3 Capital Formation Techniques for Hospitals

Institutional Types, Essentiality, and Governance

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INTRODUCTION

Hospitals are capital-intensive businesses. Hospital buildings are unique structures that require large amounts of capital to construct and maintain. Inside these buildings are pieces of expensive equipment that have fairly short lives. Technological innovations continually drive demand for new and more expensive equipment and facilities. The ability to continually generate capital is the lifeblood of hospitals. In order to compete and succeed, it is imperative for hospitals to continually invest in large amounts of capital equipment and expensive facilities.

Capital investment is fueled by profit. In order to continually make the necessary capital investments, hospitals must be profitable. Hospitals unable to generate sufficient profit will fail to make important capital investments, weakening their ability to compete and survive.

Hospital managers bear important responsibility in choosing which capital investments to make. There are always more capital opportunities than capital capacity. In many cases, capital opportunities not taken by hospitals create openings for others with capital capacity to fill the vacuum. By not taking such opportunities, hospitals are weakened, and their operating risk increases.

Stewardship, like governance, is a term that aptly describes the responsibility borne by hospital managers in making capital investments. The New Testament parable of the talents describes this kind of stewardship. In this story, a merchant entrusted three managers with money to invest. One manager was given five units, another two, and a third one. At the end of the investment period, the managers given five units and two units reported a 100% return. The manager given one unit reported zero return—he was fired and his unit was given to the first manager.

This is stewardship—and hospital managers are stewards of their organizations' assets. Too often, not-for-profit hospital managers hold an erroneous view of the returns expected of them. Like the third manager in the parable, they think zero return on equity is acceptable. They understand capital investment funded by debt needs to cover the interest on the debt, but they view capital investments funded by equity as having no cost associated with the equity. From an accounting perspective, they are right. From a stewardship perspective, they are dead wrong—just like the third manager in the parable.

Here is why—as stewards, they are responsible for managing the entrusted assets. Either that they can put those assets at risk themselves, or they can put those assets in the market and let other managers put them at risk. If they choose to put them at risk themselves, they then have the mandate of creating as much value from putting them at risk as they would realize if they put them in the market for other managers to put at risk. They have the duty to realize returns that are equivalent to the returns they could realize in the market; otherwise, they should just put them in the market. They can either invest in hospital assets or work the assets themselves, or they can invest in financial market assets so others can work the assets. When they choose to invest in hospital assets, the required return is not zero. That is the return they get fired for. The required return is equivalent to market returns.

Thus, when evaluating performance of hospital management teams, the minimum acceptable performance level is return on equity that is equivalent to the return that could be realized by investing the hospital assets in the market. Moreover, when evaluating a capital investment opportunity, it is important to apply a capital charge equivalent to the hospital's weighted cost of capital—a measure that imputes an appropriate cost to the equity portion of the capital along with the stated interest rate for the debt portion of the capital structure.

STRATEGIC CONSIDERATIONS IN CAPITAL FORMATION

Risk

Capital investments create risk. Risk is the uncertainty of future events. When hospitals make capital investments, they commit to costs that affect future periods. Those costs are known and relatively fixed. What are unknown are the benefits to be realized by those capital investments. For capital

investments, risk is the certainty of future costs coupled with the uncertainty of future benefits. In some cases, while the future benefits are uncertain, there is a high degree of certainty that the benefits will exceed the costs. In these cases, risk can be very low. Risk may be better defined as the degree to which the uncertainty of unknown benefits will exceed the known and committed costs.

When capital assets are purchased, both the burdens and the benefits of ownership are transferred to the owner. The burdens are primarily the costs associated with acquisition and installation. The benefits are primarily the revenues generated by operating the capital assets. Risk of ownership is created to the degree that the benefits are uncertain.

Hospital managers need to be skilled at putting hospital assets at risk. Without clear knowledge and understanding of the benefits and the burdens, hospitals can quickly find themselves at unacceptably high levels of risk. Risk must be continually assessed and evaluated in order to successfully put hospital assets at risk. Hospitals require many varied capital investments; their capital investments represent a risk portfolio. An effective combination of risky assets can often create risk that is less than the sum of the risk of each asset.

Of course, financial managers have known this for years as a basic principle of modern portfolio theory, first introduced by Harry Markowitz, PhD, with the paper "Portfolio Selection," which appeared in the 1952 *Journal of Finance*. Thirty-eight years later, he shared a Nobel Prize with Merton Miller, PhD, and William Sharpe, PhD, for what has become a broad theory for securities asset selection. Hospital assets may be viewed in much the same way. Prior to Markowitz's work, investors focused on assessing the rewards and risks of individual securities in constructing a portfolio. Standard advice was to identify those that offered the best opportunities for gain with the least risk and then construct a portfolio from them. Following this advice, a hospital administrator might conclude that a positron emission tomography (PET) scanning machine offered good risk-reward characteristics, and pursue a strategy to compile a network of them in a given geographic area. Intuitively, this would be foolish. Markowitz formalized this intuition. Detailing the mathematics of diversity, he proposed that investors focus on selecting portfolios based on their overall risk-reward characteristics instead of merely compiling portfolios of securities or capital assets that each individually has attractive risk-reward characteristics. In a nutshell, just as investors should select portfolios and not individual securities, hospital administrators should select a wide spectrum of radiology services and not merely machines.

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Savvy hospital managers will mitigate ownership risk by constructing their portfolio of risky assets in a manner that lowers overall risk.

Capital Capacity

Capital capacity is about risk. Because capital investments have risk associated with them, capital capacity is a measurement of how much risk a hospital can bear. Capital capacity is not simple to determine. Capital investments introduce varying levels of risk, depending on the relative uncertainty of the benefits to be derived. One million dollars invested in an MRI at a hospital that has a 2-month backlog for scheduling MRIs has a much lower risk than $1 million invested in a new service like a PET scanner.

Profit margins affect capital capacity. Larger profit margins create larger capacity for uncertainty, which implies more risk and that means more capital capacity. Higher liquidity means more capital capacity. Lower debt leverage means more capital capacity. Both liquidity and leverage are balance sheet ratios. Both imply capacity to absorb uncertain outcomes; both affect capital capacity.

Determining capital capacity is more art than science because of the variability in risk presented by various capital investments and the subjectivity associated with trying to measure that uncertainty.

That having been said, it is important to build models that estimate capital capacity. Most capital capacity models ignore the variability in risk presented by capital investments. They are typically built from published rating agency financial ratio medians. These models are based

on the view that financial ratios of similar rating categories represent equivalent risks. This is a simplistic view; it suggests that credit analysts simply categorize risk on the basis of financial ratios. That is not the case. Published medians are the result of credit analysis, not the basis for credit analysis. Importantly, what is not usually published is the range or distribution around these medians.

Models that estimate risk need to differentiate among risks presented by capital investments. Capital investments with little risk should consume less capital capacity than capital investments with a lot of risk.

Cost of Capital

It is critical to understand and to measure the total cost of capital. Lack of understanding and appreciation of the total cost of capital is widespread, particularly among not-for-profit hospital executives. The capital structure includes long-term debt and equity; total capital is the sum of these two. Each of these components has cost associated with it. For the long-term debt portion, this cost is explicit—it is the interest rate plus associated costs of placement and servicing.

For the equity portion, the cost is not explicit and is widely misunderstood. In many cases, hospital capital structures include significant amounts of equity that has accumulated over many years of favorable operations. Too many executives wrongly attribute zero cost to the equity portion of their capital structure. Although it is correct that generally accepted accounting principles continue to assign a zero cost to equity, there is opportunity cost associated with equity that needs to be considered. This cost is the opportunity available to utilize that capital in alternative ways.

In general, the cost attributed to equity is the return expected by the equity markets on hospital equity. This can be observed by evaluating the equity prices of hospital companies whose equity is traded on public stock exchanges. Usually, the equity prices will imply cost of equity in the range of 10%–14%.

Almost always, the cost of equity implied by hospital equity prices traded on public stock exchanges will substantially exceed the cost of long-term debt. Thus, while many hospital executives will view the cost of equity to be substantially less than the cost of debt (i.e., to be zero) in nearly all cases, the appropriate cost of equity will be substantially greater than the cost of debt.

Hospitals need to measure their weighted average cost of capital (WACC). WACC is the cost of long-term debt multiplied by the ratio of long-term debt to total capital plus the cost of equity multiplied by the ratio of equity to total capital (where total capital is the sum of long-term debt and equity).

WACC is then used as the basis for capital charges associated with all capital investments. Capital investments should be expected to generate positive returns after applying this capital charge based on the WACC. Capital investments that do not generate returns exceeding the WACC consume enterprise value; those that generate returns exceeding WACC increase enterprise value. Hospital executives need to be rewarded for increasing enterprise value.

Sources of Capital

In general, hospitals have three sources of capital: equity from earnings, equity from donations, and long-term debt.

Earnings generate cash, and a portion of that cash is available to fund capital investments. Besides funding capital investments, cash generated from earnings is used to fund working capital. As operations grow, more working capital is required to fund the difference between the operating receivables and operating payables because days of revenue in receivables tend to be a good deal higher than days of expense in payables. Additionally, cash on hand should increase as operations grow so that days of cash remain constant or increase. Once working capital has been adequately funded, any remaining cash generated from earnings is available to invest in capital.

Most not-for-profit hospitals engage in active fundraising to generate donations. Donations are a good source of capital in certain markets. Often, fundraising initiatives are less useful than they appear due to the costs expended in the fundraising activities. It is important to ensure that all the costs incurred in fundraising activities are properly attributed.

Borrowing long-term debt has been and will continue to be an important source of capital for hospitals. Debt is particularly attractive due to the low cost associated with borrowing on a tax-exempt basis. Long-term debt, borrowed on a tax-exempt basis, is probably the lowest cost form of capital available to hospitals. Tax-exempt borrowing is fairly complex due to the tax regulations affecting it. Because of its complexity, the costs associated with these transactions are quite high, making it less practical for small borrowings.

Tax-exempt borrowing transactions require many lawyers and high-priced investment bankers. Credit rating agencies and credit enhancers are also typically involved. Accessing the tax-exempt markets requires a good bit of sophistication and expertise. Despite these requirements, this capital is highly attractive to hospitals and should be used whenever possible.

Credit Ratings

The market looks to rating agencies to develop and publish information about the degree of certainty the market should attach to promises and commitments made by a company concerning capital instruments. This information is rationalized into a credit rating. There are several companies engaged in the development and communication of credit ratings. These include Standard & Poor's, Moody's, and Fitch. Each of these is actively engaged in the analysis and publishing of credit for not-for-profit hospitals. The views of these rating agencies are very important to hospitals. They have a great deal of impact on hospitals' access to capital. Hospitals need to be actively engaged in influencing the opinion of these analysts.

Rating agencies express their opinion about hospital credits in the form of credit ratings. Table 3.1 describes the ratings published by Standard & Poor's and Moody's.

Ratings are associated with securities—usually bond issues. They are not specifically associated with hospitals. It is possible that a single hospital may have different ratings for different securities. This would be the case in the event that the different securities provide differing credit or security provisions. These may be explicit in the case of senior and subordinate securities, or they may be implicit in the structure of the security interests provided.

Ratings are subjective determinations made by credit analysts at the rating agencies. That having been said, there tend to be similarities in the financial ratios of hospitals within rating categories. The rating agencies publish the medians in each rating category for common financial ratio. Table 3.2 shows the 2007 medians published by Standard & Poor's. This table shows only the medians; importantly, the distributions around these medians are not provided. It is wrong to assume that ratings can be determined on the basis of these medians. Ratings are subjective determinations made by expert credit analysts.

Credit ratings are not permanent. Rating agencies can change them at any time, and it is not uncommon for ratings to be changed (upgrades and downgrades). In fact, rating agencies have an obligation to adjust their ratings as appropriate; they are in the business of providing information to the market. This information affects pricing decisions being made every day by the market. It needs to be as accurate and up-to-date as possible to prevent mispricings, especially the post 2008–2009 time period.

If a rating is too high, a buyer of the security could buy it at too high a price. When the rating is downgraded, the buyer would take a loss primarily created by the wrong rating. Conversely, if a rating is too low, a seller might sell at a price that is lower than it should be, realizing a loss because of the wrong rating. Thus, rating agencies endeavor to keep their ratings consistent with the credit state of the security.

Rating agencies get paid by issuers of securities when the securities are issued. Once issued, usually issuers do not make further payments to the rating agencies, especially in the case of hospitals.

TABLE 3.1
Ratings Published by Standard & Poor's and Moody's

Standard & Poor's		Moody's	
AAA	The obligor's capacity to meet its financial commitment on the obligation is extremely strong.	Aaa	Obligations are judged to be of the highest quality, with minimal credit risk.
AA	The obligor's capacity to meet its financial commitment on the obligation is very strong.	Aa	Obligations are judged to be of high quality and are subject to very low credit risk.
A	The obligor's capacity to meet its financial commitment on the obligation is strong.	A	Obligations are considered upper-medium grade and are subject to low credit risk.
BBB	Obligation exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation.	Baa	Obligations are subject to moderate credit risk. They are considered medium grade and as such may possess certain speculative characteristics.
BB	The obligor faces major ongoing uncertainties or exposure to adverse business, financial, or economic conditions, which could lead to the obligor's inadequate capacity to meet its financial commitment on the obligation.	Ba	Obligations are judged to have speculative elements and are subject to substantial credit risk.
B	The obligor currently has the capacity to meet its financial commitment on the obligation. Adverse business, financial, or economic conditions will likely impair the obligor's capacity or willingness to meet its financial commitment on the obligation.	B	Obligations are considered speculative and are subject to high credit risk.
CCC	The obligor is currently vulnerable to nonpayment and is dependent upon favorable business, financial, and economic conditions for the obligor to meet its financial commitment on the obligation. In the event of adverse business, financial, or economic conditions, the obligor is not likely to have the capacity to meet its financial commitment on the obligation.	Caa	Obligations are judged to be of poor standing and are subject to very high credit risk.
CC	The obligation is currently highly vulnerable to nonpayment.	Ca	Obligations are highly speculative and are likely in, or very near, default, with some prospect of recovery of principal and interest.
C	A bankruptcy petition has been filed or similar action has been taken, but payments on this obligation are being continued.	C	Obligations are the lowest rated class of bonds and are typically in default, with little prospect for recovery of principal or interest.
D	The obligation is in payment default.		
+, –	The ratings from "AA" to "CCC" may be modified by the addition of a plus or minus sign to show relative standing within the major rating categories.	1, 2, 3	Moody's appends numerical modifiers 1, 2, and 3 to each generic rating classification from Aa through Caa. The modifier 1 indicates that the obligation ranks in the higher end of its generic rating category, the modifier 2 indicates a midrange ranking, and the modifier 3 indicates a ranking in the lower end of that generic rating category.

TABLE 3.2
2007 Medians Published by Standard & Poor's

	AA	A	BBB	NIG[a]
Net patient revenue	713,572	262,996	102,495	115,620
Maximum debt service coverage	4.1	3.5	2.5	1.5
Operating margin	3.1%	3.5%	1.2%	–1.3%
Profit margin	4.5%	3.2%	1.9%	–0.4%
Days cash on hand	211	159	110	50
Cash to debt	155.9	103.8	71.0	33.4
Debt to total capital	32.8	37.3	44.3	65.3
Days of revenue in accounts receivable	53.8	53.8	55.3	53.5
Capital expenditures to depreciation expense	159.9	147.8	119.6	

[a] Not investment grade.

An important decision hospitals need to make is what credit rating to target. Do they want to be an AA credit? An A credit? Or a BBB credit? This decision will drive a lot of dynamics of access to credit in the capital markets.

What credit rating to target is neither straightforward nor intuitive? If you ask most hospital executives what credit rating they are targeting, the answer will be A. When you ask why, the answers become less certain. In general, A and sometimes AA are considered the gold standards that hospitals should achieve. A feels right.

What many hospitals do not consider is the implication of their credit rating. What difference does it make to a hospital if they have an A rating versus a BBB rating? In general, the higher the credit rating, the more attractive are the debt instruments sold by hospitals. The higher the credit rating, the more certainty there is that the hospital will perform according to the promises made in the debt indenture. Accordingly, the interest will be lower because there is considered less risk. Credit risk is low.

Higher credit ratings are not always better. In general, so long as hospitals have an investment-grade credit rating, the lower the rating, the greater amount of capital it can access. Higher credit ratings require stronger balance sheets. Stronger balance sheets mean greater liquidity and lower leverage. Greater liquidity means higher cash balances, leaving less cash available for capital investments.

Lower leverage means less debt, reducing the amount of debt available to fund capital investments.

Higher credit ratings throttle growth. They limit the amount of capital hospitals can access. That is not necessarily bad, but hospitals need to consider that when targeting a credit rating. If hospitals need greater access to capital, they should target lower credit ratings. Lower credit ratings are not bad.

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That is not to say lower credit ratings are better than higher credit ratings. However, neither are higher credit ratings better than lower credit ratings. What is important is how well the target credit rating matches hospital strategy. If a high credit rating results in starving a hospital's access to capital so that it loses important market opportunities, the high credit rating has probably not served the hospital well.

ANALYSIS OF HOSPITAL CREDITS

Hospital credit analysis evaluates the capacity of a hospital to perform on its commitments. In its current state, hospital credit analysis stands to improve its credibility.

Hospital credit analysis has had some spectacular failures both in overrating and in underrating. The ones that get the most attention are the overratings, like the Allegheny Health, Education and Research Foundation, whose criminal case ended in November 2002 as its former chief executive

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officer (CEO), Sherif Abdelhak, was sentenced to a prison term of up to 23 months for misusing charitable endowments to bolster the failing health care system. Abdelhak pleaded no contest to one count of misapplication of entrusted property, a second-degree misdemeanor that carried a maximum penalty of 24 months in prison.

However, underratings are prevalent too. Both overratings as well as underratings contribute to investor losses. Hospital credit analysis is about assessing uncertainty—specifically, the uncertainty associated with performing on commitments.

What are the most important factors that determine how likely it is that a hospital will perform its commitments?

Growth

Perhaps the most important factor in hospital credit analysis is growth. The dynamics of running hospitals almost always require growth. It is a rare hospital management team that can succeed without year-over-year admission growth.

Why is growth so important? Hospital pricing dynamics. Hospital prices are always under pressure. As technologies advance, populations become more affluent, and as people become older, the demand for health care increases. This upward demand requires an increasing portion of overall economic activity. That creates stress on the entire system and this stress is most manifest in pressures to limit rate increases.

Pressure to limit rate increases is coupled with expense rate increases that move up faster. The cost of labor is driven by normal supply and demand; with demand outstripping supply, prices move higher. Technology advancement creates more cost pressure; more technology investments are required and the technology costs increase more.

These factors converge on hospitals and result in prices for hospital services moving up less rapidly than the costs of labor and technology, resulting in decreasing profit margins. The solution for decreasing profit margins is to increase productivity. Increasing productivity is a lot easier when volumes are growing. It is very hard to increase productivity unless volumes are growing (i.e., managers are more capable of finding ways to limit the growth in personnel than they are in cutting personnel). With growing volumes, productivity increases when volume growth exceeds personnel growth. With stable or declining volumes, productivity can be only increased when personnel are reduced, and it is very hard to make that happen.

One of the most important factors in evaluating hospital credit is certainty of volume growth. Volume growth is largely driven by market dynamics. The most important market dynamic is population growth. Is there reason to believe that the population in the hospital's primary market will grow in the future? Census reports tell if population has grown in the past. Census forecasts suggest what might happen in the future. It is important to analyze the dynamics in a market that could affect population changes. Economic conditions, retirement patterns, and type of population can provide insights into future population trends.

Beyond population growth, market capture dynamics need analysis. Market capture is about how well a hospital captures its share of market growth. Ideally, hospitals will capture their share of market growth if market share remains reasonably constant or grows slightly. Balance among the market participants affects shared market growth. Balance is about sustainability of hospital operations with existing market positions. If there are hospitals in the market that are not sustainable with their current market positions, market instability can be expected in the future. Because most hospitals have many community stakeholders, hospitals do not die very often. Thus, it is hard to assume that a hospital that lacks sufficient market position to sustain itself will die or shut down. More likely, that hospital with its stakeholders will take drastic actions to attain the market position needed to sustain itself.

A balanced market environment is more important than absolute market position. Hospitals with large market shares in unbalanced or unstable markets are less certain to grow sufficiently

than hospitals with small market shares in balanced, stable markets. This is somewhat counter to accepted wisdom among hospital credit analysts. Large market shares tend to be viewed by hospital credit analysts in a highly positive manner. Market balance does not typically get as much weight as absolute market share.

The important market dynamics that most affect growth are market population growth combined with balance among hospitals in the market. Hospital volume growth is more likely in these kinds of markets. That is not to say that absolute market share is irrelevant. Clearly, higher absolute market share is more attractive than lower absolute market share, but it is not as important as balance among hospitals in the market. The ideal hospital, then, is one that is positioned in a growing market that has balance among the hospitals in the market, and then, the higher the absolute market share, the better.

Market Position

In addition to market balance, market position is one of the most important factors in credit analysis. Historically, the measure most often used is market share—admissions to the hospital as a percentage of all admissions within the primary service area. Primary service area is commonly defined by the service areas [typically zone improvement plan (ZIP) codes] that account for 80% of the total hospital admissions.

Please confirm expansion for ZIP.

Although a critical measure, the typical market share calculation can miss important dynamics of market position that need to be considered. Hospitals with similar market shares can have very different market positions. The typical methods used can create inconsistent results when the relative concentrations of admissions among zip codes vary significantly.

Market dominance is a metric that expresses important information about market position. Market dominance is a measurement of the percentage of admissions drawn from service areas in which the hospital dominates. Admissions for the hospital and each competing hospital are determined for each service area. If the hospital admissions exceed the admissions from each of the competing hospitals by 1.5 times, the hospital dominates the service area and the admissions from that service area are included in the count of dominant admissions.

Tables 3.3 and 3.4 demonstrate how market share and market dominance describe market position. Both tables describe the same market—there is the same number of admissions in each ZIP code. Both tables describe the same hospital admissions—there is the same number of admissions for each hospital. The total columns and the total rows are the same in both tables. The

TABLE 3.3
Market Share and Market Dominance—Hospital A Dominates in One ZIP Code

Hospital	ZIP Code 1	ZIP Code 2	ZIP Code 3	ZIP Code 4	ZIP Code 5	ZIP Code 6	ZIP Code 7	ZIP Code 8	ZIP Code 9	Total
A	435	324	87	425	243	546	435	476	645	3643
B	123	300	54	523	225	435	324	546	765	3295
C	201	124	65	321	354	678	345	254	546	2888
D	198	90	32	123	211	232	123	65	23	1097
E	90	125	14	231	134	212	111	34	54	1005
F	85	231	88	50	154	134	143	78	76	1048
Total	1132	1194	340	1700	1321	2237	1481	1462	2109	12,976
Market share										28.1%
Market dominance										11.9%

TABLE 3.4
Market Share and Market Dominance—Hospital A Dominates in Four ZIP Codes

Hospital	ZIP Code 1	ZIP Code 2	ZIP Code 3	ZIP Code 4	ZIP Code 5	ZIP Code 6	ZIP Code 7	ZIP Code 8	ZIP Code 9	Total
A	335	474	37	752	93	896	135	51	870	3643
B	273	200	54	323	375	385	433	846	406	3295
C	151	99	65	321	354	428	654	404	421	2888
D	98	90	32	23	211	232	123	65	223	1097
E	90	125	14	231	134	162	111	34	104	1005
F	185	206	138	50	154	134	34	62	85	1048
Total	1132	1194	340	1700	1321	2237	1481	1462	2109	12976
Market share										28.1%
Market dominance										82.1%

difference between these tables is the distribution of admissions among the hospitals. Market share for Hospital A is 28.1% in both tables because the hospitals have the same number of admissions in each table. Market dominance for Hospital A is 11.9% in Table 3.3 and 82.1% in Table 3.4. In Table 3.3, Hospital A only dominates in one ZIP code, while it dominates four ZIP codes in Table 3.4. Clearly, the market position for Hospital A in Table 3.4 is stronger than it is in Table 3.3.

Market share is an important measure of market position. So is market dominance. Both should be used in making valid credit analysis. In most cases, market dominance is more important than market share. Attractiveness ranking for possible combinations of market share and market dominance is shown in the following.

Rank	Market Share	Market Dominance
1.	Strong	Strong
2.	Weak	Strong
3.	Strong	Weak
4.	Weak	Weak

Table 3.5 presents these market metrics for a randomly selected group of hospitals in California based on 2008 data.

Market Definitions

The definition of hospital "market" is often nebulous, with some entities defined by terms as ambiguous as "acute care inpatient hospitals," "specialty hospitals," or "anchor hospitals." This ambiguity occurs because health care is increasingly provided on an outpatient basis, and general inpatient hospitals face competition from a range of allied health care providers for the medical services they deliver.

For example, none other than the U.S. Supreme Court has explained that the determination of relevant hospital product and geographic markets is "a necessary predicate" to deciding whether a hospital merger contravenes the Clayton Act (antitrust). *United States v. Marine Ban Corporation Inc.*, 418 U.S. 602, 618 (1974) (citing *United States v. E.I. Du Pont De Nemours & Co.*, 353 U.S. 586, 593 (1957); *Brown Shoe Co. v. United States*, 370 U.S. 294, 324 (1962).

TABLE 3.5
Market Metrics in Randomly Selected California Hospitals

	Market Share (%)	Market Dominance (%)
Alameda County Medical Centers	13.3	0.0
Alameda Hospital	17.4	76.6
Arrowhead Regional Medical Center	10.9	0.0
California Hospital Medical Center–Los Angeles	8.2	19.0
Cedars Sinai Medical Center	9.5	36.5
Corona Regional Medical Centers	27.3	69.3
Eisenhower Memorial Hospital	33.5	48.1
El Camino Hospital	20.7	53.6
Enloe Hospital	47.3	59.8
Feather River Hospital	41.1	76.1
Glendale Adventist Medical Center	9.8	25.3
Glendale Memorial Hospital & Health Center	9.8	20.4
Good Samaritan Hospital–Los Angeles	2.7	3.2
Hoag Medical Center	18.5	51.7
John F. Kennedy Memorial Hospital	56.0	74.4
Loma Lina University Medical Centers	8.2	7.0
Marin General Hospital	42.7	52.9
Paradise Valley Hospital	12.5	32.4
Pomona Valley Hospital Medical Center	26.3	47.9
Queen of Angels/Hollywood Presbyterian Medical Center	9.7	42.3
Redding Medical Center	27.1	0.0
Redlands Community Hospital	16.4	46.7
Riverside County Regional Medical Center	10.0	0.0
San Joaquin General Hospital	17.1	0.0
Scripps Mercy Hospital	10.8	21.3
Selma Community Hospital	10.0	37.0
Simi Valley Medical Center	37.3	73.3
St. Helena Medical Center	7.5	34.1
Stanford Hospital	3.0	10.7
Sutter Memorial Hospital	9.5	0.0
Torrance Memorial Medical Center	23.4	29.0
University of California—Los Angeles Medical Center	1.9	0.0
University of California—San Francisco Medical Center	3.1	0.3
Ukiah Medical Center	60.7	73.0
White Memorial Medical Center	6.6	26.1

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Hospital Competitive Markets

Hospital product markets also differ in several important respects from other markets, and appropriate capital formation analysis must take these differences into account. Because only a fraction of most hospitals' business is price sensitive, a restrictive market definition may harm patients or increase capital acquisition costs, or excessively enrich institutions. Moreover, capital formation in hospital mergers typically presents a greater potential for positive efficiencies than mergers in other industries.

Research suggests that simply increasing the number of competitors does not necessarily decrease prices or raise quality and may even have the opposite effect. As Rashi Fein, the Harvard health care economist observed, "[i]n health care, the invisible hand of Adam Smith is all thumbs" (Lee and Lamm 1993).

Since then, however, most studies suggest that there is no real correlation between higher market concentration and higher costs and prices. The reason for this counterintuitive result is because price sensitivity is less important and potential efficiencies and scale economics are greater.

Moreover, many hospitals are affiliating in role-based access control (RBAC) networks by controlling which patients, medical providers, or health plans have access based on the needs of patients, payors, physicians, or insurers. User, doctor, and patient rights and services are then grouped by name, and access to medical resources is restricted to only those authorized.

For example, when an RBAC network system is used by a hospital, each individual who is allowed access to the hospital's network would have a predefined role (doctor, nurse, lab technician, administrator, patient, etc.). If someone is defined as having the role of doctor, for example, then that user can access only resources of the health care network that the role of doctor has been allowed access to (e.g., electronic medical records). If another user has access as a diabetic patient, then that user cannot access unapproved health services such as OB-GYN. Each user is assigned one or more roles, and each role is assigned one or more privileges for users in that role.

Therefore, correctly defining the relevant hospital product market is crucial to correctly analyzing hospital capital formation, growth, merger, sale, and acquisition strategies. The establishment of a consistent, predictable, and economically sound standard for market definitions is also important to state, regional, and federal public policy makers. Hence, it is useful to review the definitional elements of proper hospital product types.

Hospital Types

Acute Care Inpatient Hospital

An acute care inpatient hospital is a health care organization or "anchor hospital" in which a patient is treated for an acute (immediate and severe) episode of illness or the subsequent treatment of injuries related to an accident or trauma, or during recovery from surgery. Specialized personnel using complex and sophisticated technical equipment and materials usually render acute professional care in a hospital setting. Unlike chronic care, acute care is often necessary for only a short time. Measures of acute health care utilization are represented by three separate rates:

1. Rate of admissions per 1000 patients
2. Average length of stay per admission
3. Total days of care per 1000 patients

Psychiatric Hospital

A psychiatric hospital (behavioral health, mental hospital, or asylum) specializes in the treatment of patients with mental illness or drug-related illness or dependencies. Psychiatric wards differ only in that they are a unit of a larger hospital.

Specialty Hospital

A specialty hospital is a type of health care organization that has a limited focus to provide treatment for only certain illnesses such as cardiac care, orthopedic or plastic surgery, elder care, radiology/oncology services, neurological care, or pain management cases. These organizations are often owned by physicians who refer patients to them. In recent years, single-specialty hospitals have emerged in various locations in the United States. Instead of offering a full range of inpatient services, these hospitals focus on providing services relating to a single medical specialty or cluster of specialties.

Long-Term Care Hospital

A long-term care hospital is an entity that provides assistance and patient care for the activities of daily living (ADLs), including reminders and standby help for those with physical, mental, or emotional problems. This includes physical disability or other medical problems for 3 months or more (90 days). The criteria of five ADLs may also be used to determine the need for help with the following: meal preparation, shopping, light housework, money management, and telephoning. Other important considerations include taking medications, doing laundry, and getting around outside.

Rural Hospital

The parameters of a rural hospital are determined based on distance. A rural hospital is defined as a hospital serving a geographic area 10 or more miles from the nexus of a population center of 30,000 or more. More specifically, a rural hospital means an entity characterized by one of the following:

1. *Type A* rural hospital—small and remote, has fewer than 50 beds, and is more than 30 miles from the nearest hospital
2. *Type B* rural hospital—small and rural, has fewer than 50 beds, and is 30 miles or less from the nearest hospital
3. *Type C* rural hospital—considered rural and has 50 or more beds

Essentiality

An important component of hospital credit analysis is essentiality. Hospitals are unusual businesses that many times possess some form of essentiality to their communities. Health care is important to the economic vitality of every community. Many hospitals have served their communities for many years; it is not uncommon to find hospitals that have been continuously operating for more than 100 years in the same community.

Most hospitals are not-for-profit. In not-for-profit hospitals, no private party actually "owns" the hospital; control is vested in various boards, but no one explicitly owns a not-for-profit hospital. In a broad sense, communities own not-for-profit hospitals. They are considered "charities" with a "charitable purpose." Though a not-for-profit hospital may not have owners, it has many "stakeholders," parties that have vested interests in the continuing success of the hospital.

Many hospitals have broad and vast webs of stakeholders. Stakeholders are why hospitals rarely close or are shut down. Too many stakeholders have interests in the continuing successful operation of hospitals.

Hospital stakeholder relationships need to be considered in the analysis of essentiality. How strong are these relations? How many are there? How important is the continuing success of this hospital to these stakeholders?

Another dimension of the essentiality analysis is service analysis. How significant are the hospital's services? If the hospital shuts down, what population segments would suffer? How significant is the population that would suffer? How much would they suffer?

Analysis of hospital's stakeholders and services should provide a credible view of the degree of essentiality associated with a hospital. Higher degrees of essentiality suggest higher likelihoods that hospitals, one way or another, will meet their commitments, particularly their payment commitments.

Financial Ratio Analysis

Financial ratio analysis is routinely used as a part of credit analysis. The ratios focused on fall into two categories: performance and protection. Performance ratios express how well the hospital is

operating. Profit margins and returns dominate the performance analysis. Protection ratios express the capacity to protect from unexpected downturns in operations. Protection ratios include liquidity ratios, coverage ratios, and leverage ratios.

What is more important, performance or protection? It depends on your outlook. If your outlook is long term, performance is more important. If it is shorter term, then protection dominates. It is like a car—performance is the engine, protection is the seat belt. If you are just driving around the block, you're less concerned about performance, but more concerned about how well the seat belt works. If you are taking a long trip, the performance of the engine is your top concern.

Credit analysts have different objectives. Bond insurers are really concerned about the hospital making its payments over a very long term, many times as long as 30 years. Rating agencies are more concerned about the shorter term; their job is to inform the market of relevant information that affects current trading. It is not surprising, then, to find that rating agency ratings tend to be more correlated with protection ratios than with performance metrics. Bond insurers, on the other hand, should have more interest in performance than protection, particularly at the time of underwriting.

Several performance metrics are typically analyzed. The most common are operating margin and profit margin. Operating margin is operating income divided by operating revenue; profit margin is net income divided by operating revenue. Neither of these is very good in comparing one hospital to another because they both incorporate capital structures that vary widely among hospitals. Some hospitals have very little debt in their capital structures, whereas other hospitals carry large amounts of debt. Because interest expense associated with this debt is included in both operating income and net income, these ratios are distorted by differences in capital structures making operating comparisons.

Another measure that is sometimes used is EBDIT margin—earnings before depreciation, interest, and tax divided by operating revenue. This measure is an improvement over both operating margin and profit margin, but it too is flawed. It excludes depreciation. Depreciation is the consumption of capital assets, and it is hard to assume that an effective performance measure should not carry the burden of capital asset consumption.

A better metric is operations before interest margin—operating income plus interest divided by operating revenue. This appropriately minimizes the distortion caused by various capital structures while properly including charges for consumption of capital assets. It should be reasonably comparable among hospitals and represents a good basis to evaluate performance.

Another performance measure that deserves attention in credit analysis is return on total capital—profit plus interest expense divided by debt plus equity. The common metric analyzed is return on equity (profit divided by equity), but it can be widely distorted by differences in capital structure. Return on total capital consistently measures across hospitals how well capital put at risk is performing.

Debt service coverage is a very important measure. It expresses the balance (or imbalance) between the size of debt and the size of the operation by relating net income available to cover debt service to debt service. It is calculated by dividing debt service (principal payments plus interest payments) by net income available for debt service (net income plus interest expense plus depreciation expense).

There are several permutations of this measure:

1. Historical (immediately prior year debt service with immediately prior year income available for debt service)
2. Maximum (highest debt service for any future year with immediately prior year income available for debt service)
3. Pro forma (highest debt service for any future year including debt service on proposed issue with immediately prior year income available for debt service)
4. Pro forma projected (highest debt service for any future year including debt service on proposed issue with projected income available for debt service)

Of these, pro forma is the best. It ensures that any new debt can be adequately covered by the existing business without the support of the new business the new debt will presumably create.

Liquidity is typically measured in terms of days of expenses covered by cash on hand. It is computed by dividing cash on hand by cash expense per day (typically computed by dividing operating expense minus depreciation by number of calendar days). It expresses how long the operation could be funded in the event that cash collections ceased—in no way a likely scenario, but a good way to compare relative amounts of cash among hospitals. It is a sound expression of the capacity of the balance sheet to absorb operating blips and downturns—the capacity to deal with future uncertain events.

Leverage is typically expressed by the debt to total capital ratio (long-term debt including current portion divided by long-term debt including current portion plus equity). Leverage is widely viewed as a measure of risk, but it is not a very good indicator of risk. Although higher leverage does indicate more risk than lower leverage for a given hospital, it does not necessarily mean higher risk when comparing among hospitals. It is one of the poorer ways to evaluate risk among different hospitals.

Governance

Larry Scanlon, executive director of The Hunter Group, says, "I've never seen a distressed organization that could not be traced back to ineffective governance." Credit analysis needs to pay attention to governance issues. Governance makes a difference in long-term credit judgments.

Issues important in governance credit analysis include how the board functions, terms of board members, how board members are selected, and how senior management is chosen. These all have important impacts on the future course of the hospital.

Many times, the most important decision affecting a hospital's future is the choice of the CEO. Credit analysts need to know how the next CEO will be chosen and that the board members are qualified to be actively engaged in governing.

All these governance matters can be spelled out in corporate bylaws and articles of incorporation. Moreover, in the case of bond insurers, covenants can be reasonably given to ensure that these important matters are not changed.

Critical credit issues in governance are

Effective management oversight. Many hospital boards are not effective. Not-for-profit hospital boards tend be composed of upstanding community people who have little expertise in health care or the management of hospitals. Too often this results in a complacent board that readily accepts what management tells them. The board trusts management's judgment and follows management without a rigorous, informed debate. This works fine as long as management does the right thing. It is a disaster when management makes poor judgments.

Outside expert advisor. Given that many community hospital board members are not health care experts, alternative expert voices, independent of management, are needed. Boards should engage independent expert advisors to routinely review hospital data and provide counsel and analysis to the board.

Qualified board members. Qualifications for board members need to be credible and explicit. Requirements for continuing education need to be explicit. Members lacking health care experience need introductory education.

Board membership turnover. Turnover of board membership is important. Terms need to be staggered and the number of terms needs to be limited. Adequate turnover avoids perpetuation of unhealthy power relationships between boards and management.

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Succession planning. Perhaps the most critical decisions boards make are appointments of senior executives particularly the CEO and chief financial officer (CFO). For these appointments, boards should engage nationally recognized search firms to lead an appropriate process and make recommendations to the board. Appointments should not be made without the positive recommendation of the nationally recognized search firm.

Capital Investment

Capital investments affect hospitals' futures. How much capital is invested makes a difference and where it is invested makes a difference. Capital investments shape the future. Credit analysts are driven by polar-opposite concerns. On the one hand, they are concerned about adequacy of capital investment—Is enough capital being invested to ensure that market opportunities are not lost? On the other hand, they are concerned that higher capital means higher risk in the form of committed cost versus uncertain returns. Balancing these two concerns requires good business judgment.

Beyond the amount of capital invested, credit analysis needs to address how capital projects are chosen. Every hospital deals with the problem of capital investment opportunities exceeding capital capacity, many times by wide margins. How they choose which projects to fund and which to pass up is important.

Given the trade-offs faced in choosing capital investments, rejuvenation and replacement projects tend to get passed up more than they should. Usually, these do not create new revenue; they just preserve existing revenue. Preservation of existing revenue is important, and it must be adequately funded. In most cases, the amount invested in rejuvenation and replacement projects should bear some relationship to depreciation expense, because depreciation expense represents capital asset consumption during the period.

The remaining capital, after rejuvenation and replacement is funded, should be directed toward revenue growth. In picking these projects, strategy is more important than return. Every hospital needs a well-understood growth strategy. Most of them will be heavily dependent on capital investment, so the growth strategy should be evident by what capital investments are chosen. Credit analysts should explore how congruent the capital investments being made are to this strategy.

CAPITAL FORMATION PROCESS

Managing Credit Relationships

Every hospital needs to manage their credit relationships. Rating agencies and credit providers need to be targeted by hospitals for development and maintenance of credit relationships. Credit relationships are an ongoing process. They need to be fed and nurtured. Hospitals should make sure that they cultivate their relationships with credit analysts even during times when they are not seeking credit.

Too often, hospitals work on credit relationships only when they need capital financing. That is the wrong time. Relationships need to be in place before they need financing. Credit relationships should not be transaction-based, but instead formed and nurtured on an ongoing basis, resulting in better, more optimal transaction results.

Credit relationships are fed and nurtured through communication. Communication strategies need to be multifaceted—quarterly reporting, annual face-to-face reviews, and ad hoc telephone conversations. Reporting needs to go beyond just what is required by the covenants. Covenanted reporting should be viewed as the minimum.

Perhaps the most important component of nurturing credit relationships is the annual meeting. Annual meetings should be set up and conducted at the offices of the credit analysts. The meeting should review the past year and describe the plans for the future. An important component of the annual review is the financial forecast. Credibility is established by presenting a 3- to 5-year financial forecast each year. Variances from the forecast should be discussed and whether they are favorable or unfavorable should be explained. Candor about the good and especially the bad creates understanding and trust, which are critical components in credibility.

Financial forecasts are inherently uncertain. The future is unknown, and in most cases, unknowable. A financial forecast is not so much a prediction of the future, but a description of a management team's view of the future. That view encompasses both external factors that are largely out

of the control of management, and internal factors that are controllable. The forecast describes the management's strategies of dealing with that environment. As such, the financial forecast creates the context for a very profitable discussion between management and analysts. The view of the external environment can be compared and contrasted and challenged by the analysts. It is important for them to develop a comfort level with management's view of the external environment. Given that environment, analysts can then evaluate management's strategies for successfully leading the hospital through that environment.

Presenting updated forecasts each year provides additional dimensions for useful dialogue. Changes in environmental views can be highlighted and discussed. Implications to hospital strategy can then be usefully identified and debated. Failures and successes in meeting the assumptions presented in prior forecasts highlight strengths and weaknesses of management in dealing with the uncertainties of its environment.

Tax-Exempt Debt

Tax-exempt debt has become an important means of external financing for hospitals, primarily because its cost is very attractive. Interest rates on tax-exempt financing are lower than interest rates on financing that is not tax-exempt because the interest income earned by the holders is exempt from federal income tax. In some states, it is also exempt from state income tax, and in some cities, it is also exempt from city income tax. Thus, the holders of these debt instruments (usually bonds) are willing to accept lower rates of interest.

Hospitals themselves are not capable of issuing tax-exempt debt. Only state and local governments are. A state or local government issues tax-exempt debt for hospitals and then loans the proceeds to hospitals. This is called "conduit" financing—the state or local government acts as a conduit through which hospitals can access tax-exempt debt markets. State and local governments are authorized to loan proceeds of their bond issues to hospitals through state statutes, and each state statute is different. Some states authorize any state or local government to issue bonds to loan to hospitals. Other states restrict such power to special-purpose governmental entities only. Moreover, some states restrict this power to a single governmental entity that is specially formed for the sole purpose of issuing tax-exempt bonds on behalf of hospitals.

The Internal Revenue Service (IRS) regulates the issuance of tax-exempt financing. While the IRS code nominally provides that debt instruments issued by state and local governments are exempt from federal income tax, it imposes special rules on conduit issues. Thus, tax-exempt issues whose proceeds are loaned to hospitals must comply with special IRS rules. Although very complex, these rules primarily regulate the use of proceeds, restricting the use of tax-exempt proceeds to the acquisition of property, plant components, and equipment.

Given state statutes, IRS code, and applicable security laws (both state and federal), issuing tax-exempt bonds is legally complex. Many lawyers get paid handsome fees every time tax-exempt debt is issued. The quarterback of the legal team is the bond counsel who represents the interests of the bondholders; the bond counsel issues the critical tax opinion that investors rely upon to claim tax exemption on the interest from these instruments. Everything revolves around getting this opinion.

Given its critical nature, only highly qualified lawyers are accepted by the market to provide this opinion. Underwriter's counsel represents the interests of the investment bankers; their primary concern is compliance with security laws. Issuer's counsel represents the interests of the state or local government, and hospital counsel represents the interests of the hospital; both have relatively minor roles. In the event credit enhancement is involved, credit enhancement counsel represents their interests and has significant influence on the process.

Another unique party to most tax-exempt bond issues is the bond trustee. The bond trustee is usually a bank that performs a fiduciary duty on behalf of the bond holders throughout the life of the bonds. The face of the faceless bond holders, they act on their behalf. Moreover, they, too, are represented by counsel in the bond issuance process.

State or local government typically appoints bond counsel. In many cases, they work with only a single firm. Not unusually, these relationships are quite cozy, and often result in fees being paid that are well in excess of what otherwise would be paid.

An excess of documents is involved in most tax-exempt financings. The heart of the documents is the indenture, which is the agreement between the bond trustee (on behalf of the bond holders) and the state or local government issuer. It contains the promises made to the bond holders, and it describes the work of the bond trustee. The bond trustee will only perform actions on behalf of bond holders that are explicitly set forth in the bond indenture. The bond indenture is the security given to the bond holders, describing all their recourses.

The bond indenture is typically supported by the loan agreement between the state or local government that issues the bonds and the hospital to which the proceeds are loaned. Its terms complement the terms of the bond indenture, which together form the conduit.

Bond Insurers and Credit Enhancement

Credit enhancement is commonly used when issuing tax-exempt bonds. Credit providers guarantee the payments promised by the bonds, essentially co-signing. As a party with recognized credibility in the market, the bond provider agrees to make payments on behalf of the obligor in the event the obligor fails to make payments. The effect of this is that the credit rating on the credit-enhanced instruments is higher than the underlying credit rating of the hospital obligor.

Credit enhancement is primarily provided by bond insurers and commercial banks. Bond insurers issue insurance policies that cover the payments of principal and interest over the life of the bonds, usually up to 30 years. For this policy, the bond insurer is paid an up-front premium; typically in the range of 40–300 basis points (hundredths of 1%) applied to the total principal and interest payments. Effectively, the credit rating of the insured bonds becomes the credit rating of the bond insurer, typically AAA or AA, instead of the underlying rating of the hospital obligor. The credit-enhanced bonds then are priced on the basis of the bond insurer's credit rating, resulting in lower interest rates. The difference between the interest rate based on the hospital obligor's underlying credit rating and the bond insurer's credit rating is the savings in interest payments derived by the insurance. The premium paid to the bond insurer is usually about two-thirds of the present value of this interest savings.

Commercial banks issue letters of credit to enhance hospital obligations. Letters of credit basically provide that the issuing bank will make any principal or interest payments that the hospital obligor fails to make. Usually, letters of credit are issued for 3 to 5 years with "evergreen" provisions.

Evergreen provisions provide the mechanism whereby the letter of credit can be extended for an additional year at each anniversary upon the agreement of the parties (not automatically). An important difference between bond insurance and letters of credit is the term—bond insurance covers the entire term of the bonds, whereas letters of credit cover less than the entire term (casting uncertainty on the credit enhancement provided by a letter of credit). Another important difference is the fee structure—letters of credit fees are paid on a quarterly basis, whereas bond insurance premiums are paid up-front.

Due to its short term, the letter of credit has to provide a "takeout" mechanism that is exercised in the event the letter of credit is not renewed. This takeout mechanism converts the underlying instrument into a bank loan with a short amortization—usually 5–7 years—and a "prime plus" rate of interest.

Letters of credit are most commonly used to support variable rate tax-exempt instruments. These instruments are usually auctioned once a week and a new interest set for the next week. The interest rates are extremely low and make very favorable forms of financing. They do introduce interest rate uncertainty. Although the rates are low, there is no certainty that they will remain low despite the current economic malaise of 2011–2012, although they have never traded above about 6% in the 20

or so years they have been in the market. Because of this uncertainty, they are typically limited to something less than half the debt of a hospital.

Security and Covenants

Almost every bond issue has security provisions. Usually, the security for bond holders is described in the bond indenture. Security for credit enhancers typically is greater than that provided bond holders and is spelled out in the agreements between the credit enhancers and the hospital obligor. Covenants are promises made between the parties and are used to describe the security provisions.

Mortgages on properties are not common security provisions. Mortgages, reserved for poorer credits, are considered somewhat arcane. More in favor are covenants not to encumber. The idea is to ensure that no property has a superior security interest to the interests of the bond holders. This form is less restrictive and provides more flexibility to the hospital obligor. Almost all bond issues will provide either a covenant not to encumber or a mortgage on almost all property as security for the promise to make payments.

Covenants based on debt service coverage are fairly common. Debt service coverage is a metric that expresses how much cash is being generated relative to the debt service of the hospital. It is, as a rule, calculated as net income available for debt services divided by annual debt service. Net income available for debt service is net income plus depreciation expense plus interest expense. Debt service is the principal and interest payments for all long-term debt. Sometimes, maximum annual debt service is used; debt service is scheduled out for each year into the future and the year with the highest amount is used. Debt service coverage is used as a trigger for various covenants. If debt service coverage falls below specified level, then provisions of covenants kick in.

The most common covenant is the rate covenant—hospital covenants to set rates sufficiently high to ensure that debt service coverage is at least X (typically 1.10). If the specified coverage is not maintained, then the hospital promises to hire a consultant to do a study and determine what changes need to be made to achieve the specified debt service coverage.

Perhaps the most confusing covenants deal with additional long-term borrowing. Usually, additional long-term debt can only be borrowed when the pro forma debt service coverage (debt service coverage including the additional long-term debt) is higher than a specified level. This limits the amount of long-term debt hospitals can borrow.

Covenants made to bond holders are very rigid. Because there can be many bond holders, and many of them may be fairly unsophisticated, there is almost no way to get relief from them. If they are too tight, about the only means to gain relief from them is to refund the bonds. Thus, great care must be used in making covenants to bond holders. Covenants with credit enhancers can be more flexible because credit enhancers can waive covenants—if relief is needed, hospitals have the option of requesting waivers from the credit enhancers who are usually quite sophisticated and may very well find it in their interest to waive.

CAPITAL STRATEGY

Capital investment is one of the most important strategies affecting the future of hospitals. Hospital executives need to be highly skilled at capital formation and capital allocation. Many hospitals are capital deficient; they lack adequate access to capital and they do not allocate capital to the investments that have the greatest impact on their future position. Hospitals that can access appropriate amounts of capital and know how to discern the most important investments will strengthen their market positions and ensure continued success. They will invest in a manner that makes their market an unattractive market for others to invest in, by understanding metrics such as

1. Market size and growth rate/stage in life cycle
2. Scope of competitive rivalry
3. Number of competitors and relative sizes
4. Prevalence of backward/forward integration
5. Entry/exit barriers
6. Nature and pace of medical technological change
7. Product and patient characteristics
8. Scale economies and experience curve effects
9. Capacity utilization and capital requirements
10. Health and hospital industry profitability and dominant economic traits
11. Competitive forces at work in the industry and strength
12. Drivers of change in the health care and hospital industry
13. Medical practices in strongest/weakest competitive positions
14. Competitive moves of rivals
15. Key factors determining competitive success or failure in industry
16. Attractiveness of industry

They will also invest in a manner that continues to capture the business that belongs to their franchise.

NOT-FOR-PROFIT HOSPITALS

U.S. not-for-profit hospitals undertook unprecedented amounts of debt in the late 1990s to early 2000s. This happened because corporate finance theory—and the modicum of economic literature on hospital financing and capital formation and structure at the time—suggested that debt constrained hospitals' capacity to deliver uncompensated care.

Yet, few health economists empirically evaluated the potential association of debt financing with uncompensated medical care. Of the first perhaps was Stephen A. Magnus, PhD, MS, Assistant Professor, Department of Health Policy and Management, University of Kansas School of Medicine; Dean G. Smith, PhD, Professor and Chair, Department of Health Management and Policy, University of Michigan School of Public Health; and John R. C. Wheeler, PhD, Professor, Department of Health Management and Policy, University of Michigan School of Public Health (personal communication).

In one of the first statistical analyses of a multistate sample of audited hospital financial statements in 1997—and ultimately published in the *Journal of Health Care Finance* in 2004—the researchers found that hospital debt levels predict higher levels of uncompensated care.

As further studies yielded similar results over time; hospital boards, policy makers, and regulators concerned with the provision of uncompensated care encouraged hospitals to issue more debt. This encouragement was provided through explicit flexibility, such as removing requirements for hospitals to issue tax-exempt bonds through state finance authorities and/or removing the project financing constraint. Likewise, hospital CFOs and physician-executives who managed their organizations' financial risk benefited from a realization that optimizing the sources of financing did not impede mission-related objectives.

Up until the recent financial meltdown and credit market freeze, even current studies still seemed to offer no evidence to support concerns that debt had a negative impact on uncompensated care. However, hospitals filing bankruptcy in the fourth quarter of 2008 included a two-hospital system in Honolulu, one in Pontiac, Michigan, Trinity Hospital in Erin, Tennessee, Century City Doctors Hospital in Beverly Hills, California, Lincoln Park Hospital in Chicago, Illinois, and a four-hospital system (Hospital Partners of America), in Charlotte, North Carolina.

Please clarify. Do you mean "a two-hospital system" or something else?

Edit OK?

On the other hand, research results simply may have reflected the unusual economic and stock market conditions prevailing in the mid-2000s that are different today.

Current Malaise

Many for-profit, if not most not-for-profit hospitals, are seeing the effects of the economic downturn that has continued into 2012. For example, more than 30% of respondents to the most recent American Hospital Association survey reported a significant decline in patients seeking elective care and 40% reporting a drop in admissions overall. The majority of hospitals also noted an increase in patients unable to pay for care.

AHA has been deleted. Abbreviations/acronyms mentioned only once per chapter are deleted.

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DataBank Results

The report is based on survey results from 736 hospitals and information from DataBank, a Web-based reporting system used in 30 states to track key hospital trends:

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1. Falling profit margins to (–) 1.6 percent—from (+) 6.1% year-over-year
2. Medicare and Medicaid patient care is growing
3. Reducing administrative costs (60%), staff (53%), and services (27%)
4. Borrowing for facility and technology improvements has decreased

Capital investments are also being postponed or delayed:

1. 56% delayed plans to increase capacity
2. 45% delayed purchase of clinical technology or equipment
3. 39% delayed investments in new information technology

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The report was based on data from two major sources. A survey, *The Economic Crisis: Impact on Hospitals*, provides data from 736 hospitals from late October 2009 through November 10, 2009. DataBank figures represent early results from 557 hospitals reporting data for July through September 2008 and 2009 as of January 2010.

ASSESSMENT

Relationships between all hospital operations (for-profit and not-for-profit entities) and capital structure formation represent a fruitful area for future investigations. A key issue to explore is the possibility of intertemporal trade-offs. For example, higher levels of debt may initially help to fund public services such as uncompensated medical care, but debt repayment eventually could limit a hospital's ability to provide core community benefits.

CONCLUSION

Because of the current economic ecosystem (post the 2008–2009 "flash-crash" and 2011–2012 stock market swoon), hospitals will have limited access to capital in 2013 and beyond, and so must find unique strategies to increase their capital formation opportunities. If they do not, others will take positions in their markets that will diminish their capacity to sustain the vital services that hospitals must provide. When traditional sources of capital are inadequate, hospitals need to seek out ways to develop alternative sources of capital.

Above all, capital is driven by operating profits. Capital sources become greater as operating profits increase. Hospitals must maintain, therefore, unrelenting focus on profit in order to continue expanding their capital investment opportunities.

CASE MODEL

CAPITAL FORMATION FOR THE VALLEY MEDICAL CENTER

Nestled in the foothills of a western state, on the outskirts of its largest city is a bedroom community that is blossoming with accelerated growth and vigorous opportunity. The Valley Medical Center, the only hospital in the vibrant community of Alpha, is preparing to metamorphose from the 50-year-old small rural 50-bed hospital into a modern, suburban 70-bed medical center needed to support this community's new growth.

This is an unusual market opportunity where the business has already achieved sufficient size to cover the debt service related to the replacement facility by more than 1.7 times. Over the past 2 years, admissions have grown an average of 6.3% each year and outpatient visits have grown an average of 7.9% each year. This growth is driven by close proximity to the large city's international airport. It is the closest hospital and its market is bounded to the east by the airport. The economic impact of this massive airport is doing much to transform Alpha from a sleepy cow town to an upscale suburban community.

PROTECTED MARKET

The hospital is positioned in a market with unusual boundaries that provide unique protections from competition. The east border is bounded by the international airport. To the west, the river basin forms a natural barrier that separates the community from the adjacent town of Beta. A mountain with a national wildlife refuge is a barrier bounding the south. To the north are sparsely populated rural areas.

The primary market from which 80% of the hospital admissions originate is comprised of seven zip codes. There are no other hospitals in this area. The hospital holds a dominant position in five of these zip codes and 67.5 percent of all admissions originate in these dominant zip codes. Overall market share amounted to 58.5% during 2003.

Is this column all percent?

Patient Origin	Admissions	Market Share	Dominant	Population 2000 Census
80601	1320		4	22,050
80602	55		4	6203
80603	201		4	5803
80621	481		4	12,248
80640	71			2076
80642	104		4	2734
80622	336			28,190
Total	2568	58.5%		79,305

MARKET GROWTH

The city of Alpha (primarily zip codes 80601, 80602, and 80603) projects its population growth to average 8.2% annually from 2003 to 2010. Gamma, another community in the service area (primarily zip code 80022), projects its population growth to average 11.5% annually from 2003 to 2010. The remaining areas in the primary market are more rural and are expected to grow at 1%–2% annually. Overall, the primary market is expected to grow at about 6.8% annually through 2010. The primary market's population at the 2000 census was 79,320; by 2010, it is projected to reach 147,425, an increase of 86% in 10 years!

ESSENTIALITY

The Valley Medical Center provides essential services for at least 38,000 people. For its immediate market—the community, a town of over 27,000 people—the nearest alternative

hospital is a 26 min drive (14.9 miles). For Delta, a rural town with population of 7500, the drive to the next closest hospital is 37 min (21.7 miles); for Epsilon, population 1600, the nearest hospital after Valley Medical Center is a 33 min drive (25.6 miles); and for the residents of Zeta, population 3000, the next hospital is a 27 min drive (19.7 miles). For these towns, the services of Valley Medical Center are very important. For some of the 18,379 patients who made emergency visits during 2003, Valley Medical Center was essential. The additional drive time would have meant death instead of life.

For the community of Alpha, the replacement of Valley Medical Center is an especially important ingredient fueling its growth. The construction of a new, modern medical center is a highly visible, dramatic symbol of the transformation taking place in Alpha. As a major symbol of growth and prosperity in Alpha, it becomes pretty much unthinkable that this new, modern center for health care will do anything but grow and prosper.

STRONG OPERATION

By almost any measure of operating performance, Valley Medical Center ranks high. It has an attractive payor mix. It is well managed and experiences growing volume. Its operating margins consistently exceed any and all benchmarks. Its percentage of labor cost to operating revenue is 43.5% over the past 5 years. Its Medicare margin percentage is positive compared to 59% of all hospitals in 2003 that had negative Medicare margins (i.e., paid less than the cost of caring for Medicare patients). Medicare margins have dropped every year since 1998, as the Medicare Payment Advisory Commission correctly predicted continued margin compression with an estimated overall Medicare margin of negative 1.5% through 2005 –2006.

MedPAC has been deleted. Abbreviations/ acronyms mentioned only once per chapter are deleted.

Its mix of surgical to total admissions is also very attractive at 32%. It is hard to find anything unattractive about this hospital's operation. Operating performance this good and this consistent over this long a period is rarely seen. Every one of these operating metrics exceeds the maximum for every hospital rated by Moody's for 2003 and for the last 5-year average. There is no other hospital rated by Moody's that has achieved these operating metrics.

			Moody's Investors Service			
	2003	**5-Year Average**	**Maximum**	**Aa Median**	**A Median**	**Baa Median**
Operating margin	14.5%	14.4%	12.4%	3.3%	2.2%	0.0%
Excess margin	17.2%	16.9%	14.5%	7.3%	4.5%	1.7%
Operating cash flow margin	23.6%	23.2%	19.2%	11.2%	9.5%	7.1%

Payor Mix		
Medicare	25.7%	23.9%
Medicaid	16.4%	15.3%
Managed care	39.7%	42.2%
Commercial	2.7%	4.0%
Self-pay	15.5%	14.5%

Valley Medical Center holds a strong managed care position. Most managed care contracts are favorable discounts from charges ranging from 3% to 12%. The hospital contracts with every major managed care payor in the market except Kaiser. The hospital avoids contracting

with Kaiser for strategic purposes. No single managed care contract dominates; the highest volume managed care contract contributes only 7.6% of total hospital revenue.

Top 10 Managed Care Contracts	Percentage of Revenue	Discount
United Healthcare	7.6%	10%
Cigna	5.2%	7%
PacifiCare	4.7%	20%
Blue Cross National	4.0%	DRG
Sloan's Lake	3.6%	10%
Aetna	1.9%	12%
Blue Cross HMO	1.7%	12%
Blue Cross PPO	1.6%	DRG
Great West/One Health	1.0%	7%
PHCS	0.8%	3%

Please confirm the change from Pacificare to PacifiCare.

COMMITTED MEDICAL STAFF

Valley Medical Center maintains a unique medical staff model that requires physician commitment to the hospital and creates unusually high physician loyalty. This commitment is demonstrated in several ways; most significantly, physicians cannot take patients from the primary market to any other hospital. The commitments physicians make to the hospital seek to align the benefits of staff privileges with the needs of the community and the hospital. At present, this unusual model is serving the hospital well; it is currently set to sunset in 10 years.

GOOD GOVERNANCE

The hospital is supported by a governance structure tied to the community. The membership of its nonprofit corporation is composed of state residents who have contributed at least $10,000 to the hospital's foundation and the board of directors. The board of directors is composed of 14 members—six appointed by the membership, six appointed by the board of directors, and two ex officio (medical staff president and hospital president). Board members are appointed for 6-year terms. This distribution of governance powers has served the hospital well, keeping it focused on the needs of the community, keeping a strong management team in place, and avoiding distracting entanglements with other interests.

HIGHER LEVERAGE

When the proposed bonds are issued, leverage, expressed in terms of debt to total capital, will be about 62%. Debt to total capital of 62% is within the range of credits in the A and Baa Moody's rating categories; it is 1.99 standard deviations above the mean for A rated credits and 0.67 standard deviations above the mean for Baa credits. Thus, while the initial debt to total capital ratio will exceed the median for investment-grade credits, it is well within the observed range for investment-grade credits; it would not even be considered an outlier in the Baa rating category.

Studies show no correlation between debt service coverage and leverage. Higher leverage may be associated with higher risk when debt service coverage is also low. However, when the hospital's leverage is expected to be highest, at 62%, debt service coverage is projected at 10.6 times. The lowest forecast debt service coverage is 3.4 times when debt to total capital is forecast to be about 51%. Investment grade ranges for debt service coverage are from 0.4 to 16.7 for the A category and from 5.4 to 11.2 for the Baa category. When this debt is issued, Platte

Valley Medical Center's leverage and coverage fit comfortably in the Baa rating category and are not outside the ranges observed in the A rating category.

UNDER 100 BEDS

Hospitals under 100 beds are not commonly rated in the investment-grade categories. Moody's expresses the view that smaller providers "tend to be more vulnerable to unexpected operating challenges, such as key physician departures, shifts in demographics, and competitive threats." Valley Medical Center has unique protections from these threats. Its committed medical staff model makes it less vulnerable to key physician departures because it is less likely that the patients of a departing physician will be moved to a competing hospital. For the foreseeable future, shifts in demographics are driven by the economic development around the international airport and they are overwhelmingly positive. Competitive threats are minimized by the unique natural market protections along with the committed medical staff model.

The profile commonly typifying hospitals under 100 beds is rural with little or no growth. The profile for Valley Medical Center is exactly the opposite.

NOT A SYSTEM

Valley Medical Center is a stand-alone hospital, not affiliated with a hospital system. As such, the credit risk is not spread to any other markets; it is concentrated on the international airport market. In the event this market becomes inadequate to meet debt service requirements, the hospital will almost certainly become an attractive acquisition candidate for most any of the hospital systems in the big city. Its market position would be highly complementary to any of these hospital systems.

LOTS OF CASH

Valley Medical Center has accumulated a great deal of cash. Cash balances amounted to $49.4 million at December 31, 2003 and represented 480 days of expenses. This compares to the Standard & Poor's medians of 211 days for AA hospital credits, 159 days for A hospital credits, and 110 days for BBB hospital credits. These cash balances, coupled with the project debt service reserve fund, represent unusual levels of protection against any downturns in operating performance.

FORECAST

Valley Medical Center has developed a 5-year financial forecast that encompasses the proposed project. Key ratios include

	2004	2005	2006	2007	2008
Admission growth	8.5%	3.6%	3.7%	3.8%	6.0%
Operating margin	10.7%	10.1%	12.2%	4.3%	5.5%
Net margin	12.6%	16.9%	21.3%	10.1%	10.1%
Earnings before interest 11.8%		11.4%	13.3%	12.2%	12.6%
EBID margin	20.1%	19.6%	21.1%	23.4%	22.9%
Debt service coverage	10.7	11.7	14.6	3.4	3.5%
Days of cash on hand	517	567	485	468	491
Debt to total capital	61.7%	58.0%	53.9%	51.3%	48.8%

NOT SPECULATIVE

This project is not speculative; current revenues are adequate to provide more than 1.7 times coverage of pro forma maximum annual debt service. This coverage does not count on the future growth driven by development around the international airport or market share growth driven by the more favorable location in the market, the additional bed capacity, and a modern facility. All of these factors are solid and significant and will positively affect the revenues of Valley Medical Center.

Further, liquidity is high and is forecast to remain at high levels—the lowest forecast level for cash is 468 days of cash in 2007. This high level of liquidity along with the debt service reserve fund provides good protection against possible future blips.

Strengths:
- Strong market growth
- Dominant market position
- Protected market position
- Strong operating performance
- Strong managed care position
- Physician loyalty
- Lots of cash

Weaknesses:
- Under 100 beds
- Not a system

SOLUTION CONSIDERATIONS FOR THE VALLEY MEDICAL CENTER

Sources	
Equity	$17,000
Fixed rate tax-exempt bonds	76,075
Variable rate tax-exempt bonds	11,415
Original issue discount	–804
Earnings on construction fund	1532
Total	$105,218

Uses	
Hospital project	$89,570
Medical office building project	7470
Debt service reserve fund	7358
Issuance costs	825
Total	$105,218

KEY ISSUES

How important to hospital capital structure and formation are the following:

Source of assets?
Use of assets?
Credit ratings?
Market share?
Market metrics and benchmarking?

What additional issues should a hospital team consider in order to successfully transform a 50-bed hospital into a 70-bed medical center?

Hospital Product Markets

- What, if any, are the impacts of terminology vagaries on the definition of a hospital product market?
- What are the definitional impacts on competition for medical services provided by hospitals?
- What developments have there been in economic theory with regard to defining hospital product markets?
- How do payors (including employers) define hospital product markets?
- What data are available to assist in the formulation of an appropriate hospital product market?
- How do patients and physicians define hospital product markets?
- What developments have there been in economic theory with regard to defining hospital geographic markets?
- Assuming definitional stability, what data are available to assist in the formulation of an appropriate geographic hospital market?
- Do hospitals in more concentrated markets charge higher prices?
- Does the structure and performance relationship differ for not-for-profit and proprietary hospitals?

Acute Care Hospitals

- What correlation is there between fiscal capital formation efficiency measures and the actual measures that are implemented in an acute care hospital?
- Have discounts secured from acute care hospitals by managed care payors resulted in higher prices for other payors or for capital acquisition?
- What evidence is there that acute care hospitals in concentrated markets lead to higher prices?
- What evidence is there that ease of capital acquisition and formation in concentrated acute care hospital markets have led to changes in the breadth and quality of medical services?
- What evidence is there that concentrated acute care hospital markets have slowed the rate of managed care penetration?

Specialty Hospitals

- What factors drive the unbundling of inpatient acute care hospital medical and/or surgical services in specialty hospitals?
- What have been the effects of unbundling medical services for specialty focused hospitals?
- Has quality of medical care been enhanced as "focused specialty hospital factories" have emerged?
- Have costs and access increased or decreased in specialty hospitals?
- How has competition been affected by general inpatient acute care hospitals, the single-specialty hospital, and for services provided only by the general inpatient hospital?

- Is the development of a general acute care hospital any different than the emergence of specialized hospitals for children, rehabilitation, psychiatry, or the elderly?
- What actions have general inpatient hospitals taken in response to the emergence of competition from single-specialty hospitals?
- Do any of these actions involve anticompetitive conduct or capital formation compression?

Hospital Networks

- How prevalent are local geographic hospital networks or RBACs?
- What does competitive economic theory indicate about the circumstances under which hospital networks are likely to emerge?
- When are hospital network arrangements likely to be procompetitive and when are they likely to be anticompetitive?
- How do traditional antitrust concepts address the forms of anticompetitive conduct potentially likely to emerge in a health care setting?
- What implications for merger and acquisition potential does the existence of such network conduct have?

CHECKLIST 1: Credit Scoring

In order to decide if the timing is right for a hospital capital investment, consider the following issues to determine whether the competitive market is favorable or unfavorable.	YES	NO	Favorable	Unfavorable
Is the market favorable?	o	o		
Location and ease of transportation access			o	o
Population and population growth; growing, stable, or declining			o	o
Sociodemographic profile (age mix, wealth indicators)			o	o
Business environment			o	o
Is it growing?	o	o		
Market share			o	o
Is it growing?	o	o		
Is product line market share growing?	o	o		
Market dominance			o	o
Epidemiological information			o	o
Sources of competition			o	o
Are there freestanding physician-owned hospitals in the area?	o	o		
Are there ambulatory surgery centers in the area?	o	o		
Are there other outpatient services in the area?	o	o		
Out-migration			o	o
Competition and characteristics of competitors			o	o
CON			o	o
Rate regulation			o	o
Disproportionate share pools (net payor/receiver)			o	o
Use rates			o	o
Is the payor environment favorable?	o	o		
Payor dominance			o	o
Fractured payor market			o	o

Financial performance of payors			o	o
Provider-sponsored managed care organizations			o	o
Exclusive contracting			o	o
Payor methodology			o	o
Rate increases			o	o
Payor relations			o	o
Payor mix and payor mix trends			o	o
Profitability by payor			o	o
Is the medical staff situation favorable?	o	o		
Size and breadth of medical staff			o	o
Turnover of medical staff			o	o
Average age of total and active medical staff			o	o
Number and growth of active physicians			o	o
Top 10 admitters and percentage of admissions			o	o
Loyalty of medical staff (percentage of splitters)			o	o
Physician supply			o	o
Are the quality considerations favorable?	o	o		
Mortality indicators (product line, if available)			o	o
Case mix index adjusted average length of stay			o	o
Joint Commission on Accreditation of Healthcare Organizations scores			o	o
National Committee for Quality Assurance scores for provider-sponsored HMO			o	o
Patient satisfaction scores			o	o
Medical errors prevention programs			o	o
Clinical resource utilization			o	o
Formulary standardization			o	o
Clinical pathways			o	o
Is the financial performance favorable?	o	o		
Revenue growth			o	o
Operating margin			o	o
Earnings before interest margin			o	o
Profit margin			o	o
Return on equity			o	o
Return on capital			o	o
Return on assets			o	o
Salaries and benefits percent of operating revenue			o	o
Bad debt percentage of operating revenue			o	o
Pro forma maximum annual debt service coverage			o	o
Maximum annual debt service coverage			o	o
Annual debt service coverage			o	o
Pro forma maximum annual debt service to operating revenue			o	o
Maximum annual debt service to operating revenue			o	o
Is the balance sheet strength favorable?	o	o		
Days of cash on hand			o	o
Cash to debt			o	o
Days of revenue in accounts receivable			o	o
Average payment period			o	o
Debt to total capital			o	o
Debt to total assets			o	o

Please confirm expansions for CMI and ALOS.

Please confirm expansion for JCAHO.

Please confirm expansion for NCQA.

Pro forma debt to total assets	o	o
Debt to cash flow	o	o
Pro forma debt to cash flow	o	o
Average age of plant	o	o

Please confirm the change from NOTES section to BIBLIOGRAPHY section. The two references under Additional Readings have been included in this list.

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