HC

Ownership and Contracting for Health Care

Karen Eggleston* and Richard Zeckhauser**

* Tufts University and Harvard KSG

** Harvard University and NBER

Introduction

If efficiency, distributional or political considerations lead to government financing of some health services, when should the government provide a service "in-house" and when should it contract out? Several countries with originally integrated national health services, such as Britain, have experimented with vertical dis-integration through separation of the purchaser and provider functions, as well as increasing purchase of services or rent of facilities from private providers. Most OECD countries combine public financing of the majority of national health expenditures with a robust private sector delivery system (often overwhelmingly not-for-profit). This combination suggests that contracting out for health care is of critical importance, or believed to be of importance, for established market economies. Countries transitioning from socialist central planning to market-based economies such as those in Eastern Europe are introducing health care financing and ownership changes designed to move towards similar systems of public financing and pluralistic delivery. Their experiences further underscore the broad policy relevance of the "make or buy" question for health services.

In this paper we suggest an incomplete contracting framework for analyzing the optimal vertical integration of government with respect to health care. We believe this to be the first application to health care of the property rights theory of ownership (Hart, Shleifer and Vishny 1997).[1] The incomplete contracting approach is helpful because theory tells us that ownership structure matters, and only matters, when contracts are incomplete (Williamson 1985; Grossman and Hart 1986), and institutionally, contractual incompleteness is an inherent feature of health care (Arrow 1963; Ma and McGuire 1997).

Our model is motivated primarily by two sets of experiences. The first is the US (and to a lesser extent, other established market economies), both because of our

---

[1] Chalkley and Malcomson note in their chapter on government purchasing forthcoming in the *Handbook of Health Economics* that there has been "no application [of the ownership theory] that we know of to the supply of health services. Nor is the best way to apply these ideas to health provision clear to us. We do not, therefore, discuss this issue" (Chalkley and Malcomson 1999: 3). Hart, Shleifer and Vishny (1997) say that for health care, "an analysis of the efficiency of alternative arrangements is a great deal more

familiarity and because of plentiful coverage in the health economics literature. The second is the experiences of the nations of Eastern Europe[2], where the health sector has been swept along with the broader economic forces unleashed by transition from plan to market. There, ownership relations in the health sector are in flux, contracting relationships developing anew, and the opportunity to observe evolution of ownership structure at least partially in line with comparative advantage rare and valuable. Although the experiences of Eastern European nations are far from uniform, and the differences between the US and Eastern Europe are even more dramatic, these disparities make similarities identified—the importance of payment incentives, competition, and hard budget constraints as much as ownership *per se*—all the more striking.

In fact, these similarities seem more broadly applicable. For example, drawing upon the experiences of the World Health Organization's 191 member countries, the World Health Report 2000 emphasizes the importance of strategic purchasing, payment incentives and risk pooling, discussing organization of health service delivery without any explicit attention to, or recommendations regarding, public versus private ownership. Among the top twenty countries in the Report's health system assessment[3] rankings are countries with a public share of financing both above (Luxembourg, Norway) and below (Italy, Greece) the average of the European Monetary Union (about 75%), and countries in which the private share of inpatient beds ranges from minimal (Norway, UK) to dominant (Japan, Netherlands) (see Table 1ab). Post-socialist Slovenia ranks neck-and-neck with the US in overall health system performance (US #37, Slovenia #38), according to the WHO study.

The cross-country variation in the importance of public financing and government ownership in the health sector would be difficult to explain without some reference to ideology and political history. Indeed, the capitalist US and post-socialist Eastern Europe start at near opposite ends of the ownership spectrum (although the prevalence of

complicated and requires a much more detailed model of competition, contracts, and regulation than we could provide in this paper" (p. 1159). We take a first step in developing such a model in this paper.
[2] We use 'Eastern Europe' for brevity, although 'central and eastern Europe' would be more geographically correct.
[3] The WHO's assessment system was based on five indicators: overall level of population health; health inequalities (or disparities) within the population; overall level of health system responsiveness (including patient satisfaction); distribution of responsiveness within the population (how well people of varying

2

for-profit and not-for-profit entities. Unfortunately, there is no theory of the behavior of non-profit entities that even approximates the rigor and predictive power of our theory of for-profit firms.

This paper presents a simple model of the comparative advantage of different ownership structures for difference health care services, based on several 'stylized facts' of US and Eastern European experience. We then go a step further, and consider the markets that bear and incentives that act on these structures. We argue that for health care, ownership *per se* is frequently not so critical, although public, private nonprofit, and investor-owned providers do each have comparative advantages. Competition, payment incentives, and hard budget constraints <u>are</u> critical: *how* to contract out matters as much as whether or not to do so, and to whom.

The paper is organized as follows. Section I discusses the distinctive aspects of purchasing health care. Section II presents an overview of US and Eastern European experience with contracting for health care, including financing and delivery system ownership structure and empirical evidence regarding performance differences by ownership form, payment method, and softness of budget constraints.[6] Section III presents the model. Section IV concludes with a discussion of the implied comparative advantage of different ownership forms for different health services and the importance of other aspects of the contracting relationship.

I. Government Contracting for Health Care vs. Other Goods: Is Health Care Different?

Along with food, shelter, and basic education, medical care--to prevent or relieve pain and suffering and extend life--is usually considered on the spectrum from a 'merit good' to a 'human right' for citizens of a humane, modern society. (Economists may decry this treatment, but must recognize it as reality.) Assuring access to basic health care is a government responsibility in most developing as well as industrialized countries. To fulfill that role requires sensitivity to what that society considers 'basic' health care and

---

[6] We do not attempt a survey of the extensive theoretical and empirical literature on competition in health care markets (see Dranove and Satterthwaite 1999).

license (Arrow 1963; Dranove and Satterthwaite 1999). These features preclude marketing health services as an efficient contingent-claims market and/or through complete *ex ante* contracts specifying the efficient quantity and quality of medical services for each possible medical condition for each different consumer.

Uncertainty of expenditure leads to a demand for insurance, which interposes a third-party payer between patient and provider. The purchaser must therefore take account of the 'health care triad' of patient, insurer, and provider (Figure 1), unless the provider is willing to bear expenditure risk. For simplicity, our model abstracts from this distinction between insurer and provider on the supply side, implicitly assuming the government contracts with an integrated insurer-provider such as a managed care organization. This already is sufficient to demonstrate much of the institutional distinctiveness associated with contracting for health care. Relating contracting to a disentangled insurer-provider relationship is left to future research.

II. Experience in the US and Eastern Europe

Public Purchasing of Health Care

Close to half of total spending on health services in the US comes from public sources[8] (Table 2). Governments in most industrialized countries finance a significantly larger percentage of health spending, when (as is standard) compulsory social insurance contributions are counted as public financing. As shown in Table 1a, public funds finance more than three-fifths of total health expenditures in high-income countries.[9] The public share of health spending averages almost three-quarters in the countries of the European Monetary Union, and comprises an average of 6.6% of GDP. These averages hide significant variation in public share of national health expenditures, even among western European nations (see Table 1b).[10] Although population-based health, infrastructure and

---

[8] The federal Health Care Financing Administration (HCFA) spends over $360 billion a year buying health care services for beneficiaries of Medicare, Medicaid and the Children's Health Insurance Program.
[9] High-income countries are those with income per capita exceeding roughly $9000 per capita in 1998.
[10] We think that ideological factors play a large role in determining this variation. There is little correlation between total health spending and the public share, i.e., between the first and second columns of Table 2b (a correlation coefficient of 0.01). There is a more significant, and negative, correlation between public share of financing and private share of inpatient beds (-0.4). (We omit the US in both calculations, since it is a clear outlier). Among recent econometric studies, Kornai and McHale (1999) analyze the trends in

6

Pluralistic Delivery

Ownership structures of health sectors are diverse, with public and nonprofit providers prevalent. In the US, almost every segment of the health care sector includes a mix of public, private for-profit (FP), and private not-for-profit (NFP) providers, although the mix varies considerably by medical service (see Table 5). The private sector dominates, except for psychiatric hospitals.[12] Nonprofits play a particularly important role, especially for hospitals, hospices, and blood banks.[13] FPs represent only about 12% of all hospital admissions and 16% of community hospitals. The size of the private FP hospital sector is somewhat larger if inclusive of investor-owned specialist hospitals and NFP and public hospitals that FP companies manage.[14] Investor-owned firms represent about two-thirds of the nursing home market[15] and 68 percent of non-hospital-based dialysis centers (MedPAC March 2000 Report for Congress: 137). For-profit organizations are also prevalent in managed care. The majority of HMO enrollees belong to for-profit HMOs.[16]

---

[12] This distinctive treatment probably arises for several reasons: treating patients in psychiatric hospitals, unlike most medical care, yields real externalities; such care can be extremely expensive, and few psychiatric patients could pay for their care; and there are few clear criteria of who should receive such care.

[13] Conversely, health care facilities are very important in the overall US nonprofit sector. The average percentage of the nonprofit sector accounted for by health for seven OECD countries is 22%; for the US, 53% (Rose-Ackerman 1996: 706).

[14] "If one includes the approximately 400 psychiatric, alcohol and chemical dependency, and rehabilitation hospitals owned by FP companies and the 350 NFP and public hospitals that these companies manage, the sector accounts for almost 32 percent of U.S. nonfederal hospitals and approximately 23 percent of the beds" (Gray 1998: 208).

[15] It is interesting to note that the mix of services within a category can differ across ownership forms. For example, over 90 percent of FP nursing homes have only nursing home beds, whereas a third or more of nonprofits and public nursing homes are more organizationally complex, such as homes with affiliated non-nursing beds and hospital-based nursing homes. The percentage of government nursing home beds in the latter two categories increased from 35.8% in 1987 to 56.1% in 1996 (Rhoads and Krauss 1999: 10-11), although overall there was no statistically significant change in the distribution of ownership of nursing homes between 1987 and 1996 (Rhoads and Krauss 1999).

[16] Although Table 4 lists '~0%' public HMOs, there are public managed care organizations, if you count initiatives of the Department of Defense (DOD) and some other public purchasers. For example, in 1994 the Uniformed Services Treatment Facilities of the Military Health Services System began enrolling non-active duty DOD beneficiaries in its managed care program, with a network of inpatient and outpatient providers receiving a monthly capitation payment for all medical care for each enrollee (GAO 1996). More broadly, the DOD itself is moving from a system of direct military facilities (and the Civilian Health and Medical Program of the Uniformed Services [CHAMPUS] for non-active duty DOD beneficiaries) to a nationwide managed care program called TRICARE. This program offers beneficiaries a PPO and HMO-like option in addition to the traditional fee-for-service CHAMPUS option. The managed care options offer lower demand-side cost sharing for beneficiaries in exchange for such limitations as "gatekeeper" primary care physicians and access to only contracted military and civilian providers (GAO 1996, p.30).

in nursing homes (which came upon the scene quite suddenly and might otherwise seem more appropriate for non-investor-owned firms). This is not to suggest, however, that the ownership structure of the US approximates the ideal, even the ideal understood from a comparative advantage point of view. One may wonder, for example, how appropriate it is to have for-profits dominate among nursing homes, given the vulnerability of the frail elderly and hence the opportunities for unobserved quality-damaging cost cutting for this service.[17]

The starting point of the countries of Eastern Europe was public financing and delivery of all health care, in lines with the model of the USSR. During the past ten years of post-socialist transition, private insurance and private sector delivery have begun to develop, although they continue to represent a minority in most cases. Private commercial (FP) insurers operate in most East European countries in addition to social insurance (which is often decentralized). Private insurers cover amenities and services excluded from the basic benefit package of social insurance. Only in Slovenia does expenditure for private insurance account for more than about 1 percent of total health expenditures (Table 5).

On the delivery side, privatization has proceeded rapidly for dentists and pharmacies, but most inpatient care remains in public ownership (Table 7). Although there are important differences among countries, overall the private sector share of health service volume is only in the low single digits (Kornai and Eggleston 2000). In some cases—primary care, dental and outpatient specialist practices in the Czech Republic, and individual practices in Slovakia and Croatia—privatization campaigns specified deadlines for privatization of providers in certain categories. Entry by private providers has generally been allowed since the early 1990s.

The pace of reforms has differed across the region, partly for ideological reasons. The Czech Republic has been one of the most aggressive in fostering the private sector in health care. By 1997, 9.4 percent of Czech inpatient beds were private. Although there

---

[17] Nevertheless, within the nursing home market, ownership comparative advantage seems in evidence (see footnote 15).

are plans for further hospital privatization in many countries,[18] actual implementation has been slow. In Hungary, private hospitals received only 1.3 percent of social insurance inpatient spending, although private owners accounted for 57 percent of MRIs and 75 percent of CT scanners (see Table 8). Most countries experienced more rapid growth of private individual and small group practice. It is also important to note that a growing share of East European clinicians practice both in the public and private sectors. For example, a survey in Krakow (Chawla et al. 1999: 10) shows that 1096 specialists employed in the public sector also spent an average of 10.8 hours a week on private practice.

Rare is the opportunity to observe such large-scale 'social experiments' with different ownership changes in the health sector as are unfolding in Eastern Europe and other transitional economies. Although 'equilibrium' ownership structures are many years in the future, we venture a few conclusions about the patterns of ownership that are emerging in Eastern Europe. First, changes in economic environment—competition, payment, hardness of budget constraints—have probably been as influential on performance as ownership changes per se, as we discuss further below. Second, although a few privatization campaigns and other government-imposed programs have advanced or restricted ownership transformation, it seems to us that the health sector has to a considerable extent been allowed to 'evolve naturally' toward to new ownership structure, through private entry and privatization. Third, we consider the resulting ownership patterns to be broadly in line with the comparative advantages of public and private ownership that we highlight. In particular, private sector share has grown most rapidly for services such as dentistry and pharmacies, health services with relatively high patient ability to discern quality and make informed choices among competing providers. Private share of ownership has grown much less rapidly for inpatient facilities and public health services. This is not to say that the current ownership structure is ideal or should be frozen in place; to the contrary, there probably is wide scope for further development of the private sector (Kornai and Eggleston 2000). Nevertheless, the lessons of ownership comparative advantage and contracting for health care that have emerged so far from this

---

[18] In Poland, for example, the Ministry of Health is planning to privatize about 60 percent of the 750 hospitals during the next two years (Medicover 2000).

the evidence suggests that for-profit and private not-for-profit hospitals are far more alike than different" (Sloan 1999: 37).

Research in the 1980s and early 1990s in the US focused on differences among provider organizations that were always of different ownership types. Although NFPs often provide significantly more charity care and community benefits than FPs and generally provide more community benefits than the value of their tax exemptions, there are wide variations; and "if FPs include the amount of tax they pay as community benefits, they generally would be found to provide more community benefits than NFPs" (Shactman and Altman 1998: 199). Only recently has evidence from conversions become available for rigorous analysis. These studies also find little consistent evidence of cost and quality differences stemming from changes in profit status.

If ownership were to matter for health care, certainly the differences should be most evident in providing goods and services that are (local and general) public goods, particularly teaching and research. Yet even in this field, researchers have found little systematic difference by ownership in the US, at least for the few conversions of academic health centers (AHCs) so far subject to careful analysis.[20]

Although there is scant evidence of differences between investor-owned and non-investor-owned private hospitals, several studies do find performance to differ between public and private providers, although the evidence is far from conclusive. Public providers are not well known for being on the cutting edge of medical quality-improving or cost-reducing innovations. For example, the General Accounting Office reported to Congress that the "VA was slow to take advantage of changes in medical technology" and did not respond to changes in environment the same way as other providers: "between 1975 and 1995, the number of community hospitals decreased by about 12 percent. During the same 20-year period, VA did not close any hospitals because of declining utilization" (GAO 1998: 5-6). Sloan (1999) notes that there are some troubling results showing lower quality of care in public hospitals, although there are mixed

---

[20] In their study of three teaching hospitals sold to investor-owned hospital chains, for example, Blumenthal and Weissman (2000) found no measurable adverse impact of the ownership change on the hospitals' social missions, including teaching, research, and indigent care. "Taken together, these observations raise the question of whether ownership is a powerful predictor of the willingness of health care organizations to support the production of public goods....Local market conditions and business issues may be more

as 'providers of last resort' for uninsured, low income, or otherwise disadvantaged patients.

Studies of privatization of US hospitals confirm that conversions can lead to less uncompensated care, although these usually do not take account of the care that could be provided by the proceeds of the sale and the taxes paid if the conversion was to investor-ownership.[23]

Contracting out and constraints on public purchasers

Contracting-out for health care has a long tradition in the US. The Medicare and Medicaid programs since their inception in the 1960s have predominantly contracted for care from private providers. Yet vertical integration of government health care also plays an important role even in the US, particularly in the Department of Defense and the Veterans' Administration. The Veterans' Health Administration (VHA) grew out of direct domiciliaries for veterans in the 1800s, expanding to 54 hospitals in 1930 when the Veterans Administration was created. By 1946 when the VHA was established, it was the largest direct provider of health care in the US, with over 600 locations nationwide (GAO 1999a: 1). The General Accounting Office estimates the costs of asset ownership to be about one quarter of the VHA's total budget (GAO 1999a: 3).[24]

The VHA began systematic contracting out to private providers in the mid-1990s. Indeed, for its first fifty years (1946-1996), the VHA was not <u>allowed</u> to contract out for medical services. Most restrictions were lifted in the Veterans Health Care Eligibility Reform Act of 1996, which "expanded ability to purchase services from private

---

[23] For example, Needleman, Lamphere and Chollet (1999), studying hospital conversions in Florida between 1981 and 1996, found that (controlling for year, bed size, teaching status, and metropolitan location) public hospitals had substantially higher levels of uncompensated care than private counterparts, and privatization to for-profit status of four public hospitals resulted in a large decline in uncompensated care. Desai, Lukas and Young (2000) examined 52 privatized hospitals in three states (California, Florida and Texas) between 1981 and 1995 (15 to four-profit status and 37 to nonprofit status). They found that (1) "public hospitals that privatized provided significantly less uncompensated care before privatization than did other public hospitals, both before and after privatization," suggesting some sorting by ownership form; (2) "public hospitals that converted to nonprofit status generally sustained their levels of uncompensated care"; but (3) "public hospitals that converted to for-profit status showed a significant decline in the level of uncompensated care they provided" (p.170). It is important to remember that uncompensated care is an imperfect measure of community benefit: privatized hospitals may be more efficient in collecting bad debt (without reducing commitment to charity care), and that a focus on uncompensated care overlooks the potential community benefit from the local taxes paid by for-profit private facilities.

In Eastern Europe, contracting out is relatively novel – so much so, in fact, that a recent statement of policy advice to reformers (Kornai and Eggleston 2000) devotes considerable space to defining and advocating 'sector neutrality' in health care purchasing. Under socialism, public purchasers were required to contract with public providers. In the post-socialist era, prejudices against spending public funds to enrich private providers can still run deep. Nevertheless, the prevalence of contracting-out for services is increasing, beginning with services for which private entry and privatization have proceeded most rapidly. For example, by 1996 in Hungary, private providers received 80 percent of dialysis expenditure from the social insurance fund, and self-employed primary care physicians accounted for 76 percent of primary care doctors contracted by social insurance (see Table 8).

Performance Differences by Payment Incentives: Some Empirical Evidence

Numerous empirical studies provide compelling evidence that payment method influences medical treatment. The correlation between disaggregated (fee-for-service) payment and higher cost emerges both at the broadest (national) and narrower (organization and individual physician) levels. For example, Gerdtham et al. (1992) empirically examine the determinants of aggregate health care expenditure in 19 OECD countries, finding that FFS payment is associated with roughly 11 percent higher health care expenditure. More recently, Gerdtham and Jönsson (2000), controlling for an array of economic and institutional factors for OECD countries, find a 17 to 21 percent higher average expenditure in FFS as compared to capitation systems.

At the level of individual clinicians, capitation or salary payment is associated with less service use (fewer hospitalizations; Hillman et al. 1989). Many studies have confirmed that individual primary care physicians, like other providers, respond to payment incentives (Scott 1999). For example, Hickson, Altmeier and Perrin (1987) studied pediatricians randomized to different payment systems and found that those paid on a FFS basis more aggressively scheduled patients for visits (4.9 per year), when compared with salaried counterparts treating comparable patients (3.8 per year). A study

Eastern European countries have also seen significant reactions to payment incentives, in many cases more substantial than the (short-term) influence of ownership changes, although the evidence to date is mostly anecdotal.

Health care provider payment under socialism primarily featured historical-cost budgeting, with soft budget constraints (and no competition through patient choice). By the end of the 1990s, most countries had moved towards alternative payment methods (see Table 9). In some cases (e.g., Poland, China, Kazakhstan, Latvia) experimental reforms have taken place in pilot areas to evaluate the relative merits of such options as FFS, capitation, salary, mixed systems and fundholding. In Hungary, provider reimbursement reforms introducing aggregated pre-payment (capitation payment for family doctors and case payment for hospitals) "have had a *much greater impact on the character of service delivery than earlier changes in ownership*" (Preker and Feachem 1995: 35; italics added).

Probably the most dramatic and well-known case illustrating the power of payment incentives comes from the Czech Republic. Real health care spending in the Czech Republic increased by almost 40 percent in two years after introducing open-ended FFS (Marree and Groenewegen 1997: 64). Private practice physicians paid on a FFS basis billed significantly more in every category of service than state (primarily salaried) providers did (Massaro et al. 1994). The expenditure-increasing effects of FFS proved so powerful that in 1997 policymakers decided to revert to a global-budget method of payment. Providers immediately responded to the new incentives.[27]

Soft Budget Constraints

An organization enjoys a soft budget constraint if it can continue to operate despite consistently exceeding its budget, because some institution (such as the government) refinances it (Kornai 1980, 1986, and 1998a). Although expenditure over-runs can sometimes be efficient (e.g., to allow for emergencies such as natural disasters), a soft budget constraint has far less benign efficiency implications. Expecting a bail-out,

---

[27] Under the new budget system, each health care organization receives a quarterly budget 100 per cent of its previous quarterly budget, so long as its performance as measured primarily by volume is not less than 70 percent of the performance in the previous period. According to Czech doctors, the effect of the change was immediate, with a 30 per cent fall in those measures of hospital performance upon which payment was based (Benedict 2000, as cited in Kornai and Eggleston 2000).

1998 carried out an extensive bail out of the health sector, which had amassed debts of several billion dollars (OECD 2000).

Although other evidence also suggests that the health sector at an aggregate level may enjoy a fairly soft budget constraint,[28] the prevalence of soft budget constraints at the individual institution or provider level seems more critical. Even if a hard overall spending cap is imposed on a sector, inefficiency will continue to proliferate when individual firms in the sector anticipate refinancing despite poor performance. Certainly hospitals and other health care providers in many cases still feel entitled to refinancing. For example, when one Hungarian provincial hospital incurred large budget over-runs in 1998, one of its senior physicians began a hunger strike to force the government to cover its losses, which in the end the government agreed to do (Kornai and Eggleston 2000). Public hospitals in the US and other countries are not immune. For example, the VA has tried to "imitate" private sector purchasing strategies such as utilization control methods to reduce unnecessary hospitalizations, but VA physicians' response is likely to be muted "absent the risk of nonpayment for non-acute admissions that exists in the private sector" (GAO 1998, p.7).

Although dynamic incentive problems of government purchasing can apply to contracted private providers as well as state-owned facilities,[29] we argue that there are many reasons for government providers rationally to expect a softer budget constraint. The lack of consistent systematic evidence of less efficiency in public providers in established market economies is all the more surprising in light of the tendency toward soft budget constraints that differentially plagues public ownership.

We also argue that disaggregated payment is similar to a soft budget constraint. Under FFS payment, providers (whether public or private) need not consider the constraints of a fixed budget when making clinical decisions. The payer promises to reimburse a fee for each service billed, and providers may have considerable influence

---

[28] For example, health spending for most Eastern European countries was largely insulated from the dramatic transformational recessions following transition (Kornai and Eggleston 2000), and these countries continue to spend a higher percentage of GDP on health than market economies of similar per capita income (Kornai and McHale, in print).

[29] A government may not be able to promise credibly not to expropriate private profit once irreversible investments have been made (Rodrik and Zeckhauser 1987). Moreover, regulation and taxation can be used opportunistically: "The power to regulate becomes the power to confiscate" (Zeckhauser and Horn 1989: 26).

specific investments that lead to sorting of consumers). Finally, implementation of innovations in their model fully specifies the ex post outcome, rather than defining a production possibilities frontier along which providers choose a production bundle. Yet for health care, the 'stylized facts' of US and Eastern European experience, as well as of many other countries, suggest that ownership *per se* is frequently less critical than such factors as competition and payment incentives, which influence quantity of service for heterogeneous patients. Systematic lower cost of private providers is not supported by the evidence; payment can be disaggregated as well as aggregated, with important effects on performance; competition can and often does play an important role for many services; nonprofit private ownership is prevalent; and consumer diversity presents a crucial contracting challenge. The model presented in this section is designed to highlight these characteristics of health care ownership and contracting with a series of natural extensions of the Hart, Shleifer and Vishny (1997) framework.

The government purchases a health service for its beneficiaries by either producing the service in-house through employing a manager G to run a facility (e.g., a hospital or an integrated provider organization) or contracting with a private provider M who owns a facility.[32] In addition to providing quantity of treatment q per patient, the provider may invest in noncontractible cost-cutting innovations e and quality enhancement innovations i at a constant marginal cost of 1. Cost per patient treatment episode $C(e,i,q)$ is convex in q and i and decreasing in e (with decreasing marginal returns): $C_e<0$; $C_{ee}>0$; $C_i>0$; $C_{ii}>0$; $C_{ei}=0$ (for simplicity); $C_q>0$; $C_{qq}>0$.

Patients, who are identical, receive 'free' treatment[34] from the assigned provider. (Patient heterogeneity and choice of provider are considered later). Although ex ante consumers (taxpayers) would wish to minimize cost for a given quantity and quality, ex

---

[31] HS&V'97 first consider a selfless 'social planner' and then discuss the political economy of privatization when politicians may be swayed by patronage or corruption considerations.

[32] We assume M owns a facility since the property rights theory defines ownership in terms of asset control. M could also be an outside manager hired on a long-term contract, so that M has effective residual rights of control over a state-owned facility. Hiring an outside manager for a fairly short period of time is an intermediate case that we hope to model in future work, given its empirical relevance for health care contracting.

[33] In other words, for simplicity the model abstracts from demand-side cost sharing, assuming full government revenue financing.

[34] In other words, for simplicity the model abstracts from demand-side cost sharing, assuming full government revenue financing.

innovations e and i requires approval of the owner of the facility. Accordingly, the private manager M may undertake these innovations freely according to her incentives, but G must obtain prior approval from the government (that is, her superior(s) in the government hierarchy).[36] For simplicity, all parties are assumed to be risk neutral.

The timing is as follows. At date 0, the government and provider sign a contract for provision of the basic service, including payment method, and the provider receives prepayment (if any). At date 1 the manager invests in cost-cutting and quality-improving innovations and incurs the costs of providing services to patients. If payment is disaggregated to a unit of treatment, the government pays the agreed price per quantity provided.[37] At date 2, the government and manager may renegotiate the contract, including implementation of any innovations not yet implemented, or extraction of additional payment even in the absence of increased surplus, if the budget constraint is soft. Whether or not to renegotiate, and over what, must be analyzed on a case-by-case basis, since it will differ according to such factors as payment method and monitorability. For simplicity we assume the parties split the surplus from renegotiation 50:50. Symmetric information assures that renegotiation is efficient ex post, but there may be inefficient levels of ex ante investments in e and i that distort social surplus. In this framework, it is the endogenous differences in cost control and quality improvement that distinguish ownership forms, since incentives for e and i differ systematically according to who has residual rights of control.

Social optimum

As an efficiency benchmark, consider a world of complete contracts. The government would contract to maximize social surplus from provision of the service, including efficient levels of innovation:

$$\underset{q,e,i}{Max}\{B(e,i,q) - C(e,i,q) - e - i\} \tag{1}$$

---

[36] G may also be subject to alternative pressures, such as from a government employee union.

[37] Although q is not contractible, it is mutually observable, which serves to deter fraudulent over-billing under utilization-based payment if there is any option for switching contracted providers. The noncontractibility of q does, however, preclude the government purchaser from preventing over-utilization by any given patient.

comprehensive payment could be made at any time, we refer to it as pre-payment since at the time the payment levels are set, the provider already knows exactly what revenue is attached to a case (regardless of actual utilization).

Hart et al. (1997) assume aggregated pre-payment ($s=1$), finding that private providers may over-invest in cost control, since they do not internalize the quality-damaging side effects. This case emerges as a special case of our model, when quality is not monitorable. However, payment method can reward appropriate innovations to the extent that patients can identify and respond appropriately, even without explicit competition among providers for patients. Primarily this demand response stems from patient influence on quantity of treatment, including the option of 'self-treatment' if the contracted provider does not offer a better alternative. Higher quality attracts more patients for formal treatment.[39] This demand response helps a provider to internalize the quality-damaging effects of cost control measures.

Private Ownership (For-Profit)

Under contracting-out, the government seeks to maximize service benefits for beneficiaries less payment to the private provider:

$$U_G = B(e,i,q) - sR - (1-s)pq \tag{6}$$

A for-profit private manager seeks to maximize net revenues. (Altruism, or caring for patient interests, is considered in a later section.) In other words, M maximizes payment less the costs incurred in treating patients and in developing cost-control and quality-enhancing innovations:

$$U_M = sR + (1-s)pq - c(e,i,q) - e - i \tag{7}$$

Let us first consider incentives for innovation at date 1. In the absence of renegotiation (i.e., if the parties committed not to renegotiate), the levels of e and i would follow from the first order conditions equating marginal net revenue from innovation to marginal effort cost:

---

[39] Chalkley and Malcomson (1999) note that "demand may increase with quality either because quality influences where patients go for treatment or, in non-emergency cases, because it affects whether they go for treatment at all. The latter may be significant—in general, quality reflects the probability of complications, cross infection, and so on. Thus, even where there is no choice about where a patient goes for treatment, quality may still affect demand" (p.8).

This shows clearly that FFS (s=0) rewards high utilization (through the highest marginal benefit of q, the left-hand side of (10)), whereas prepayment encourages limiting q (e.g., to q_0). FFS may result in excessive utilization and "excessive quality" stemming from provider indulgence of patient moral hazard or even supplier-induced demand.

The above results are consistent with the general understanding of payment incentives in the health economics and health services literature. Now, however, we consider what happens when there is potential for renegotiation. If the provider anticipates at date 1 that renegotiation will occur at date 2, ex ante investments in quality will reflect anticipated additional government payment.[40] (Following Hart et al.1997, we assume renegotiation will not affect e, since the private provider's control rights over the facility preclude the government from preventing modifications that reduce costs, even if they damage quality.)

We will illustrate the effects of renegotiation using an arbitrary sharing formula, 50:50. Giving the manager more would lead to greater incentive for cost control and quality innovations. In general, it would be advantageous the make the split of cost savings or increased surplus depend on the actions of the manager, to the extent they are monitorable. For simplicity we focus on the extreme case of noncontractible innovations and inability to commit to an alternative split of the surplus. Any overall split of compensation between government and manager can be achieved through choice of ex ante lump sum payment to the manager.

Since the surplus from renegotation over quality improvement is split 50-50 between the government and M, even a fully pre-paid FP provider who need not compete for patients will have some incentive for quality improvement.[41] The first order condition for the FP provider's choice of i becomes

$$(1-s)pq_i + \frac{1}{2}\left[B_i + B_q q_i\right] - c_i - c_q q_i = 1.$$ (11)

[40] We assume the renegotiation payment to the provider is made as a lump sum, although it could also be in the form of a higher fee per service, which has implications for future quantity of care.
[41] For example, a provider may develop plans for four new quality assurance programs, but only implement one or two as pilots. The provider can then bargain with the government purchaser, saying "I am providing more than the basic good now, see quality improvements a and b? I will also implement improvements c and d, from which your beneficiaries will benefit even more, if you make it worth my while."

benefits and costs associated with the contractible basic service be $B_o \equiv B(0,0,q_0)$ and $C_o \equiv C(0,0,q_0)$. Just as a private manager, the public manager may take initiative to control costs and enhance quality of care. As a civil servant, however, G must obtain approval from her supervisor or other relevant authority (i.e., renegotiate) before innovations can be implemented. The government (i.e., the supervisor) seeks to maximize benefits to patients less payment to G, which (just as for the private contractor M) may be bundled per-patient (s=1) or a fee per service (s=0). Benefits beyond contractible B_o depend on the manager's innovations, which for simplicity we assume are fully embodied in his or her human capital until implemented. Without renegotiation to obtain approval and compensate G, innovations are not implemented. With renegotiation, the net benefit from the improved service is split between government and G. The government objective function is thus

$$U_{Govt} = B_o + \frac{1}{2}\left[B(e,i,q) - C(e,i,q) - (B_o - C_o)\right] - sR - (1-s)pq. \qquad (12)$$

The manager seeks to maximize payment, including compensation for innovation, less the cost per case and the effort costs of developing innovations:

$$U_G = sR + (1-s)pq + \frac{1}{2}\left[B(e,i,q) - C(e,i,q) - (B_o - C_o)\right] - C(e,i,q) - e - i \qquad (13)$$

By anticipating the surplus from renegotiation, the public manager takes some account of how choices of q, e, and i will affect patient benefits from use of the service. This is one of the primary strengths of public ownership. However, G's lack of control rights leads to a 'hold up' problem, in the sense that G cannot reap the full rewards of cost control and quality enhancement initiatives. At the same time that this prevents excessive cost cutting that damages quality,[42] it also blunts the public manager's incentive to improve quality of service. G chooses e_G and i_G according to the first order conditions

$$(1-s)pq_e + \frac{1}{2}\left[B_e + B_q q_e - c_e - c_q q_e\right] = 1, \text{ and} \qquad (14)$$

$$(1-s)pq_i + \frac{1}{2}\left[B_i + B_q q_i - c_i - c_q q_i\right] = 1. \qquad (15)$$

---

[42] "Since [public] managers have no ownership stake in the enterprise,…[they have] less incentive to raise prices or cut corners to increase profits" (Zeckhauser and Horn 1989: 27).

quality health care for their beneficiaries, and a violation of economic principles of modeling. It also would preclude analyzing what many consider to be the motivating force behind the prevalence of nonprofits in the health sector.

Adding altruism to the model is straightforward. Let a provider, M or G, derive utility not only from direct compensation but also from patients' treatment benefits, in the amount $\alpha B(e,i,q)$. The agency parameter α captures provider altruism on behalf of patients. The larger α, the more weight the provider puts on patient benefits (as opposed to financial rewards). High α providers are good agents for patients, i.e., there are fewer agency problems between provider and patient.

Although residual control rights and residual income rights are often bundled together on a one-to-one basis, they need not be (Hart 1995). Not-for-profit (NFP) enterprises are one example. Ownership in terms of firm insiders having residual control rights (as opposed to residual income rights) is the same for all forms of private ownership, FP or NFP. NFPs will also presumably seek to maximize net revenues or 'profits,' but instead of distributing those funds to shareholders will instead allocate them to other uses that firm insiders decide, be it community benefit programs, 'contingency funds,' or higher employee perks. The property rights ownership framework therefore extends intuitively to NFP ownership.

If for-profit (FP) and NFP firms are conceptually equivalent in terms of ownership by the 'insiders' of the firm, what distinguishes the two? Hansmann (1980) posits that NFP ownership may develop as a signal of trustworthiness to consumers, particularly in markets characterized by asymmetric information between consumers and providers. In this spirit, we follow Selden (1990) in positing that NFP ownership is associated with an average degree of altruism, or agency on behalf of patients, that is at least as great as in FPs: $\alpha^{NFP} \geq \alpha^{FP}$. In other words, *agency problems* between patients and NFP providers are no greater, and sometimes less, than FP providers. Physicians and other health care providers with a certain style of practice may be differentially attracted to NFP health organizations, or FP firms may actively recruit providers with a greater receptiveness to shareholder interests. The level of altruism may be reflective of the economic value of investing in and upholding a *good reputation*. The model does not assume that every provider associated with a FP gives less weight to patient benefits than

33

Comparing to (8) and (9), the added second term, which reflects altruism, increases incentive to provide socially optimal cost and quality innovations. For 'high' altruism, the provider takes full account of the impact of innovations on patient benefits, and hence internalizes the full social marginal benefit. As Arrow (1963) suggested, a 'perfect agent' ($\alpha=1$) can balance the interests of patients and society.

The following cases serve to illustrate how the combination of payment incentives and degree of altruism can be more important than ownership per se in shaping provider behavior and social surplus:

A. *Prepayment of a private agent with low altruism—a pure profit-maximizer—can lead to excessive, quality-damaging cost reduction.* If s=1 and $\alpha=0$, then $e_M > e^*$, $i_M < i^*$. This is essentially the case posited by Hart et al. (1997). But the opposite is also possible (see C below), depending on *how* and *with whom* the government contracts-out health service delivery.

B. *Prepayment of a highly altruistic private agent approximates first best.* If s=1 and $\alpha=1$, then the first order conditions are the same as for the social optimum, and innovations are at first-best levels ($e_M = e^*$, $i_M = i^*$).

C. *FFS payment of a highly altruistic private agent can lead to excessive quality and high cost.* If s=0 and $\alpha=1$, then $e_M < e^*$, $i_M > i^*$.

D. *FFS payment of a private agent with low altruism can lead to mixed results.*

If this model of altruism and NFP behavior is a reasonable approximation, then the comparative advantage of NFPs is simple to see. NFPs combine the flexibility of private ownership with the patient-centered concerns of the (public) purchaser. In a sense NFPs lie "in between" public and FP private ownership, with concomitant strengths and weaknesses. For example, a highly altruistic NFP would not exploit patients' imperfect monitorability to distort quality along less-observable dimensions. Indeed, a 'perfectly altruistic' provider would choose the same package of quality innovations among services that it would if there were perfect monitoring by patients and/or purchasers, unless losing patients to competing providers challenges the NFP's viability. To look at this qualification more explicitly, we turn to a simple model of how provider competition

Choices of investment in cost and quality innovations are now explicitly dependent on how consumers react:

$$n_e[sR+(1-s)pq-c(e,i,q)]+n[(1-s)pq_e - c_e - c_q q_e] = 1 \qquad (21)$$

$$n_i[sR+(1-s)pq-c(e,i,q)]+n[(1-s)pq_i - c_i - c_q q_i] = 1 \qquad (22)$$

Comparing these first-order conditions to those for a private FP provider assigned patients [(8) and (9)], competition adds the first term. When patients are profitable ($[sR+(1-s)pq-c(e,i,q)] > 0$), competition gives additional financial incentive for patient-observable quality improvement, and mitigates incentive for cost cutting that damages patient-observable quality.

To illustrate the impact of multiple dimensions of quality with different degrees of monitorability by patients, consider two kinds of cost reduction, e_1 and e_2, each with marginal effort cost of 1. Both damage quality of care to some extent, but cost cutting through investment in e_1 is perfectly monitorable, whereas e_2 is invisible to patients ($n_{e_2} = 0$; $q_{e_2} = 0$). For example, e_1 might represent amenities of care, whereas e_2 represents technical aspects of care that patients cannot discern or judge. Competition gives much stronger incentives to invest in e_2:

$$n_{e_1}[sR+(1-s)pq-c(e_1,e_2,i,q)]+n[(1-s)pq_{e_1} - c_{e_1} - c_q q_{e1}] = 1 \qquad (23)$$

$$n[-c_{e_2} - c_q q_{e_2}] = 1 \qquad (24)$$

The first-order condition for cost cutting through fewer amenities (23) reflects strong disincentives because of loss of profitable patients (through the negative first term). In contrast, the marginal benefit of cost-cutting through technical aspects of care unobservable to patients (the left-hand side of (24)) is as large as that of a pre-paid FP provider assigned patients (compare (8) with s=0). Thus, competition among FP private providers gives strong incentives to focus cost control on aspects of care for which "hidden" quality damage does not lead to loss of competitiveness, through direct loss of patients or loss of reputation for quality care.

The affect of competition on public and NFP private providers is analogous, and these incentives can conflict with the altruism or role of back-stop provider often associated with these ownership forms. Consider, for example, a NFP that is highly altruistic. If there is competition and patients can only observe limited dimensions of

Patient heterogeneity and selection

Competition may push providers to engage in inefficient patient sorting and discrimination—called 'risk selection'. Integrated insurer-provider organizations (e.g., HMOs or capitated group practices) that seek to maximize net revenue, for example, will wish to avoid high-risk enrollees such as elderly patients with multiple chronic health conditions, unless otherwise compensated for the above-average costs of such enrollees. Risk selection involves several kinds of inefficiencies, including preventing consumers from insuring against risk reclassification: "The most serious objection to risk segmentation is the ex ante concern that it undermines long-term insurance contracts that would protect consumers against changes in lifetime risk" (Feldman and Dowd 2000: 499).

We develop a simple model to capture the primary concerns regarding such inefficient consumer sorting. Assume patients are of two kinds, high and low severity. Costs of treatment are linear, but differentially high for high severity patients, H, who also derive greater benefits per unit treatment than their low severity counterparts: $c^H(e,i) > c^L(e,i)$ and $B_q^H(e,i) > B_q^L(e,i)$. Providers can exert effort **t** ($0 \leq t \leq 1$) to select against high severity patients. One example might be quality distortions for services valued by high severity patients--what Glazer and McGuire (2000) call the *service quality distortion problem*). Assume that risk selection operates through skimping, i.e., by exerting selection effort **t**, the provider can persuade the high severity patient to utilize less than the otherwise desired quantity of treatment (Eggleston 2000):

$$(1-t) \cdot q^H(e,i) + t \cdot q^L(e,i) \equiv q^H(e,i,t); \; q_t^H < 0. \tag{25}$$

When patients are assigned, **t** represents reduction in H utilization that stops short of dumping (because patients have no choice of provider). We include this illustration prior to discussing competition based on patient choice to underscore that payment incentives may lead to patient discrimination problems even when providers cannot formally exclude patients (i.e., are prohibited from turning away patients). There are increasing marginal costs of risk selection, $\gamma(t)$. These might represent such factors as risk of being sued, time and effort devoted to quality distortions, and professional conscience.

'creaming' (Ellis 1998) innovation **r** with convex costs $\psi(r)$ attract L patients ($n_r^L > 0$)

through an increase in (low-marginal-benefit) treatment, $q_r^L > 0$. An example might be

health plans offering wellness programs such as a health club membership along with

enrollment. A provider assigned patients would not have incentive to 'cream' profitable

patients. A provider competing for patients, however, will have incentive to 'cream' up to

the point at which the added effort and treatment or program costs dissipate the net

benefits from creaming (Newhouse 1998):

$$n_r^L \pi^L + n^L \pi_r^L = \psi'(r). \tag{29}$$

There may in fact be a 'skimping and creaming arms race' among competing providers

vying to attract the most profitable patients and dump unprofitable patients. Increased

skimping by one provider drives up skimping by competing providers both because it is

more costly to get rid of someone and because there are more H patients on whom to

skimp.

One way to ameliorate incentives for creaming and dumping is to make selection

partially contractible by adjusting pre-payments—case-based, capitation or premium

payments—for observable and verifiable characteristics of enrollees (e.g., age, gender,

diagnoses). "Risk adjustment is the term used to characterize the literature on adjusting

premiums for enrollee characteristics.... The intent is to match the enrollee's expected

cost more closely and thereby reduce plan incentives to select good risks" (Newhouse

1996: 1256). Accurate risk adjustment would allow a purchaser to contract out to

competing private providers without fear of selection inefficiencies. The effectiveness of

risk adjustment is affected by the extent and form of purchaser subsidy, with greatest

effectiveness when the subsidy is fixed-dollar across choices (vs. a percentage subsidy,

which makes the high-cost plan appear cheaper). Unfortunately, even the most

sophisticated forms of risk adjustment are not powerful enough to prevent selection

altogether, but they do represent a potent step forward. Nevertheless, risk adjustment is

currently not widespread. Keenan et al. (2000) survey the use of risk adjustment for

health plan purchasing in the US, finding that it is used for about one fifth of enrollees,

primarily beneficiaries insured under public purchasers such as Medicare and Medicaid,

as well as state governments.

Public providers designated to serve specific populations also face selection incentives. In the US, for example, "both VA's strategic goals and the incentives it is creating through some of its restructuring efforts suggest that VA, like many community hospitals, is focusing its marketing efforts on attracting revenue-generating patients" (GAO 1998: 5). "GAO is concerned... [that] new medical cost recovery provisions could inadvertently provide financial incentives for individual facility managers to, at least in the short term, focus on serving revenue-generating patients" (ibid:14).

But public ownership, by retaining ultimate control in the hands of state authorities, constrains public managers in their opportunities and flexibility for risk selection. In the case of the VA, congressional concerns that the VA was not appropriately maintaining its level of certain high-cost specialized services--such as treatment for spinal cord dysfunction, blindness, amputation, and severe mental illness-- fostered legislation to ensure that volume of these services did not decline below 1996 levels (GAO 1999b:13). Such anecdotal evidence supports the comparative advantage argument to assign government-owned health providers (and, to a lesser extent, NFP private providers) responsibility for health services and patient populations most susceptible to inefficient selection behavior.

An analogy can be drawn to educational policy, where concerns regarding market sorting--by student ability and income, similar to patient sorting--gives pause to policymakers otherwise eager to harness the benefits of privatization and competition, say through vouchers, to increase productivity, choice and quality. The educational analogy to risk selection is vertical (quality) differentiation. Design of voucher schemes to ameliorate the adverse effects of such student sorting are similar in spirit to risk adjustment techniques for mitigating risk sorting of patients. Although some observers are convinced inefficient sorting can be minimized if not eliminated (e.g., Shleifer 1998), others are less sanguine.[52] Attention to these issues is critical for accurate analysis of the distributional and efficiency effects of ownership structure and competition not only in

---

[52] For example, Epple and Romano (1998) highlight the importance of student sorting by ability and income when there is competition between public and private schools. In their model, equilibrium entails a strict hierarchy of school qualities and two-dimensional student sorting with stratification by ability and income. Just as we posited that public health care providers act as 'backstop providers', Epple and Romano (1998) find that public schools end up with the lowest ability student group.

and rewards the latter, especially on dimensions to which patients will respond, so that quality may be 'excessive' (along certain dimensions) while costs soar (that is, $e^{FFS} < e*$ and $i^{FFS} > i*$ is quite likely). FFS thus represents a soft budget constraint if the government would be better off if it could commit to refuse to reimburse 'excess' claims ($q > q*$). Such a commitment ex ante would reduce inefficiency by encouraging the provider to reallocate effort from 'supplier-induced demand' toward more socially productive uses.

Soft budget constraints and their associated inefficiencies, however, cannot be eliminated entirely by changing the provider payment method. The phenomenon is more general, and presents particular challenges to vertically integrated government provision. We develop a simple model based on Dewatripont, Maskin and Roland (2000).

Assume there are two kinds of managers. The fraction h of managers can produce cost control (e) and quality improvement (i) innovations at a constant marginal cost of 1 (as above). The proportion (1-h) of managers has a higher constant marginal cost of e and i, 1+z. We label the latter 'type b' managers. Manager type is initially private information, but gets revealed to the government after contracting with that M one period.

According to the above first-order conditions (for private FP, NFP, or public providers), higher marginal cost implies fewer innovations by the b managers, and the total surplus generated by innovation is lower (under either ownership structure). Assume the surplus under a regular manager is S and under a b manager is $S_b < S$. Let the expected surplus generated by a randomly chosen manager be $\bar{S} = hS + (1-h)S_b$. If the government wishes to switch providers at Date 2, it must incur costs F>0. For example, these might be administrative costs of enrolling beneficiaries in a new health plan, or represent welfare loss from a break in patient continuity of care.[54]

Under these circumstances, a bit of algebra shows, the government will not switch providers when M is revealed to be b if

$$F > h(S - S_b). \tag{31}$$

---

[54] Continuity of care and long-standing patient-physician relationships can help to control cost as well as maintain quality. Weiss and Blustein (1996) found that Medicare patients with longer physician ties has a decreased likelihood of hospitalization and lower costs.

The tendency of government-owned facilities to operate with soft budget constraints suggests that FP and NFP private providers have a comparative advantage in providing services for which the inefficiencies of persistent re-financing outweigh the benefits of lower-powered incentives for quality-damaging cost control and inefficient sorting of patients. The phenomenon also suggests that the public sector will face special challenges in recruiting and retaining the most capable clinicians and managers, despite the appeal of public service for those with altruistic motivations.

IV. Conclusion

The absolute distribution of public, private for-profit, and private nonprofit health care providers in any given country is frequently the result of ideological factors and what might be called historical accident. Eastern European countries, for example, are likely to continue to have a larger presence of state ownership in the health sector than economies that were never socialist. Economic analysis of relative efficiency can and should play a role, however, at least in determining the *comparative* advantage of different ownership forms for delivery of different health services. The experiences of the US and Eastern Europe, as well as many other countries, generally supports the following conclusions, derived from our application of the property rights theory of ownership to the distinctive features of health care contracting.

- For health care, ownership can be important, but other factors are just as critical: competition, payment incentives, and hard budget constraints. *How* to contract out matters as much as whether or not to do so, and to whom.

- The sorting of health care facilities among ownership forms in many countries appears to a considerable extent to respect principles of comparative advantage. Factors such as history and access to capital may impede this process. Focusing on comparative advantage and policy mechanisms that enable it can be effective and beneficial.

47

services; usually non-emergency, so price elasticity of demand is higher; multiple sampling, so that patients are able to learn from their own experience as well as provider reputation (Sintonen and Linnosmaa 1998). All these characteristics suggest that most dental care is a prime candidate for the delivery through private, competitive markets. Indeed, in most countries, dental care has a much smaller component of public payment and direct provision than does health care in general.

On the other hand, nursing homes and mental health care providers cater to a clientele who, almost by definition, are far less capable of being informed, discerning, and profitable patients. For these health services, a role for public and nonprofit providers seems well warranted,[59] as well as particular attention to the contracting framework (e.g., risk adjustment of aggregated pricing). Other services, such as inpatient hospital care, are less clear-cut. It is in this arena of nebulous middle ground where the comparative advantage of nonprofit ownership—with the flexibility and higher-powered incentives of private ownership, yet the tradition of altruistic 'agency' on behalf of patients and community—comes to the fore.

---

[59] The comparative advantage framework suggests, therefore, that of all the major delivery segments in the US health sector, the ownership structure of nursing homes—where FP providers dominate—is the most questionable.

Table 2: Sources of Health Insurance Coverage for the United States Population

Source	Groups insured	Share of total population	Share of total payments
Public			
Medicare	Elderly; disabled; end-stage renal disease	13%	22%
Medicaid	Elderly; blind and disabled; poor women and children	10	15
Other*	Military personnel and their dependents	1	8
Private			
Employer sponsored	Workers and dependents	56	53
Nongroup	Families	6	
Uninsured		16	2

* Other public spending includes non-insurance costs such as public hospitals, the Veterans Administration, etc.
Source: Authors' calculations based on data from Department of Health and Human Services, National Health Accounts (medical spending), and from Employee Benefit Research Institute (insurance coverage).

Table 4. Shift toward the German model of social insurance in Eastern Europe

Country	Year of introduction	Autonomy	Controlled by the government	Notes
Bulgaria	1999–		Yes up to 2000	
Romania	1999–	Yes		Since 1999, geographically decentralized SIFs[1]
Poland	1999–	Yes		Since 1999, geographically decentralized SIFs
Albania	1994–		Yes	Restricted SIF finances only drug reimbursement and PCPs
Czech Republic	1992–	Yes		Since 1993, decentralized, competing, nonprofit health-insurance funds
Slovakia	1994–	Yes		Since 1993, decentralized, competing, nonprofit health-insurance funds
Hungary	1991–	Yes up to July 1998	Yes from August 1998	
Croatia[2]	1945– (1993)	Yes		
Macedonia[2]	1945– (1991)		Yes	
Slovenia[2]	1945– (1992)	Yes		

[1] SIF stands for social insurance fund.

[2] In contrast with other socialist countries, Tito's Yugoslavia did not discontinue the occupation-based SIFs from before 1945. Croatia, Macedonia and Slovenia introduced a national SIF in the early 1990s.

Source: Kornai and Eggleston 2000.

Table 6. Share of private insurance in Eastern Europe

| Country	Provided by	For what	Expenditure for private health insurance
Bulgaria	Commercial insurers	Amenities	Minimal
Croatia	Commercial insurers Nonprofit insurers	Amenities excluded from basic package, copayments	Minimal
Czech Republic	Nonprofit insurers Commercial insurers Foreign managed-care companies	Amenities excluded from basic package, care in private hospitals	Minimal
Hungary	Commercial insurers Voluntary health funds Foreign managed-care companies	Amenities, care in private hospitals, loss of salary during sickness, gratuities	Minimal
Macedonia	Commercial insurers Voluntary health funds		Minimal
Poland	Commercial insurers Foreign managed-care companies	Amenities excluded from basic package, care in private hospitals	Minimal
Romania	Commercial insurers		Minimal
Slovakia	Commercial insurers Foreign managed-care companies		1 % of total health expenditures (1995)
Slovenia	Slovenian Health Insurance Fund Commercial insurers on voluntary basis	Copayments, drugs, emergency care abroad	12 % of total health expenditures (1997)

Sources: Kornai and Eggleston 2000.

Table 9. Payment systems in Eastern Europe, 1997

| Country	Primary care	Outpatient care	Inpatient care
Albania	Capitation	Global budget and salary Planned: FFS	Global budget and salary
Bulgaria	Global budget and salary	Global budget and salary	Global budget and salary
Czech Republic	FFS Planned: capitation	FFS with national cap and full cost reimbursement for certain inputs	FFS with national cap, full cost reimbursement for certain inputs and per diem fee Since June 1997, global budget
Croatia	Capitation and FFS	FFS and salary	FFS
Hungary	Capitation	FFS with national cap	Case-based payment (DRG)
Macedonia	Capitation	Global budget and salary Planned: FFS	Global budget and salary Planned: Case-based payment
Poland	Global budget and salary Since 1999, capitation and FFS	Global budget and salary Since 1999, capitation and FFS (according to the choice by the territorial fund)	Global budget and salary Since 1999, case-based payment (according to the choice by the territorial fund)
Romania	Global budget and salary Since 1999, capitation and FFS	Global budget and salary Since 1999, capitation and FFS	Global budget and salary Since 1999, case-based payment
Slovakia	FFS Experimentally: combined with capitation	FFS	Per diem fee paid prospectively Experimentally: case-based payment
Slovenia	Capitation and FFS with a national cap	FFS	Per diem fee and FFS with a national cap

Source: Kornai and Eggleston 2000.

Figure 1: The Medical Care Triad
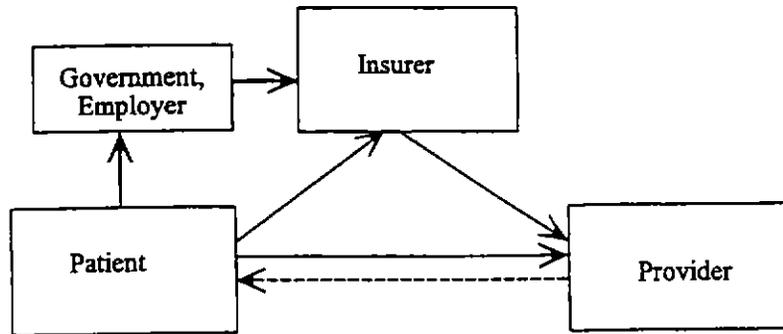
Solid lines represent money flows; the dashed line represents service flows.

Figure 3. Deficits of the social health insurance funds in Croatia, Hungary and Slovenia
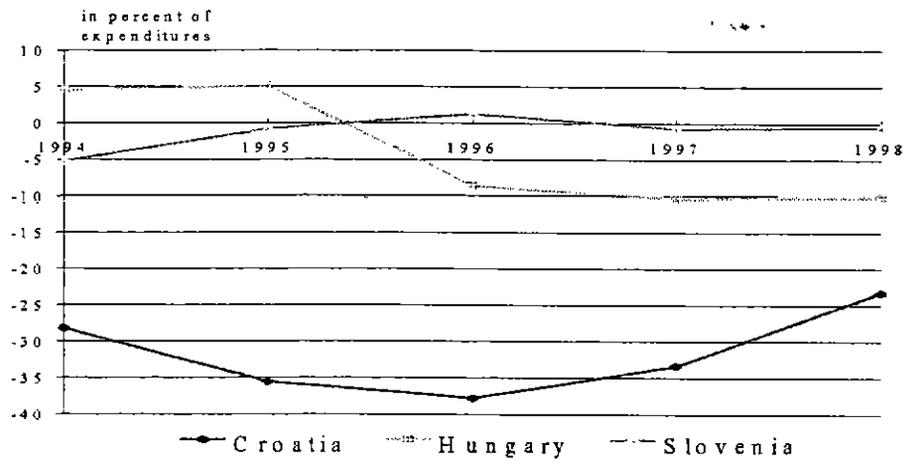
Sources: Kornai and Eggleston 2000.

Altman, Daniel, David M. Cutler, and Richard J. Zeckhauser, 2000, Enrollee Mix, Treatment Intensity, and Cost in Competing Indemnity and HMO Plans, mimeo.

Arrow, Kenneth J. 1963, Uncertainty and the welfare economics of medical care, *The American Economic Review* 63: 941–73.

Benedict, Ágnes, 2000, A cseh egészségügyi reformról (On the reform of the health sector in the Czech Republic), *Egészségügyi Gazdasági Szemle* 38: 83–98.

Blumenthal, David, and Joel S. Weissman 2000, Selling teaching hospitals to investor-owned hospital chains: three case studies, *Health Affairs* 19 (2): 158-166.

Bognár, Géza, Gál, Róbert Iván and Kornai, János 2000, *Hálapénz a magyar egészségügyben* (Gratuity money in the Hungarian health sector), *Közgazdasági Szemle* 47: 293–320.

Boycko, M., A. Shliefer, and R. Vishny, 1995, *Privatizing Russia.* Cambridge: MIT Press.

_____, 1996, "A Theory of Privatization," *The Economic Journal* 106 (March): 309-319.

Chalkley, Martin, and James M. Malcomson, in print, Government purchasing of health services, in Anthony J. Culyer and Joseph P. Newhouse (eds) *Handbook of Health Economics.*

Chawla, Mukesh, Tomasik, Tomasz, Kulis, Marzena, Windak, Adam and Rogers, Deirdre A., 1999, *Enrollment Procedures and Self-selection by Patients: Evidence from a Family Practice in Krakow, Poland,* Discussion Paper No. 66. Boston: Harvard School of Public Health.

Claxton, Gary, Feder, Judith, Shactman, David and Altman, Stuart 1997, Public policy issues in nonprofit conversions: An overview, *Health Affairs* 16: 9–28.

Coulam, Robert F. and Gaumer, Gary L. 1991, Medicare's prospective payment system: A critical appraisal, *Health Care Financing Review* 13: 45–78.

Culyer, Anthony J. and Newhouse, Joseph P. (eds) in print *Handbook of Health Economics,* Amsterdam: North Holland.

Cutler, David M. and Zeckhauser, Richard, 1999, The anatomy of health insurance, National Bureau of Economic Research Working Paper 7176, June 1999; forthcoming in Culyer and Newhouse (eds).

Delfosse, R., 1995, Hospice and home health agency characteristics: United States, 1991. National Center for Health Statistics. Vital Health Stat 13(120).

Desai, Kamal, Carol VanDeusen Lukas, and Gary J. Young 2000. Public hospitals: Privatization and uncompensated care," *Health Affairs* 19(2): 167-172.

Dixit, Avinash K. 1996. "Multiprincipal, Multitask Agencies," in *The Making of Economic Policy: A Transaction-Cost Politics Perspective* (Cambridge, MA: MIT Press): 157-171.

Dranove, David, and Mark A. Satterthwaite, 1999, The Industrial Organization of Health Care Markets, forthcoming in Culyer and Newhouse (eds).

Eggleston, Karen, 2000, Health Insurance and Provider Payment System Design: Multitasking, Competition and Selection, paper prepared for the Seventh Northeast Regional Health Economic Research Symposium, August 17-18, 2000.

Ellis, Randall, 1998. Creaming, skimping and dumping: Provider competition on the intensive and extensive margins. *Journal of Health Economics* 17, 537-555.

Grossman, S., and O. Hart. 1986. "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration," *Journal of Political Economy* 98: 1119-1158.

Hansmann, Henry. 1980. "The Role of Non-Profit Enterprise," *Yale Law Journal* 91 (November 1980): 54-100.

Hart, O. 1995. *Firms, Contracts, and Financial Structure*. Oxford: Oxford University Press.

Hart, O., and J. Moore. 1990. "Property Rights and the Nature of the Firm," *Journal of Political Economy* 1990: 1119-58.

Hart, O., A. Shleifer, and R. Vishny. 1997. "The Proper Scope of Government: Theory and an Application to Prisons," *Quarterly Journal of Economics* (November 1997): 1127-1161.

Hickson, G.B., Altemeier, W.A., and Perrin, J.M., 1987, Physician Reimbursement by Salary or Fee-For-Service: Effect on a Physician's Practice Behavior in a Randomized Prospective Study," *Pediatrics* 80: 744-750.

Hillman, A., M. Pauly, and J. Kerstein, 1989, How do financial incentives affect physicians' clinical decisions and the financial performance of Health Maintenance Organizations? *New England Journal of Medicine* 321: 86-92.

Iglehart, John K. 1997. "Changing with the Times: The View of [HCFA Administrator] Bruce C. Vladeck" *Health Affairs* Vol. 16, No. 3 (May/June 1997): 58-71.

Keeler, E.B., L. Rubenstein, K. Kahn, D. Draper, E. Harrison, M. McGinty, W. Rogers, and R. Brook, 1992, Hospital Characteristics and Quality of Care, *Journal of the American Medical Association* 268: 1709-1714.

Keenan, P., M. Beeuwkes Buntin, T. McGuire, and J. Newhouse, 2000, The prevalence of risk adjustment in health plan purchasing, forthcoming in *Inquiry*.

Kornai, János, 1980, *Economics of Shortage*, Amsterdam: North Holland.

Kornai, János, 1986, The Softness of the Budget Constraint, *Kyklos* 39: 3–30.

Kornai, János, 1992, *The Socialist System. The Political Economy of Communism*. Princeton University Press and Oxford University Press.

Kornai, János, 1998, Legal obligation, non-compliance and soft budget constraint, in Newman, Peter (ed.), *New Palgrave Dictionary of Economics and the Law*, New York: Macmillan, pp. 533–9.

Kornai, János, 2000, Ten Years After "The Road to a Free Economy". The Author's Self-Evaluation. Paper presented at the Annual Bank Conference on Development Economics, April 2000. Washington D.C.: The World Bank.

Kornai, János and McHale, John 1999, Income, Technology or Demographics? An Accounting for Trends in International Health Spending, Manuscript.

Kornai, János and McHale, John in print, Is post-communist health spending unusual? A comparison with established market economies, forthcoming in *Economics of Transition*.

Kornai, János and Karen Eggleston, 2000, *Welfare Choice and Solidarity in Transition: Reform of the Health Sector in Eastern Europe*, forthcoming from Cambridge University Press.

Newhouse, Joseph P. and the Insurance Experiment Group 1993. *Free for All? Lessons from the RAND Health Insurance Experiment*. Cambridge, MA: Harvard University Press.

Norton, E., and D. Staiger. 1994. "How Hospital Ownership Affects Access to Care for the Uninsured," *RAND Journal of Economics*, Vol. 25, No. 1 (Spring 1994): 171-185.

OECD 1999, *OECD Health Data 99: A Comparative Analysis of Twenty Nine Countries*, Paris.

Pauly, Mark V. 1987. "Nonprofit Firms in Medical Markets," *AEA Papers and Proceedings* Vol. 77, No. 2 (May 1987): 257-262.

Preker, A., and R. Feacham, 1995, "Market Mechanisms and the Health Sector in Central and Eastern Europe," World Bank Technical Paper Number 293.

Rhoades J, Potter DEB, and N. Krauss, 1998, Nursing Homes--Structure and Selected Characteristics, 1996. Rockville (MD): Agency for Health Care Policy and Research. MEPS Research Findings No. 4 AHCPR Pub. No. 98-0006.

Rhoades J, and N. Krauss, 1999, Nursing Home Trends, 1987 and 1996. Rockville (MD): Agency for Health Care Policy and Research; 1999. MEPS Chartbook No. 3 AHCPR Pub. No. 99-0032.

Rose-Ackerman, Susan. 1996. "Altruism, Nonprofits, and Economic Theory," *Journal of Economic Literature* Vol. XXXIV, No. 2 (June 1996): 701-728.

Scott, Anthony, 1999, Economics of General Practice, forthcoming in Culyer and Newhouse (eds).

Selden, T. M. 1990. "A Model of Capitation," *Journal of Health Economics* 9 (1990): 397-409.

Shactman, David, and Stuart H. Altman, 1998, The impact of hospital conversions on the healthcare safety net, chapter ten in *The Future U.S. Healthcare System: Who Will Care for the Poor and Uninsured?* Stuart Altman, Uwe Reinhardt, and Alexandra Shields, eds. (Chicago: Health Administration Press): 189-206.

Shleifer, A., 1998, "State vs. Private Ownership," *Journal of Economic Perspectives* 12 (4): 133-150.

Shleifer, A., and R.W. Vishny, 1994, "Politicians and Firms," *Quarterly Journal of Economics* (November 1994): 995-1025.

Sintonen, H., and I. Linnosmaa, 1998, Economics of Dental Services, forthcoming in Culyer and Newhouse (eds.).

Sloan, Frank A., 1999, Not-for-profit ownership and hospital behavior, forthcoming in Anthony J. Culyer and Joseph P. Newhouse (eds). *Handbook of Health Economics*.

Tirole, Jean. 1994. "The Internal Organization of Government," *Oxford Economic Papers* 46: 1-29.

van de Ven, Wynand P.M.M. and Randall P. Ellis, 1999, Risk adjustment in competitive health plan markets, forthcoming in Culyer and Newhouse (eds.).

van de Ven, Wynand P.M.M., van Vliet, Rene C.J.A., van Barneveld, Erik M. and Lamers, Leida M. 1994, Risk-adjusted capitation: Recent experiences in the Netherlands, *Health Affairs* 13: 120–136.

Vickers, J., and G. Yarrow. 1988. *Privatization: An Economic Analysis*. Cambridge, MA: MIT Press.

_____. 1991. "Economic Perspectives on Privatization," *Journal of Economic Perspectives* 5: 111-132.