Very Preliminary

Ownership, Efficiency and The Market Value of Hospitals

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Abstract:

Do nonprofit hospitals sell at a discount compared to for-profit hospitals? This question stems from public concerns about the underpricing of nonprofits, and raises important questions about the nature of nonprofit firms, their objectives, and their managerial efficiency. We address this question using a database of hospital sales prices and find that, contrary to the prevailing wisdom, nonprofits are not inefficient: they pay no more for hospitals than for-profits pay, and sell to for-profits for no less than for-profits sell for. Nonprofits do, however, behave differently than for-profits: they sell to other nonprofits at a discount. Our findings are thus consistent with a theory of nonprofits in which nonprofits are efficient, consumer-organized firms.

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I. Introduction

In 1991, investors offered $108 million to buy Health Net, a nonprofit California health maintenance organization. As the deal neared approval, consumer groups protested the low price, causing a bidding war. The final deal: $300 million for only 20% of the company; a total market value of $1.5 billion. Such stories, like this one related by Goddeeris and Weisbrod (1999), raise concerns that nonprofit hospitals sell at too low a price. For instance, Sloan et al (2000) study several case studies in "Hospital Conversions: Is the Purchase Price Too Low?" While Sloan et al do not find evidence that for-profits underpay for nonprofits, conversions continue to worry policy analysts and economists.

Concerns about nonprofit conversions are also supported by theory. For example, Sloan et al suggest that inefficient markets for expertise and for corporate control could result in "too low" nonprofit sales prices. Without competing buyers a low bid might be the only bid. A nonprofit hospital, lacking the expertise to distinguish bad offers from good offers, would accept a low bid. In Sloan et al's words, "Sellers—the communities in the case of public and NFP hospitals—may not be sufficiently empowered or knowledgeable to act in their own self-interests. One reason is that the sellers may not have the requisite expertise" (p. 14).

Managerial inefficiencies associated with nonprofits are also examined in an extensive theoretical literature. However, in a competitive market, managerially inefficient nonprofit hospitals would sell at a premium to efficient hospitals. An efficient for-profit buyer would expect to replace inefficient nonprofit management with efficient for-profit management, and therefore would be willing to pay more for a nonprofit than for a for-profit with the same risk-adjusted cash flows or expected profit. Here too, two conditions must hold for for-profits to pay a premium for nonprofits: the market must be competitive, and nonprofits must be managerially inefficient.

While the literature on nonprofit inefficiency is broad, new research on nonprofit industries unrelated to health care (Kuan, 2001a, b) challenges the notion that nonprofits lack owners or have inefficient objective functions. Rather, nonprofits form when consumers organize production for their own consumption. Thus, nonprofit firms have owners with efficient utility functions, and would not overpay for a hospital any more than a for-profit, cost-minimizing firm would. On the other hand, a utility maximizer and a profit maximizer might still differ. For example, Sloan (2001) finds that the rate of pneumonia complications increased when hospitals converted from nonprofit to for-profit. Thus, for-profit managers might generate higher profits (albeit at the expense of quality) than nonprofit managers--but any clearer prediction about the sales price of nonprofits selling to for-profits is impossible without a more specific theoretical model of nonprofit hospitals.

Three predictions are generated by three competing theories about market and firm efficiency. If markets are inefficient and nonprofits lack expertise, nonprofits will sell at "too low" a price. If markets are efficient but nonprofits are inefficient, nonprofits will

sell at a premium. If markets and nonprofits are efficient, nonprofit buyers will behave like efficient for-profit buyers. Using hospital sales prices, we attempt to address the many questions raised above. Are nonprofits selling at "too low" a price? Do for-profits pay a premium for nonprofits, suggesting the possibility that nonprofits either are less efficient or pursue higher quality of care? Are nonprofits efficient firms that behave like for-profit firms?

The answers are much subtler than our predictions suggest. We find that for-profits do not underpay for nonprofits, and nonprofits do not overpay for for-profits, suggesting that markets and nonprofits are efficient. But we also provide some evidence (based on small sample sizes) that nonprofits do sell for less than for-profits—when selling to other nonprofits. The discount, the difference between the price of a nonprofit to a for-profit and the price to another nonprofit, might be a measure of a nonprofit's "mission".

II. Nonprofit Inefficiency: Theory and Evidence

A. Theoretical Studies

The many sources of nonprofit inefficiency have been described in a diverse theoretical literature, much of which has focused on the non-profit dominated health care industry. The first category of inefficiencies concerns ownership of nonprofits. Whereas for-profit owners maximize returns on their investments, nonprofits either lack owners altogether (Hansmann, 1998, Becker and Sloan, 1983), or have diffuse owners, i.e., the community (Sloan et al, 2000). Pauly and Redisch (1973) argue that physicians own hospitals; this leads to a different deviation from efficient profit-maximization.

The second category relates to the objectives of nonprofit firms. While for-profits have an efficient profit-maximizing objective function, nonprofits are said to have inefficient objective functions. For example, tax breaks and philanthropy are thought to weaken managerial incentives (Newhouse, 1970, Lakdawalla and Philipson, 1998). Or, nonprofits maximize something other than profits, such as quantity (Steinberg, 1986), quality (Smith, Clement, and Wheeler, 1995) or both (Newhouse, 1970). Finally, one of the most popular ideas about nonprofit hospitals is that they exist to serve the poor rather than shareholders (Frank and Salkever, 1991; Norton and Staiger, 1994; Thorpe and Phelps, 1991).

B. Empirical Studies

Numerous empirical studies have sought evidence of nonprofit managerial inefficiency. Tests of efficiency have examined costs: Are nonprofits inefficient and therefore pay higher operating costs than for-profits? Thus empirical studies compare nonprofit inputs and outputs with for-profit inputs and outputs. On the whole, the results have had mixed mainly because the quality of inputs and outputs is unobserved. "To state conclusively that for-profit hospitals are more efficient, it is necessary to hold…input prices and scale, constant. Even if one could successfully do this, it would be difficult to distinguish whether cost differentials were due to slack or quality" (Sloan, 2000, p. 1155).

In an Institute of Medicine (1986) study using accounting measures of cost per case, for-profits were found to have the same or slightly higher cost. In paired comparisons, in which pairs of comparable nonprofit and for-profit hospitals are studied, for-profits are found to be more costly (Pattison and Katz, 1983), or less costly (Sloan and Vraciu, 1983). Yet another paired comparison (Herzlinger and Krasker, 1987) finds no difference in cost between nonprofit and for-profit. Becker and Sloan (1985) study a larger number of hospitals and control for case mix and teaching status. They find that free-standing (not part of a chain) for-profits had a higher cost-per-day than free-standing nonprofits but had a lower cost per admission, and chain for-profits had a higher cost per admission than free-standing nonprofits.

Even attempts to account for quality by looking at outcomes, such as the Sloan (2001) study mentioned above, fail to account for qualitative differences among patients: the sickest patients often go to the best hospitals. So even if outcomes appear to be worse in one hospital than another, it can be difficult to distinguish between the quality of care and a systematic difference in the sickness of the patients.

C. Hypotheses

We propose evaluating nonprofit efficiency by examining how nonprofits and for-profits behave in firm-level, market transactions. The sales prices of hospitals will reveal several things. First, is the market for hospitals efficient? Second, in the case that markets are efficient, are nonprofits inefficient, either because they are operating inside the production possibilities frontier (PPF) or because they are on the PPF but at some non-profit-maximizing, perhaps higher quality producing, point? And finally, if nonprofits are inefficient, in which of these two ways are they inefficient? Our empirical study is guided by the predictions of our three theoretical approaches to nonprofits, above, and pays particular attention to interactions between nonprofits and for-profits.

First, Sloan et al's question, "Is the purchase price too low?" specifically relates to hospital *conversions*, i.e., nonprofit hospital sales to for-profit buyers. The focus on conversions reflects public concerns that also appear in the health care trade press: "How much the facility sells for is becoming the key issue in many communities where tax-exempt hospitals have been purchased by investor-owned companies," (Lutz, 1996). The concern is that, if markets are not competitive, nonprofit hospitals will receive only a few, low bids, which they will fail to reject because of lack of expertise. In an inefficient market, nonprofits might also pay "too much" for a for-profit. Using a database of hospital sales prices, we compare the sales prices of nonprofits with the sales prices of for-profits. Do for-profits pay less for nonprofits than for for-profits with the same risk-adjusted cash flows? Do nonprofits pay more than for-profits pay for for-profit hospitals? In short, are markets competitive?

Our second theory about nonprofit inefficiency would result in a different pricing outcome. If markets are efficient, i.e., there are competing bidders for each hospital and expertise is available to nonprofits, then for-profits will pay more for a managerially

inefficient nonprofit than for an efficient for-profit with the same risk-adjusted cash flows. For-profit buyers will know that a target nonprofit hospital is managed inefficiently and will expect to later install efficient managers. The difference between the value of the firm under inefficient management and the value of the firm under efficient management is the premium that a for-profit buyer is willing to pay for a nonprofit hospital; competing bidders will drive the price up to that premium price. Unfortunately, the premium itself does not tell us whether nonprofit management is slack (i.e., operating inside the PPF) or whether efficient nonprofits operate at a higher quality levels (e.g., very sick patients and high quality care). For this, we note that inefficient nonprofit buyers would pay more than for-profit buyers would pay.

Finally, our third theory predicts that nonprofit buyers act like for-profits buyers. Here, nonprofits are consumer-owned firms that maximize an efficient utility function. The utility function generally takes the form of utility from consumption less the cost of production, much as a profit function is revenues (from consumption by consumers) less the cost of production. When a nonprofit buys a hospital, it will not pay more than the hospital is worth; doing so would directly reduce the owners' utility, just as for-profit overpaying directly reduces the firm's profit. On the other hand, utility maximization might produce higher quality than profit-maximization, as was the case in Kuan's studies. A nonprofit hospital, like a for-profit hospital, would operate on the PPF, but at a different, non-profit-maximizing point (e.g., delivering higher-quality care). As a result, for-profit buyer could generate higher profits by installing for-profit managers, and would be willing to pay a premium. While this premium cannot be predicted without a theoretical model for hospitals, it cannot be ruled out as an empirical prediction.

In summary, predictions of the three theories above differ quite clearly, so that an analysis of sales prices will allow us to discriminate among the three.

TABLE 1

	Predicted Price Compared to For-profits Buying For-profits	
Theoretical Approach	For-profit Buying Nonprofit	Nonprofit Buying For-profit
D. Inefficient markets	<	>
E. Inefficient nonprofit ownership and objectives	>	>
F. Efficient consumer ownership of nonprofits	≥	=

III. Data

Our data set comprises financial information and sales prices on approximately 100 hospital sales transactions over the period 1990 – 1999. We obtained these proprietary data from a hospital industry investment bank, which compiled the data for its own internal use. This data set, which covers a ten-year time period and nation-wide transactions, makes possible a more extensive and systematic comparison of pricing than the case studies and comparative case studies currently in the literature. The following table (Table 2) lists some of the many variables we can control for in our study.

TABLE 2

Variable*	Mean	Std.Dev.	Min	Max	Geo. Mean
Sales Price	61.299	56.118	1.5	254	47
EBITDA	8.625	7.712	-1.406	28.827	6.132
EBITDA negative? (= 1)	0.0398	.195	0	1	
Assets	71.190	62.514	0	294.271	58.208
Debt	27.143	30.182	0	128.477	4.651
Beds	218.845	141.233	29	790	176.246
Admissions	7582.987	5079.891	596	22342.67	5713.892

* $ in millions

We can also distinguish religious from non-religious nonprofits -- religious hospitals might be less likely to convert. For example, Cutler and Horwitz (2000), identify the two main factors in hospital conversion from nonprofit to for-profit as a large debt load and religious board members. Conversion ostensibly improves access to capital, so heavily indebted hospitals are more likely to convert, and hospitals with boards dominated by businesspeople are more likely to convert than hospitals with religious boards. Businesspeople "believed they were ill-trained to run a major hospital" and were "more tolerant of the for-profit ownership form" (Cutler and Horwitz, 2000, p. 46).

Our data also encompass the many combinations of organizational form. Nonprofit and for-profit buyers and sellers, and government sellers are represented in the data. The following table (Table 3) shows the number of transactions in our data broken out by the organizational form of buyer and seller. By comparing the sales prices across the twelve cells in Table 3, after controlling for the many determinants of firm value in Table 2, we will be able to answer the question, "Is the purchase price too low?" At the same time, we consider the more general questions of nonprofit hospital efficiency.

TABLE 3

		Seller				
		For-profit	**Religious Nonprofit**	**Non-religious Nonprofit**	**Government**	**Total**
Buyer	**For-profit**	3	12	32	12	**59**
	Non-profit	4	9[1]	13	8	**34**
	Religious	3	4	6	4	**17**
	Non-religious	1	4	7	4	**16**
	Total	**7**	**21**	**45**	**20**	**93**

IV. Methods

The market value of a hospital, or any firm, is a function of the assets of the firm. In general,

$$V(A_1, A_2, A_3\ldots) = f(A_1, A_2, A_3\ldots) \tag{1}$$

In our case, we have the book value of all physical assets. Under constant returns to scale, the market value, V, is a multiple of the book value of the asset, A. The multiplier is known as Tobin's q.[2]

$$V = qA \tag{2}$$

We must first establish that V is linear in A, and then estimate q, which in theory should equal one, but which in practice might vary from one because of inefficiency or disequilibrium. We will examine whether profitability, capacity, utilization and organizational form of the hospital affect q.

$$q=V/A \tag{3}$$

We will also risk-adjust the market value, in our case, debt plus equity, with the commonly used debt to assets ratio. Because profits and capacity are correlated with assets, we use the ratio of profits to assets and capacity to assets. Finally, because the market value of the hospital and the accounting value of assets are always non-negative, the distribution of key variables is not symmetric. We therefore use a log model.

$$\ln V = \ln q + \ln A + \text{ratios (e.g., profit, capacity, debt)} + \text{organizational form.}$$ [3]

[1] One of the nonprofit hospitals in our sample was not identified by name, so religious affiliation could not be ascertained.

[2] For a discussion of Tobin's q and estimation methods, see Hall (1998). We use the additively separable model discussed therein.

(4)

Our competing theories about the market value of nonprofit hospitals differ in their predictions about the coefficients of organizational form dummies.

V. Models

A. Model 1: Relating market value to risk-adjusted assets

Our first model is essentially the log version of equation (2) above. We look at the relationship between the market value of a hospital and the risk-adjusted assets, controlling for year effects. We find that the assets are significantly related to market value, as we would expect, and that the coefficient of logA is close to unity. See Table 4, column (1).

B. Model 2 and Model 3: Market value and profit rate, capacity, and utilization

In Model 3 (Table 4, column 3), we consider other factors that might affect the market value of a hospital, such as profitability, capacity, and utilization. To measure profitability, we use EBITDA/Assets if earnings are positive (where EBITDA is earnings before interest, taxes, depreciation, and amortization), and a dummy variable, Negative EBITDA, if earnings are negative. Our measure of capacity is beds/assets and capacity utilization is admissions/beds. Unfortunately, our data on capacity and utilization are incomplete, so including them means reducing our sample size to 87 from 93.

From Model 3, we see that of the added variables, only profit rate is significant. Our sample of money-losing hospitals numbers only four, which might be why Negative EBITDA is not significant.

Model 2 (Table 4, column 2) is the same as Model 1 but with the smaller sample of 87 used in Model 3. The coefficients for Model 1 and Model 2 are very similar, indicating that the two samples are consistent.

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[3] The transformation from (2) to (4) involves an approximation. From (2),

$$V = qA,$$

where A might be thought of as being composed of an accounting value of assets and some (additively separable) intangible asset, such as managerial efficiency related to organizational form, for example. Following Hall (1998) this would be represented as

$$V = q(A + \gamma K),$$

where the coefficient of the intangible asset is $q\gamma$. Taking the logarithms of both sides results in

$$\ln V = \ln q + \ln A + \ln (1+ \gamma K/A).$$

The last term is commonly approximated by $\gamma K/A$, even though, as Hall notes, this approximation can be inaccurate for K/A ratios above 15%.

C. Model 4 and Model 5: Market value and assets and profit rate

Because capacity and capacity utilization, for which we do not have complete data, were not significant, we omit them from subsequent specifications reported in Table 4. Model 4 (Table 4, column 4) omits non-significant variables Negative EBITDA, Beds/Assets, and Admissions/Beds and uses the smaller sample. The coefficients for Model 3 and Model 4 are similar, as we would expect. Model 5 (Table 4, column 5) is the same reduced model using the larger sample.

TABLE 10

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ln (Assets)	.9925*** (.0602)	1.0245*** (.0623)	1.1028*** (.0844)	.9871*** (.0605)	.9665*** (.0571)	.9456*** (.0632)	.9731*** (.0621)
D/A	-.6387 (.2266)	-.5940** (.2277)	-.5484** (.2197)	-.4885** (.2194)	-.4951** (.2173)	-.5410** (.2397)	-.3275 (.2635)
EBITDA/Assets			3.596*** (1.118)	2.7337*** (.9097)	2.941*** (.8655)	2.835*** (.9501)	
3-yr Avg EBITDA/Assets							3.1944*** (1.0670)
Negative EBITDA (=1)			.3469 (.4438)				
Beds/Assets			.0468 (.0316)				
Admissions/Beds			.0045 (.0057)				
F-test for joint sig of yrs	.0273	.0383	.0179	.0156	.0162	.0179	.0409
R-Squared	.7861	.7979	.8306	.8196	.8131	.8188	.8189
Sample Size	93	87	87	87	93	79	79

* p> 0.10 ** p > 0.05 *** p > 0.01
Standard errors of coefficients are in parentheses.

D. Model 6 and Model 7: Comparing average profit rate with current profit rate

In estimating market value, it is sometimes useful to use several years of historical data, perhaps if there are trends over time that are not represented in current year data. We have historical values of EBITDA for two years prior to the current year for many, but not all, of the hospitals. Model 7 (Table 4, column 7) is similar to Model 5 but uses the three-year average EBITDA/assets rather than the current year EBITDA/assets. The sample is reduced to 79 observations, however. Model 6 (Table 4, column 6) is the same as Model 5 but uses the reduced data set of 79 observations.

Historical EBITDA data provides no improvement over current year data, but reduces the data set considerably. We therefore prefer Model 5, which contains only significant variables and maximizes the number of observations in our sample.

E. Model 8 and Model 9: Tobin's q conditional on seller's organizational form

Because the coefficient of logA is close to unity, it is possible to move logA to the left hand side and estimate the model with logq as the dependent variable (equation 3, above).

We now consider the effects of organizational form on the multiplier, q. Our three competing theories suggest that we examine whether the seller's organizational form affects q. That is, do nonprofit hospitals sell for less (more) than for-profit hospitals? Model 8 (Table 5, column 1) looks at the relationship between q and different types of sellers, without controlling for risk and profitability. In particular, sellers are classified as for-profits, government hospitals, and nonprofits; nonprofits are the omitted category. The results of Model 8 suggest that for-profits sell at a higher price than nonprofits (at a premium of about 66%).[4] However, Model 9 controls for risk and profitability, and the results show no evidence that nonprofits sell at a different price than for-profits after controlling for size, profitability and risk. Thus, nonprofits do sell for less than for-profits, as many suspected, but because of higher levels of debt and lower profitability.

F. Model 10 and Model 11: Tobin's q conditional on buyer's organizational form

Our theoretical predictions also suggest that we evaluate q according to buyer type. That is, do nonprofit buyers pay more than for-profit buyers? Model 10 (Table 5, column 3) divides buyers into nonprofits and for-profits (nonprofits are the omitted category) and does not control of risk or profitability. The coefficient of "for-profit buyers" is positive and significant, indicating that for-profits pay about 60% *more* than nonprofits. Model 11 (Table 5, column 4) shows that this premium is not accounted for by profits and leverage.

This finding is puzzling because our theories predicted that nonprofits would pay at least as much as for-profits for a hospital. Why would nonprofits pay substantially less than for-profits? To answer this, we return to Table 1, which summarizes our hypotheses. Notice that the primary concern of both practitioners and researchers is the *interaction* between nonprofits and for-profits. We therefore turn to models of Tobin's q which are conditioned on buyer *and* seller.

G. Model 12: Tobin's q conditional on buyer and seller interactions

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[4] A positive coefficient indicates that the for-profit buyer type pays more than the omitted group (nonprofit buyers). Recall the estimation equation

$$\ln(q) = \text{Profit rate} + \text{Risk} + \text{Buyer FP}$$

where q = V/A. A larger q means a higher market value (or price) holding assets constant, so clearly, a positive coefficient for any right-hand-side variable means a higher price.

To interpret the coefficient more precisely, take the antilog of both sides. A coefficient of .48 would correspond to a difference in price of $e^{.48}$, or a 62% premium.

Model 12 (Table 5, column 5) categorizes transactions according to buyer and seller. The key combinations, for our hypotheses, are "nonprofits buying for-profits" and "for-profits buying nonprofits," but we include also nonprofit buyers of government and nonprofit hospitals, and for-profit buyers of for-profit and government hospitals. For-profit buyers of for-profit hospitals are the omitted category.

The coefficient of nonprofit buyers of for-profit hospitals is not significantly different from zero. That is, nonprofits do not overpay for for-profit hospitals. This result is consistent with the view that nonprofit managers, like for-profit managers, have access to expertise and have strong incentives to act efficiently.[5]

The coefficient of for-profit buyers of nonprofits is not significant. We thus have no evidence that for-profits are paying too little or that they are paying more for nonprofits than for comparable for-profits. This lack of evidence that for-profits are paying too little for nonprofits is consistent with Sloan et al's (2000) case study findings, and is not so surprising given the many competing bids for a typical hospital sale. For example, in Goddeeris and Weisbrod's (1999) case study mentioned above, "A bidding war for the HMO ensued."

Finally, the negative, but not significant, coefficient of nonprofits buying nonprofits suggests why for-profits pay more than nonprofits for hospitals. It seems possible that nonprofits get a discount when buying other nonprofits. To examine this more closely, we further categorize our transactions according to whether a nonprofit is religious or non-religious.

H. Model 13 and Model 14: Categorizing nonprofits as religious or non-religious

In Model 13 (Table 5, column 6) nonprofits are separated into religious nonprofits and non-religious nonprofits, both as buyers and as sellers. Because the sample sizes are so small for such fine categorizations, we interpret the results cautiously. Religious nonprofits appear to receive a discount from other religious nonprofits, while non-religious nonprofits get a discount from other non-religious nonprofits. Model 14 (Table 5, column 7) shows that this discount is partly explained by profits and leverage.

One explanation for this discounting by seller and buyer type is "mission". Nonprofit and religious hospitals have long been regarded as mission oriented, such that public trusts are created, when nonprofit hospitals are sold, in order to carry on serving that mission. There is also anecdotal evidence that nonprofits choose nonprofit buyers over for-profit buyers in part because of mission congruence.[6] If discounting does occur only among same-mission hospitals, the discount could be interpreted as the value of that mission.

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[5] This access to investment banking expertise might have been expected based on anecdotal evidence. Without it, nonprofits would accept bad offers; but we know from Sloan et al's case studies that several nonprofits rejected for-profit offers.

[6] For example, in 1995, nonprofit Venice Hospital in Florida was sold to nonprofit Bon Secours Health System. Venice had rejected a bid (undisclosed) from for-profit Columbia/HCA Healthcare Corporation because, according to Venice president and CEO, Jack Norman, "The board liked Bon Secours' culture, charitable mission, financial depth and management team" (Greene, 1995).

TABLE 11

Variable	(8)	(9)	(10)	(11)	(12)	(13)	(14)
EBITDA/Assets		2.762*** (.8807)		2.8813*** (.7779)	2.840*** (.8117)		2.796*** (.8567)
Debt/Assets		-.4116* (.2282)		-.5017** (.1970)	-.4409** (.2087)		-.4012* (.2218)
Seller FP (8 obs.)	.5188** (.2443)	.2729 (.2340)					
Seller Gov (20 obs.)	.2166 (.1698)	.1481 (.1648)					
Buyer NP, Seller FP (4 obs.)					.0009 (.3722)		
Buyer NP, Seller Gov (8 obs.)					-.2430 (.3361)		
Buyer NP, Seller NP (21 obs.)					-.3547 (.2677)		
Buyer FP (59 obs.)			.4745*** (.1294)	.4807*** (.1144)			
Buyer FP, Seller NP (44 obs.)					.1533 (.2594)		
Buyer FP, Seller Gov (12 obs.)					.2776 (.2537)	-.1398 (.3675)	.0973 (.3417)
Buyer FP, Seller Relig (12 obs.)						-.4026 (.3859)	-.0360 (.3629)
Buyer FP, Seller Non-Relig NP (12 obs.)						-.3140 (.3507)	-.1034 (.3240)
Buyer Relig, Seller Gov (4 obs.)						-.2952 (.4908)	-.2507 (.4474)
Buyer Relig, Seller Relig (4 obs.)						-1.0395** (.4370)	-.7676* (.4059)
Buyer Relig, Seller Non-Relig NP (6 obs.)						-.9616** (.4165)	0.5406 (.3940)
Buyer Relig, Seller FP (3 obs.)						-.3093 (.4738)	-.3868 (.4321)
Buyer Non-Relig NP, Seller Gov (4 obs.)						-.8198* (.4493)	-.6632 (.4122)
Buyer Non-Relig NP, Seller Relig (4 obs.)						-.2240 (.4460)	-.0925 (.4079)
Buyer Non-Relig NP, Seller Non-Relig NP (7obs.)						-1.049*** (.389)	-.7343** (.3645)
Buyer Non-Relig NP, Seller FP (1 obs.)						-.0413 (.6609)	.1643 (.6043)
F-test for joint sig of yrs (p-value)	.1154	.0581	.0004	.0002	.0026	.0087	.0034
R-Squared	.2647	.3882	.3275	.4876	.5046	.4310	.5412
Sample Size	93	93	93	93	93	92	92

* p> 0.10 ** p > 0.05 *** p > 0.01

Standard errors of coefficients are in parentheses.

VI. Discussion and Conclusion

A comparison of sales prices of nonprofit hospitals with sales prices of for-profit hospitals has several implications, both practical and theoretical. On the practical side, if nonprofit hospitals are being sold at a discount, as popular accounts often assert, a valuable mission could be at stake. The proceeds from nonprofit hospital sales are entrusted to a public administrator to pursue the original nonprofit hospital's mission. A low price means a short-changing of this mission. We find no evidence that nonprofits are sold for less than for-profits, especially when selling to for-profits. There is some weak statistical evidence that nonprofits sell at a discount to like-minded nonprofits that may share a social mission.

This discount could be interpreted as the value of the nonprofit's mission. If markets are competitive, as the statistical and anecdotal evidence suggests, a seller is usually confronted with a variety of buyers, nonprofit and for-profit. The nonprofit seller either chooses a low bid from a same-mission nonprofit or a higher bid from a for-profit.

From a theoretical standpoint, we argue that if nonprofits were inefficient firms, poorly managed and without clear ownership, nonprofits would sell at a higher price than for-profits with the same risk-adjusted cash flows. Nonprofits would also pay more than for-profits when buying hospitals. We find no evidence that nonprofits sell at a premium or overpay for hospitals. This suggests that nonprofits are efficient firms with strong managerial incentives and access to expertise.

The idea that markets might be competitive and that the price for nonprofit hospitals is not "too low" is probably not so surprising. Anecdotal and case study evidence already suggested that this might be so. The notion that nonprofit hospitals might actually be efficient firms will undoubtedly strike many people as hard to accept. The body of theoretical work that carefully articulates why nonprofit objective functions are weakened profit functions is large and diverse, while arguments to the contrary have only been made recently and never in a health-related industry. Yet, the empirical evidence presented here is too important to disregard. Applying a consumer-ownership approach, which predicts efficient utility-maximizing objectives, to develop a theoretical model of health care is clearly worth pursuing.

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