (3) the temptation of monopoly.

These limits can be spotlighted if we begin with a discussion of how an idealized government might solve the resource allocation problem. Assume that a set of citizens have a given distribution of income. The income can be taxed by government; what remains is used to purchase a homogenous “non-medical” consumption good. Taxes in turn can either be used for redistribution (with subsidies as negative taxes), or to provide medical care. Medical care is a pure private good in the Samuelsonian sense. The incidence of a single-period illness reflects a random pattern from a non-contagious disease. Medical care treats that disease according to a production function $H = H(H_0, m)$ where H_0 is the post-illness, pre-treatment level of health, m is the amount of medical care, and $\partial H / \partial m$ varies inversely with H_0 and is positive for some values of H_0 . People get utility from the consumption good and H .

Suppose that people initially have identical incomes and identical preferences. One possible decision rule for the government could be to allocate m to maximize a representative person's utility function, given income, and the health production function. The value m^* which solves this problem will vary by H_0 , but be the same for all at a given level of H_0 .

Even in this stylized model, however, we may wish to invoke another motivation that seems virtually universal amongst human beings, even though no one can prove it. It is possible that, at $m = m^*$, citizens may feel that their fellow citizens are not using adequate amounts of medical care. The rationale for

this “feeling” of a need sometimes to override purely individualistic consumption and insurance decisions may either be ascribed to Musgrave’s “merit goods” idea (Musgrave, 1959), or to the notion which I explored some years ago as a medical-care-specific externality in individuals’ utility functions (Pauly, 1971).

At this point, I will not argue which of the two rationales is the more convincing. I will simply leave the potential for altering resource allocation away from the constrained individual-utility-maximizing level as a marker for the near-universal propensity to tamper with private preferences for medical care even for non-contagious diseases.

2. Preference Heterogeneity

The strongest argument for a government role in resource allocation is in the case of a pure public good, which by definition (and technology) is efficiently consumed equally by all. (At some cost, it is often possible to exclude non-payers from access to a public good, but this would not be efficient.) Even in the case of a pure public good, governments face a daunting task: to choose an allocation of resources, a government must decide how much of the public good to provide. In theory the solution to the problem is based on the Samuelson summation condition, even though real governments are likely to have difficulty in determining preferences for public goods and perhaps in achieving the theoretical optimum as a political equilibrium.

In the case of a private good like medical care, the theoretically ideal government could still solve the resource allocation problem. But now it would need to know both the distribution of utility or demand functions and which individual goes with which preference. For both technical and, one suspects, political reasons it may be hard for governments to treat different people differently.

In contrast, the strongest argument for private markets in my view is that they can, usually at relatively low cost, allow people to satisfy different preferences. To be sure, they also offer strong incentives for cost minimization and other dimensions of “efficiency,” but it is by no means obvious that the public sector cannot come close in terms of productive efficiency itself. This depends on whether public sector institutions can be structured to eliminate any benefit from inefficient production. What the public sector cannot do is reproduce the sensitivity to individual demands that vary across people often in ways that do not have externally observable correlates. When it comes to medical care, even at a given income level, people differ in their attitudes toward health, toward quality of life, toward the side effects of care, toward risks, and toward tradeoffs between the present and the future. When there is socially approved variation in income,

this variation is modestly expanded (although the pure effects of income on the demand for medical care seem swamped by preferences, in terms of explaining the total variation in the demand for care given illness and prices).

I have elaborated on this idea at some length elsewhere (Pauly, 2002); here I only summarize the most obvious implication: other things equal—and even in the presence of a merit goods or altruistic externality approach—the normative case for private markets is strongest in societies where the variation in demand for care and/or insurance is greatest. Of special importance is variation in demand at income levels above low income, where alternative motivations for affecting resource allocation are likely to be less persuasive.

To the extent that there are the kinds of externalities I have mentioned, the influences of individual preferences will be diminished if the “community demand” function is uniform. One real question here is whether these external concerns—the difference between m^* and some social optimum—fall as m^* rises with income. For poor people, preferences do not matter, but for the upper middle class they may be all that matter. In sum, a purely governmental system will do worse in a prosperous country where people have very different demands for medical care and health insurance.

It is surprising how little research there has been on variation in the demand for medical care or medical insurance. Empirical evidence on this subject is hard to find. One could poll or sample, although preference revelation may be a problem. Observations on actual markets, mostly in the U.S., does indicate some considerable heterogeneity in preferences for insurers of different degrees of strictness, and this heterogeneity is only modestly related to income. The variation in quantity or quality demanded across people is larger for some procedures and illnesses than others, as shown in the work of John Wennberg and others (Wennberg, Fisher and Skinner, 2004), but there is no guarantee that this variation reflects patient (as opposed to doctor) preferences.

But the resource allocation problem in medical care is made additionally complex by the presence of randomness in the incidence of illness and consequent demand for some type of insurance to spread risk. To the extent that such insurance engenders moral hazard, there is another dimension of preference that needs to be taken into account: preferences for risk reduction, on the one hand, and preferences for the method and form in which moral hazard is controlled. Indeed it is possible that there is more variation in these preferences for health insurance and its management than in preferences for medical care per se—although the solution to the problem of moral hazard control obviously depends as well on the demand curves for medical care itself—plus other things.

Recent experience in the United States after a change in regulation that permitted greater variety of insurance arrangements—the so-called “selective con-

tracting” revolution—is mixed on this point. On the one hand, it appeared that consumer preferences for insurance were for a form quite different from the then-prevailing (in private and public sectors) model of fee-for-service coverage of all providers with modest patient cost sharing. On the other hand, the new market has appeared to settle for modestly managed care with very large provider networks as the single dominant product type. The expectation that there would be a wide range of different plans of different degrees of moral hazard control and therefore different premium levels has generally not materialized. However, because the range of options is usually offered in an employment based insurance setting where tax subsidies distort preferences, and probably result in greater uniformity than in their absence, definitive evidence on preference variation is not available from observations on actual markets. Alternative methods to elicit preferences might be helpful.

Not only would greater variation in preferences potentially induce a country to provide more scope for private markets to offer variety in insurance coverage—either by offering a variety of stand-alone private plans or, as in some continental European countries, offer a variety of supplemental plans that can “custom tailor” a single public plan, preference variation may also explain the unintentional emergence of private markets. Specifically, offering a public plan of single design in a country with a wide range of preferences is likely to leave some demanders unsatisfied at the margin, and therefore provide both the incentive and the supportive economic environment for the emergence of private sector alternatives.

In principle there could either be a case for private plans that “add-on” or “take away” from the public plan. In practice, the add-on case is likely to be more conducive to the unplanned emergence of private alternatives. The “take away” or “cash in” model may require an explicit ability to convert the level of spending embodied in the public sector entitlement into something that can be reconverted into cash. This is not impossible; the US Medicare plan permits people to partially cash out the current level of Medicare spending if they choose a sufficiently frugal private plan. But there clearly are greater administrative and political difficulties in this case.

3. Excess Burden

Let us return to our idealized model of government resource allocation. That ideal government determines both the level of medical care or insurance and other consumption goods for each person. It makes lump sum transfers across individuals to achieve the ideal level of other types of consumption, and determines the level of medical care directly. Such lump sum taxes and transfers may not be

feasible in a less idealized setting. Actual tax instruments used both to finance medical care, to the extent that care and insurance are publicly financed, and transfers of income for other consumption usually generate excess burden. The optimal taxation literature helps us to understand how to design such tax instruments to impose the least distortion on other choices in the economy (Auerbach, 1986). But, given both the political unattractiveness of simple head taxes and the administrative infeasibility of complex ones, it is certain that any actual financing system for medical care will impose some excess burden. The presence of excess burden, and its potential variation across countries dependent on some characteristics that I will now discuss, may also influence the desired level of public sector spending on medical care and medical insurance.

To be more specific, if excess burden is positive, even the most idealized government will stop the public provision of medical care and medical insurance short of the quantity that will be optimal for some of the population. This shortfall in public spending then sets the stage for emergence of private alternatives which may involve transactions costs in the use of markets but not excess burden. This issue is also germane to the debate over the “efficiency” of publicly managed insurers and plans relative to private plans. If there are externalities, the quantity will stop short of the social optimum but not the private optimum, at least not on average. However, a high excess burden may lead to abandonment of subsidies and therefore private provisions. If there are publicly provided private goods, the quantity may stop short of the private optimum.

Here I describe some simple elements of the complex theory of excess burden minimization or optimal taxation. To begin with, the level of excess burden will depend both on the tax instruments available to a country and the magnitude of total public spending (but *not* specifically on the level of spending on medical care). In effect, a country decides how it wants to distribute net consumption as it determines how much medical care each person should get. If this desired distribution is different from the initial distribution of income, and (for simplicity) if it is tied to income, the linkage of taxes to an observable tax base will set in place changes in behavior with regard to purchased consumption (in aggregate or in terms of individual items), savings, and leisure that can reduce overall well-being.

Obviously, the *marginal* excess burden of higher public spending on medical care depends on how the additional taxes are imposed. For example, if financing comes from a proportional increase in all existing taxes, the measure should correspond to the “average marginal” excess burden. Alternatively, one might hope (though not necessarily expect) that, if there are no additional distributional objectives to be achieved, the tax with the smallest excess burden is imposed. This could be zero if the additional revenue is raised by what is effectively an incremental lump-sum tax; this could be achieved, for example, by lowering the limit

on income exempt from income taxation. At the other extreme, if the medical spending is financed by an earmarked tax (say, a payroll tax, as is the case with U.S. Medicare and German sickness funds), and if there are no offsetting adjustments elsewhere in the tax structure (see Pauly and Buchanan, 1970), the excess burden would definitely be positive.

It does not appear that there has been much research on the form of taxes used (at the margin) to pay for publicly financed health care, although this surely varies across countries, so there may be some regularities to be discovered. The implication then, going back to Pigou (1947) is that this additional cost should influence how much of the public sector activities—redistribution and medical care—a society would want to do.

It is less clear whether actual governments behave in this way. Brennan and Buchanan (1980) have argued that in a public choice model voters constitutionally assign governments tax bases with higher than optimal excess burdens in order to constrain an hypothesized positive tendency for additional spending. The relative cost of administering taxes on various tax bases may also vary across countries. The key fundamental questions here are how observable is the “real” income or other transfer-related characteristics (this is related to the extent to which individuals will change behavior to reduce the size of the measured taxed characteristic), and how large a transfer to the health care sector is envisioned. Since the excess burden increases as the square of the tax rate, the deviation in medical spending relative to the first best optimum will increase the larger is the level of tax financed spending. Exactly how this shortfall will vary as country level income varies is not clear; a higher income country has more taxable capacity, but will also seek to provide high levels of medical spending. An income elasticity of spending greater than one will raise problems.

Other things being equal, the country whose tax system is associated with larger excess burden will stop its publicly provided medical care and health insurance further short of the first best optimum. This leads in turn to an obvious conclusion: that country is likely to have a larger private sector to supplement the public spending. Of course, the size of the private sector depends on its own administrative cost. There will be no excess burden in the private sector, but there will be selling and billing costs for private insurance. The ideal outcome (and perhaps the actual outcome) will depend on the relative sizes of the two costs.

Sometimes private insurance is criticized relative to public insurance because the latter, being voluntary and on a smaller scale, will have larger administrative costs. This analysis shows that there is another factor to be considered: the excess burden (in addition to the pure administrative cost) of a country’s tax system. A country with higher spending on other public goods, such as national defense, will have a higher marginal excess burden, other things equal, and therefore might

rationally choose to have a smaller level of spending on medical care and health insurance, turning more of the task for the nonpoor over to the private sector. This phenomenon, coupled with a strong sensitivity to the costs associated with government, may help to explain the relatively larger size of the private sector in the US system. Likewise, higher spending on other kinds of social welfare (such as pensions) will raise the marginal cost of public financing of medical care; this phenomenon may explain some recent European interest in private sector financing.

To fix magnitudes: the net administrative cost percentage in the U.S. private (group) insurance system is 10 to 15 percent. This is less than the typical estimate of marginal excess burden cost, though these estimates cover a wide range. The evidence is that, even with a relatively small public sector and relatively little explicit redistribution in the U.S., the excess burden cost is substantial.

4. Public Sector Monopsony

Spending on medical care as a percentage of GDP varies across countries. For a given level of GDP, spending differences will reflect both the quantities of real inputs diverted into the medical sector and the prices paid to those inputs. There is strong evidence that much of the higher medical care GDP share in the United States is due to higher input prices relative to other countries. Adjusted for price differences per se, the U.S. GDP share comes close to the middle of the pack for developed countries (Pauly, 1993). In part these higher prices reflect higher productivity in the economy as a whole. In part, they reflect market power (especially for physicians) or patent protection that confers market power. In part, for competitively supplied inputs like nursing, they reflect less explicit government buyer control. But they also may well reflect a fairly decentralized price setting process in the United States relative to a much more unitary and regulated system in most other countries. More speculatively, the relative political influence of providers may also affect the extent to which governments bargain for low prices.

I first consider “monopsony” here as a loose term meaning a large government share in buying various medical care products. It seems clear that the national state of medical services markets is one of monopolistic competition. Patented products are, of course, sold by legal monopolists, although those products often have close substitutes. We do not know precisely the extent of monopoly power individual producers have. The estimates of firm level demand curves for physicians’ services find them to be highly elastic (say, with elasticities of 4 to 10), which implies that the markup over marginal cost is thus 33 percent or less. Better consumer information about prices and qualities increases elasticity. Compared to a market with some monopoly pricing, a large public buyer may initially

improve efficiency by forcing prices down closer to the competitive level. However, if government is in near control of the market, the “price” only serves to redistribute income. That is, government could pay some above-competitive price, but demand the efficient quantity and then tax away any profits, if it wished.

A possible next step then would be for the public buyer to engage in true monopsony. For some medical service supplied according to an upward sloping supply curve, it would compare its estimates of marginal benefit or value with the *marginal* price, which exceeds the average price because increments in price are paid over inframarginal units. In common sense terms, it would hold down the price it paid in order to restrict the quantity supplied, or (equivalently) it would restrict the quantity it bought in order to keep the price down. A total welfare-maximizing government would not push the quantity below the competitive (non-monopoly) quantity or push the price below what would have been the competitive level. The reason is that doing so reduces overall welfare as measured by the sum of consumers’ and producers’ surpluses.

But a real-world government might be tempted to behave as a true monopsonist (not just a “destroyer of monopoly”) for two reasons. First, behaving as a monopsonist could increase consumer (or average taxpayer) surplus, just by less than it reduces producer surplus (Pauly, 1998). But if the suppliers of the specialized inputs into production of this service are few and lack political power, they may not be able to resist. Second, behaving as a monopsonist reduces the government’s total budget. Such action might be pursued regardless of the fact that monopsony pricing reduces quantity or quality of care, and regardless of the fact that the lost benefit is greater than the saved resource cost—precisely because the lost benefit is less than the saved budgetary cost. This is more than a hypothetical possibility. The U.S. government, under the Vaccines for Children program, pays for the bulk of pediatric vaccines in the United States, most of which are not under patent protection and so might be thought to be approximately competitively supplied. An Institute of Medicine committee on which I served concluded that the price constraints imposed by the government were probably responsible for a dramatic drop in the number of companies producing vaccines and consequent chronic and serious shortages. The cost of these shortages, in terms of lost immunization protection and parental time, may exceed the government’s budgetary savings.

More generally, I want to explore the consequences of government behaving explicitly as a monopsonist in setting payment rates for specialized health care manpower and health care products (like drugs and devices) with large fixed costs. Consider first the case of hospital care which is provided by specialized workers (nurses and technicians) whose labor supply curve has a positive slope. Government sets payment levels for hospital care, but those payments are largely transferred as payments to workers.

The market supply curve of hospital labor (and of hospital care itself) will then have a marginal supply price which is greater than the marginal opportunity cost. The idealized government will only pay attention to the marginal resource cost, but there will be a strong temptation to government officials charged with managing a limited budget to pay attention to the budgetary consequences of higher prices or larger quantities. In such a situation, it would not be surprising if government in setting prices would behave as a monopsonist, and restrain the volume of services in order to avoid having to pay higher prices to inframarginal workers. Indeed, government could act as a consumers' cartel, which would maximize consumers' welfare even as it reduced aggregate consumer and producer surplus. Such behavior will provide an opportunity for a private sector. The reason is that individual consumers (or even small private insurance plans) will not take the supply-price-increasing effects of higher demand into account. In effect, these buyers, paying attention only to the average price and not the marginal price, will want to purchase larger quantities than those the government would choose to supply. In a buyers' cartel, for example, individual buyers will always want to buy more at the monopsony price than the cartel wants to buy. The result will be a demand for private insurance that would break the buyers' cartel that government is trying to maintain. To hold down unit prices, government limits supply, but at those low prices there will be substantial unsatisfied demand at the margin.

This model is ambiguous in terms of predictions about sector roles as a function of the opportunity for monopsonistic behavior. A key parameter is the elasticity of supply; the less elastic, the greater the gains from monopsony. Practically, countries probably do differ in terms of the alternatives available to workers with specific health care training. In the United States, for example, registered nurses can and do drop in and drop out of working as nurses in hospitals depending on the wages there relative to the wages educated women can get elsewhere. My perception is that in some European countries where culture and regulation attach people more to a "calling" there may be a less elastic response to lower wages. This means that, on the one hand, there will be less of a reward to engage in monopsonistic behavior in the United States, but also less of a gap for private purchases to fill if such behavior does occur.

The situation for pharmaceuticals and devices is different. Here the relevant supply curve (if there is one) is the schedule of marginal cost of production of the product, which probably does not increase with volume and may even fall. There is a supply curve of new products, which probably is upward sloping, however, as I will discuss below. What actually happens in the case of existing products is not well understood.

5. Public-Private Mix and the Growth in Medical Supply and Technology

The last point I wish to discuss briefly is the theoretical and normative relationship between the public-private mix and the *rate of growth* of medical spending. This discussion is brief because little is known about the subject, not because it is unimportant; quite the contrary. What we do know is that much of the growth in demographically and input-price adjusted medical spending across countries and over time is associated with the addition of new medical products and procedures that are more costly than their predecessors yet, recent research tells us, contributory to health improvements (Cutler and McClellan, 2001). We also suspect that, positively, higher levels of public involvement slow the growth of spending. However, somewhat embarrassingly, given the importance of technology to spending growth and given the importance of spending growth to public policy, the great bulk of normative research uses static models and therefore says little about the efficiency of this part of change over time. Here I offer a few thoughts on whether efforts to deal with changes in technology over time might explain the mix of public and private sectors across countries.

The most important thing to say is something most obvious to economists but not to policymakers. Low growth rates of medical spending are not necessarily preferable to higher rates if the lower spending growth is associated with lower rates of introduction of beneficial but costly new technology. The converse is of course also true: higher rates are not necessarily better either. The proper normative conclusion here so far is aggressively nihilistic: differences in spending growth rates per se do not yield normative conclusions.

We have a little normative theory that can be helpful here, but it also is incomplete. If a private market has competitive insurance plans, and if each plan is free to cover or to refuse to cover new technology on a selective basis, there should be no technology covered in the competitive equilibrium that is inefficient, in the sense of negative aggregated discounted net benefits, assuming away imperfect information and adverse selection (Pauly, 2003). The intuition is that, despite moral hazard, adding coverage will only be undertaken if there is positive net benefit to members of the insurance plan—that is, if the benefit from the technology exceeds the cost it adds to the premium. And, going back a stage, the new technology will only be brought to market if the expected revenues it would generate in a competitively priced insurance market exceeds (in present value terms) the sum of all costs: research and development, production, and distribution.

This is, however, a fairly small claim for efficiency. It does not say that all technologies with potentially positive net benefits will be available in market

equilibriums, or that technologies which are available will be optimally used. We know the sources of potential deviations from the best case: the fixed costs of research and development, the inability to engage in discriminatory pricing, and most troublesome of all, the dependence of the final outcome on the rules about intellectual property embodied in patent laws. Legal rules regarding coverage will also matter. This all leads generally to nihilism on normative matters.

My conjecture here, based on all of the examples of deviation from first-best optimum that I have been able to develop so far, is that, given patent rules, the rate of adoption of new technology in competitive insurance markets, rather than being too rapid, will probably be *too slow*. Thus, if the *real* rate of adoption in new technology in public systems is slower than that in private systems, that public rate must also be too low. This is not equivalent to comparing rates of growth in spending, since spending is affected by pricing differences as well as real inputs. But it does suggest that there are worse faults to markets than high rates of medical spending growth.

That is the most defensive thing I will say about private markets relative to the public sector. There may be something more useful that can be said about positive choices. I will discuss the two easiest cases first. It is likely that citizens differ not only in their preferences for existing medical services, but also in terms of their preferences for the rate of addition of new technology. That is, people may have different marginal propensities to spend on new technology, and the extent of this variation may also vary across countries. Here again, private markets are probably better suited to offer choice about the pace and form of new technology than public systems. I do not know of any private insurer in the United States that has adopted as its slogan “We Cover All the New Products You Could Get in Canada” or “Last Year’s Technology at Last Year’s Premiums,” but it does seem that there is considerable variation across plans in the alacrity with which they agree to pay for new things and the permissiveness they give to providers and patients to use them.

It also seems that the supply curve of new technology is upward-sloping and therefore subject to monopsonistic behavior. What will happen is more speculative here because discriminating monopsony seems possible. Agreeing to pay for the technology with the smallest net benefit does not necessarily imply higher payment for inframarginal candidates with larger benefits—although adoption of uniform cost-effectiveness rules may push a little in this direction.

I do not have anything to contribute on the relationship of excess burden of the tax system and new technology. There is a dynamic optimal taxation problem here and, to my knowledge, it has not been addressed, much less solved.

6. Politics and Policy

These observations about the relative roles of public and private sector financing were made without paying attention to the specific regulatory and financing structure of the publicly financed sector. On the one hand, this omission may be important because that structure may influence how easy it is for citizens to engage in private supplementation to the public programs. On the other hand, the structure itself presumably depends on attitudes/efficiency/pressure for private supplementation. In this section I explore two alternative public sector views of private activity: “necessary evil” and “positive proactive.”

The necessary evil view is one held by many. The emergence of markets makes embarrassingly clear the deficiencies of government. Or there may be a belief that somehow markets are preventing government, at long last, from solving its own problems, because markets may take off some of the political pressure. Finally, despite the theoretical availability of redistribution, there may be a belief that private markets somehow make inequity worse.

The positive proactive view of the private sector reverses the model pursued so far and asks how the private sector could be used if it were desired (on a priori grounds) to minimize the role of the public sector. In this approach all production would be postulated to be private, but the government would necessarily play the role of financing insurance and care for at least some part of the population. Since any plan to transfer resources has implications for incentives, there are some key design issues.

Preference diversity and excess burden again come into play. One approach to minimizing the role of government is to minimize its involvement with those parts of the population which can and will arrange what would be regarded as adequate insurance and adequate care on their own. This would generally include (though not necessarily be limited to) middle and higher income households. While there may still be underuse of some preventive care, it is impossible to believe that additional care beyond what reasonably well-off citizens get, given the private insurance they would choose, would be a matter of major social concern. The problem then is that if subsidies are made available to lower income households but need to be phased out as income increases, that “income tax” necessarily generates an excess burden. While an income-based tax system would be less heavily used than if uniform subsidies were offered to all, the net effect would still be one that distorts worker incentives to obtain a higher measured income or a higher level of whatever indicator is used to establish eligibility.

Preference diversity also matters because any subsidy for insurance must specify the characteristics of the insurance which qualify for subsidy. The more tightly specified are the terms of eligibility, the lower the voluntary take-up rate of any

given subsidy. But paying for “any old insurance” is difficult to justify and even harder to administer. Presumably the greater the preference diversity among potential subsidy recipients, the greater the need for rules but the greater the opportunity for rules to do harm. What is also relevant here is the strength of collective preferences for modification of the market equilibrium; more precisely formed preferences for what kind of health care subsidy recipients are supposed to consume argues for stricter rules but either lower take-up or the need for a larger subsidy.

However, here is a way to think about the optimal subsidy problem. Assume that the specification of the minimum acceptable level of nominal insurance coverage is given and is uniform across the population. (Derivation of the optimal policy will require information on the impact of coverage on the use of medical care helpful moral hazard and the benefits health or altruistic that flow from that care.) Define demand curves for this coverage for various population subgroups, and an acceptable proportion of each subgroup to obtain this coverage. Then provide the subsidy (in the form of a lump sum credit) to each subgroup needed to get the target proportion to purchase the target policy (or better). If the subsidy for higher risk groups needs to be higher to induce them to pay the higher risk rated premiums they would be charged, risk adjust the subsidy.

This simple version will not be perfect if the targeting of subsidies is imperfect. The alternative design specifies the subsidy in terms of a proportion of an estimate of the premium for the target insurance plan. This avoids the need to risk adjust, but also leads potentially to less efficient search and over-insurance.

The main point is that either version can lead to an optimal outcome achieved in an optimal way. Objections to voucher schemes are usually political: compared to uniform social insurance, fewer of the electorate will support schemes for income conditioned subsidies. This is not a relevant argument in welfare economics.

Some objections to uniform coverage are more substantive, but remediable. If the optimal level of coinsurance is positive, there is a fear that lower income people will be “discouraged” from purchasing effective care, and that all people may be deterred from purchasing certain kinds of care (usually preventive care) which, though highly effective, for some reason has very low demand. The solution to these problems—if they turn out to be real problems—is to vary the level of coverage across population or care subgroups, making coverage more generous when greater stimulus is needed.

Beyond these design issues, the primary practical analytic problem is the specification of the “ideal” coverage and the “ideal” take-up rate if coverage choice is to be voluntary. The primary advantage of full tax financing is that take-up will be universal, although this goal can in principle also be achieved by mandating private purchase coverage. Once coverage is mandated, however, the need for

subsidy disappears except as required to achieve other distributional objectives.

The preceding theory suggests three positive predictions and normative determinants of the private sector share in medical care and medical insurance: deviations of preferences, relative excess burden of the tax system, and scope for public sector monopsony. I now want to consider, in an informal way, whether these influences can explain the difference in shares which I know best: the higher private sector share in the United States. (I leave to others a more formal empirical analysis of whether these influences provide an explanation for sectoral differences across a much wider range of countries.)

With regard to differences in preferences, it does seem plausible (though it should also be investigated more formally) that there is more variation in “demand” (broadly defined) in the U.S. than in other countries. We do know that disposable incomes vary more widely in the U.S. (around a higher mean). “Preferences” here means differences in demand for both the quantity of care and the quality, the extent of insurance coverage (relative to out-of-pocket payment) and, probably most importantly in recent years, the form and strictness of supply-side cost containment or rationing measures imposed either by government or by private “managed care” insurance plans. All of these potentially vary with income, although the highest income elasticities seem to apply to the quality of care (positive) and to the strictness of supply-side rationing (negative). My impression is that there is also more variation in tastes, given income, in the U.S. than elsewhere, but it is hard to determine the variation in heavily publicly controlled settings that do not respond to private demands. We might also allow for people to have preferences about the extent to which individual demands should be accommodated, but it is hard to identify the influence independently.

With regard to the marginal welfare cost or excess burden of taxation, this depends on the breadth of the tax base, the efficiency of administration of the tax system (and the two are related), along with the level of taxes for other types of public spending. Here I would not imagine that the U.S. is subject to stronger pro-market influences than other developed countries in general, since its overall tax base is relatively broad and its tax rates for other things are more modest. Compared to developing countries, it should on this score probably have a larger public sector. However, it is my sense that there is more explicit concern for the distortions implicit by taxation in the U.S., the usual code-words being “the crushing burden of taxation,” though that influence is not one targeted by the simple theory described earlier.

As for the role of monopsony or government purchasing power, here I would suggest that there is less scope in the U.S. for price reductions from government purchasing, should the ideological winds blow in that direction. Because of strong enforcement of anti-trust laws against physicians, there is probably lit-

the monopoly power to be reduced, and private managed care plans have also already pressed down prices (usually through discounting) successfully for hospital care. On the input side, as already noted, supply curves are probably less steep than in other countries, so there will be less temptation toward monopoly. Prices, in short, are probably close to long-run marginal cost, so there is no need and no gain from government intervention.

This is surely not to deny that total medical spending—and wages of nurses, technicians, and physicians—are high (by almost any standard) compared to other countries. Likewise, the rate of addition of costly but beneficial new technology may be highest. But the actual quantity of inputs is actually quite modest, and the additional technology and convenience is almost surely worth its cost to the middle class buyers who pay for it. The situation is less clear for outpatient pharmaceuticals. While the share of drug-spending in the U.S. (at 10 percent of national health spending) is relatively modest, the prices of patented-protected drugs are high. (Those for the more frequently used generics are low.) There is some doubt as to whether prices could be reduced by government for the existing variety of products, relative to what is done by private managed-care insurers, but there is little doubt that drug spending could be cut if the range of products was reduced and the rate of introduction of new products fell. Such steps are probably inhibited by the very large proportion of patented products that are domestically produced (rather than bought from foreigners); price reductions translate more immediately into profit reductions for American firms and job losses for American workers. Still, if there is to be an expansion of the role of the public sector for the non-poor in the U.S., it will probably be driven more by a desire for lower drug prices than by anything else.

7. Beyond Theory: Public and Private Interaction, Past and Future, in the US Medicare Program

The preceding theory has been tested to some extent in the design and evolution of the Medicare program in the United States. I will comment on some implications for the theory from the history of that program, and from the debate which lead to a modest restructuring of the program. Of course, attempts to prove general propositions from single historical examples can at best be suggestive, not definitive.

Medicare is a tax financed insurance program to furnish health insurance to the elderly, the disabled, and people with kidney failure. The beneficiary premium

covers approximately 10 percent of the program's cost. The remaining part of the program is financed by a combination of payroll taxes and general revenue financing. The subsidized coverage includes patient cost sharing for hospital and physician care and, in the new prescription drug program to be effective in 2006, outpatient drugs.

From the moment it was put in place in 1966, this program experienced supplementation. One kind of supplementation came from state governments, who gradually chose to cover the cost sharing, beneficiary premiums, and some uncovered types of care (nursing home and drugs) under their "Medicaid" program for low income people. The proportion of people on Medicare with this assistance is now approximately 10 percent. The other kind of supplementation came from the private sector which furnished supplementary insurance. This insurance in turn had two major sources: voluntarily and individually purchased "Medigap" insurance, and insurance furnished to workers as a tax shielded post-retirement benefit. The combination of these three sources means that about 89 percent of beneficiaries have some kind of supplementary coverage.

This pattern would certainly be consistent with the hypothesis that the design of the government run insurance program left some demanders (public and private) unsatisfied. It is also the case that each type of supplementary insurance, in lowering user prices for services covered by the basic plan, increased the use and cost of those services. In this sense there was an implicit and probably unintended public subsidy to private coverage, because the premium for the public insurance was unaffected by the presence of supplementary insurance, even though the expected benefits were substantially higher for those with supplementary coverage. There has been some, largely dysfunctional, regulation of individual Medigap coverage over the years, but no attempt to incorporate it into the public plan.

Another issue for US Medicare is whether the basic governmental plan could be supplanted by a set of private plans. Changes made in the 1980s to accommodate private managed care plans (HMOs) have already given an affirmative answer to this question, though it is still debated in hindsight. Beneficiaries are permitted to take an estimate of their expected cost under the government run plan and use that to offset the premiums for qualified private plans. Those private plans must provide at least the same nominal benefits as the public plan, but they can pay providers in different ways, refuse to contract with providers which are eligible for the public plan, charge additional premiums, and provide additional benefits. Many of these plans provide outpatient drug benefits even now, and some of them originally did so at zero additional premium.

The remaining issue being debated is that of how to set the initial voucher value and the beneficiary premium for the public coverage. An approach to be tried in the future on an experimental basis is to set that amount at a level poten-

tially different from the expected cost in the public program. Instead, a kind of bidding process would be implemented. Different private insurers and the public insurer would “bid” on a risk adjusted premium for the nominal benefit package. The low bid would then define the value of the voucher, and “losers” would be required to charge and accept higher premiums for their coverage. (That is, the losers would not be punished by being denied the contract, but just by being forced to charge a high premium based on their initial bid.) Because the bidding process does not specify the quality of the insurance or care to be given, this process is incompletely specified from an economic perspective.

Controversy arises from the fear that the public program will not be the low bidder, but will somehow attract high risk and high cost beneficiaries without adequate risk adjustments in the voucher value. Then the public plan may be unable to cover its costs and perform its hypothesized safety-net function. Beyond this, there is a reverence for the public plan on the part of many that I do not share, but which I have tried to understand. The key empirical/policy question is the adequacy of risk adjustment, and expectation about the quality of care for high risk beneficiaries in private plans.

Since the subsidy rate in the Medicare program is so high, there will not be a problem of takeup. The most serious problem is that of future financing which in turn is related to high anticipated excess burden cost of taxes needed to finance the program at expected future levels of cost and demographics. I anticipate a serious shortfall prompting serious argument, but that argument has not yet begun.

What is unlikely to be changed in the near future in the U.S. is the large-scale tax revenue support for Medicare, which currently covers 90 percent of program costs. The recently passed Medicare Reform Bill does very modestly increase the contribution of rich retirees (without offering them a different insurance plan), and the drug coverage, even with a price tag of \$50 billion per year, will only cover 10 to 15 percent of total drug expenses for seniors. In the short run, however, Americans will be satisfied with limiting the private sector to competition by private firms for the use of a very generously publicly-funded voucher. There is great concern, however, about future Medicare spending over time. Some of this concern is exacerbated by the trust fund structure of Medicare. But the primary reason for concern is, in terms of my theory, the anticipated much higher excess burden of the taxes needed to support Medicare at its traditional level of generosity as the Baby Boom retires with continued expectations of access to costly new technology. That will be a titanic struggle between tax-financed public sector support less distortive private projects. If I am lucky, I will be around to watch.

8. Conclusions: Suggestions for Policy and Research

I have offered some suggestions to explain the variation across countries in the relative shares of public and private sectors in health care and health insurance. Although the limited number of observations makes it hard to test these hypotheses, one should try some empirical work. One might also try to identify those countries with more or less private market share than they “should” have, given their characteristics. Personally, I would prefer an enlargement of tax support to cover insurance for all poor and near-poor people in the U.S., including able-bodied adults who currently lack access to subsidized coverage. I am less bold to comment on whether some European countries might have residuals of the opposite sign, with too much government and not enough market. I do think more experimentation with true markets (not the “managed competition” caricature) for the non-poor parts of the population would be interesting to observe, and might be a useful exploration in anticipation of Europe’s new demography-driven excess burden crises. Americans are not presently in a good position to offer advice on this matter (or on many other matters), but I do feel comfortable encouraging introspection, an open mind, and a moratorium on invidious cross-country comparisons.

Références

- Kissick, W. L. 1994. “The Past is Prologue”, in *Medicine’s Dilemmas: Infinite Needs Versus Finite Resources*, New Haven, CT, Yale University Press.
- Feldstein, P. J. 1999. *Health Care Economics*, Fifth Edition, Albany, NY, Delmar Publishers.
- Musgrave, R. 1959. *The Theory of Public Finance*, New York, McGraw-Hill.
- Pauly, M. V. 1971. *Medical Care at Public Expense: A Study in Applied Welfare Economics*, New-York, Praeger Publishers.
- Pauly, M. V. 2002. “Recruiting Health Care Rationers: Individual Versus Collective Choice,” in *Individual Decisions for Health*, B. Lindgren, ed., London, Routledge Press.
- Wennberg, J. E., E. S. Fisher and J. S. Skinner. 2004. “Geography And The Debate Over Medicare Reform,” *Health Affairs* Web Exclusive, February 13, 2002, <http://content.healthaffairs.org/cgi/reprint/hlthaff.w2.96v1> (May 26, 2005).

Auerbach, A. J. 1986. "The Theory of Excess Burden and Optimal Taxation", in *Handbook of Public Economics*, Vol. 1, A. J. Auerbach and P. J. Feldstein, eds. Amsterdam: Elsevier Science Publishers B.V.

For reasons why there might be offsets, see M. V. Pauly and J. M. Buchanan. 1970. "On the Incidence of Tax Deductibility," *National Tax Journal* (June, 1970); 23(2) pp. 157-167.

Pigou, A. C. 1947. *A Study in Public Finance*, Third Edition. London, Macmillan.

Brennan, G. and J. Buchanan. 1980. *The power to tax: Analytical foundations of federal constitutions*, Cambridge University Press, Cambridge.

Pauly, M. V. 1993. "U.S. Health Care Costs: The Untold True Story," *Health Affairs*, Fall, 12, pp. 152-159.

Committee on the Evaluation of Vaccine Purchase Financing in the United States and the Board on Health Care Services of the Institute of Medicine. 2004. *Financing Vaccines in the 21st Century: Assuring Success and Availability*, The National Academies Press, Washington, D.C.

Pauly, M. V. 1998. "Managed Care, Market Power, and Monopsony," *HSR: Health Services Research*, December, Part II; 33(5) pp. 1439-1460.

Cutler, D. M. and M. McClellan. 2001. "Is Technological Change in Medicine Worth it?" *Health Affairs*, September/October, 20(5) pp. 11-29.

Pauly, M. V. 2003. "Market Insurance, Public Insurance and the Rate of Technical Change in Medical Care," *The Geneva Papers on Risk and Insurance*, April, 28(2) pp. 180-193.