33 Estimating Hospital Real Property Values for Ad Valorem Tax Purposes

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The value of hospital real property has historically been estimated for ad valorem tax purposes by relying predominately on the cost approach. Hospitals are typically bought and sold as going-concern, business enterprises, and the assessor's task is to isolate and identify the real and nonreal property components in order to fairly tax those components. This article looks at the traditional cost approach and presents an income approach method for valuing real property hospital assets. The income approach methodology may provide further confirmation of the real property value derived in the cost approach, but this approach should be used with caution and by someone familiar with hospital valuations and the hospital business.

Acute-care hospitals are complex going-concern, business enterprises that are typically bought and sold by persons experienced in the operations of those businesses. The value of a hospital consists of three components: (1) the value of real property in one or more locations, (2) the value of personal property including equipment and furniture, and (3) business value. A hospital may also include outpatient medical centers, physician practices, nursing homes, or other retirement housing and home health agencies or operations. A hospital is a business, and the purchase price paid for the business may be unrelated to the value of real property assets.

Local assessors must estimate the value of real property for "for-profit" hospitals in order to tax those assets according to jurisdictional law. This article looks at the various methods of valuing the real property assets of a hospital, and discusses the strengths and weaknesses of each approach.

Background and Definitions

Real property is "the interests, benefits, and rights inherent in the ownership of real estate"[1] (which includes only land and improvements).

"*Going-concern value* refers to the total value of a property, including both real property and intangible personal property attributed to business value."[2] According to established literature, "the intangible value of business is the difference between the going-concern value of the business including the real property and market value of the real property."[3] Intangible assets have alternatively been defined as "non-physical assets, including but not limited to franchises, trademarks, patents, copyrights, goodwill, equities, mineral rights, securities, and contracts, as distinguished from physical assets such as facilities and equipment."[4]

The task of separately isolating and estimating real property value for hospitals is difficult. Courts have ruled in many cases that the assessors must use valuation techniques that are common in the appraisal industry, techniques that attempt to parallel

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1. *The Appraisal of Real Estate* 23, 10th ed. (Appraisal Institute, 1992).
2. Ibid. at 24.
3. J. S. Rabianski, *Going-Concern Value, Market Value and Intangible Value*, The Appraisal Journal 188 (Apr. 1996).
4. *Uniform Standards of Professional Appraisal Practice* 7 (Appraisal Found., 1995).

how the particular assets are traded in the market place. As a result, tax appraisal methodology in many parts of the country has become more sophisticated. Many county assessors now regularly use the cost, income, and sales comparison approaches to value real property assets for standard property types. There are two risks, however, with using *other than* the cost approach to value real property hospital assets:

1. The real property assets of hospitals are not typically acquired separately from personal property and business value; and
2. The income and sales comparison approaches can easily overestimate the value of real property assets in the current, dynamic mergers and acquisitions hospital environment.

A hospital is a special-purpose going-concern business. The real property component of value is rarely ever sold separate from the business, and the real property usually has limited potential use outside its derived use. In the case of large and profitable hospitals, the real property component value may only represent 20–25 percent or less of the entire business enterprise value or purchase price. Hospitals are presently being acquired in some cases for very high prices due to the consolidation and other changes that are occurring in the industry. Using alternative valuation methods to estimate hospital property value can produce widely varying results and inaccurate real property value estimates. In certain cases, however, an income approach may produce a reliable property value estimate that supports the cost approach estimate. Whether the real property is valued with one or more methods, the appraiser should have a good understanding of the hospital industry in order to provide credible support for all derived value estimates.

This discussion provides a framework for estimating the real property value of a hospital using the cost approach and the income approach. Although the sales comparison approach is a strong method of valuing going-concern hospital enterprises, it is not usually a reliable and supportable method of valuing the separate real property assets (the exception would be psychiatric hospitals for which significant data have been provided on the allocation of the purchase price components of comparable sales). This discussion also conducts a profit margin and sensitivity analysis in the income approach which shows how small changes in the facility net revenues, as reflected by the stabilized EBDITA (earnings before depreciation, interest, taxes, and amortization), can lead to very wide variations in real property value estimates.

Cost Approach

The subject of this appraisal is an acute-care hospital that was constructed in 1970. Although this example is fictional, the facility size, gross revenue level, and expense ratios are similar to a hospital in an East Coast suburban location. The building is five stories tall, with steel-frame construction and brick veneer exterior walls. The hospital has 99,300 square feet of building area plus a 9,030 square foot basement. The building is situated on a 20-acre site. The hospital does not own any physician practices, outpatient centers in other locations, or home health services.

The real property replacement costs were estimated using the *Marshall Valuation Service.* The fixed assets schedules of the hospital provide the primary source for estimating the value of furniture and equipment within the hospital. Exhibit 1 is a presentation of the book values and depreciation ratios for all hospital property. The building was constructed in 1970, and the building and land improvements are 78.9 percent depreciated for accounting purposes. The movable assets include all personal property for the hospital. The average life of the classes of movable assets were estimated from AHA (American Hospital Association) useful lives guidelines. The weighted average life of the movable assets is 8.1 years, and the average age is 5.5 years. The actual cost of movable assets was $2,372,776, or $19,773 per bed for the 120-bed facility.

The *current replacement costs* for the movable assets, or personal property, is estimated using two methods:

1. *By escalating the actual costs of the movable assets categories by an annual inflation factor for a period equaling the average age of those assets.* The annual equipment escalation factor was estimated at 4.0 percent per year, based on health care equipment periodical data. The actual purchase costs for each of the movable cost categories is escalated by 4.0 percent per

EXHIBIT 1 Book Values and Depreciation Ratios

No. of Operating Beds:	120
No. of Square Feet:	108,330
Year Built:	1970
Annual Inflation Factor	4.0%

Asset Class	Original Costs	Total Depreciation	Depreciated Book Value	% Depreciated	Current Depreciation $ (1)	Current Depreciation % of Costs (2)	Average Life (3)	Average Age (4)	Estimated Market Costs (5) $ (rounded)	Estimated Market Costs (5) Per Bed
Total Buildings	$2,972,161	$2,066,554	$905,607	69.5%	$80,224	2.7%				
Building Services	1,819,149	1,616,116	203,033	88.8%	25,741	1.4%				
Land Improvements	538,856	522,630	16,226	97.0%	2,531	0.5%				
Total Depreciable Fixed Assets	$5,330,166	$4,205,300	$1,124,866	78.9%						
Major Movable	$2,014,885	$1,379,398	$635,487	68.5%	$171,999	8.5%	8.0	5.5	$2,500,000	$20,833
Fixed Equipment	247,213	132,875	114,338	53.7%	13,850	5.6%	10.0	5.4	310,000	2,583
Vehicles	110,678	86,800	23,878	78.4%	17,469	15.8%	5.0	3.9	130,000	1,083
Total Depreciable Movable Assets	$2,372,776	$1,599,073	$773,703	67.4%	$203,318	8.6%	8.1	5.5	$2,940,000	$24,500
Per Bed	$19,773	$13,326	6,448							
Total Book Value of Assets	$7,702,942	$5,804,373	$1,898,569	75.4%						

Note: Numbers in the shaded cells are used in the Cost and Income Approaches.

(1) Current annual depreciation per class from hospital books.

(2) Depreciation as an annual percentage of Original Costs.

(3) Average life of assets per class: estimated from American Hospital Association "Useful Lives" depreciation guidelines.

(4) Average number of years depreciated: % depreciated times (3).

(5) Estimated cost to purchase assets today: original costs escalated by inflation factor for average age of assets (4).

year for their respective average ages (e.g., major movable: $\$2,014,885 \times (1.04)^{5.5} = \$2,499,963$). The current replacement cost estimates for each movable asset category are rounded, and the movable assets categories totaled to $2,940,000.

2. *By the Marshall Valuation Service* (Section 45, Page 3). Movable equipment is estimated at a moderate level of $26.25 per square foot, or $2,843,662.

Method (1), above, using the actual ledger costs, is considered more accurate, and the current replacement costs for the movable assets is thus estimated at $2,940,000 or $24,500 per bed.

Other miscellaneous replacement costs include $200,000 for professional fees, title insurance, and financing and taxes, and 5.0 percent of hard costs is included as contingency costs. The cost approach also includes a 10.0 percent entrepreneurial profit and $7,500 per bed for state CON (certificate of need) or license value. The value of a CON is typically estimated at $5,000 per bed to $10,000 per bed, subjectively depending on the market strength or local market position of the hospital. The middle of this range, at $7,500 per bed, or $900,000, seems appropriate for the subject facility.

While the actual age of the building is 26 years old, the effective age is estimated at 23 years because of periodic renovations. The cost approach summary is represented in Exhibit 2. The total estimated cost approach value of the hospital is $10,883,035. The real property value, which is rounded to $9,020,000 is the total value less the depreciated value of furniture, fixtures, and equipment (FF&E) and the CON value.

The cost approach underestimates the total business enterprise value of a profitable operating hospital by underestimating the business value component. For the purpose of estimating the real property value, however, this approach is considered to provide a good value estimate.

Income Approach

The income approach to valuing the real property assets of a hospital begins with the hospital-stabilized EBDITA and reduces that cash flow by revenues that are not specifically applicable to the real property assets. The result of this elimination process is the net income attributable to real property assets, which is capitalized into a value estimate of only the real property. A similar business income elimination methodology to derive a real property value estimate has been presented for hotels.[5] That methodology has been modified and expanded in this article to apply to hospital valuations.

Exhibit 3 is an income approach summary for the subject hospital. The top part of Exhibit 3 includes a total hospital enterprise income approach value of $14,400,000. Since identifying the real property value component is the subject of this analysis, this article does not provide any support for the business capitalization rate represented nor the final business enterprise value estimate.

The bottom of Exhibit 3 shows the adjustment process used to subtract out income *not* associated with the real property. This process begins with an estimate of stabilized EBDITA. The appraiser should be very cautious in selecting a one-year EBDITA to capitalize into a value estimate because of the volatility of hospital profits from year to year. Also, although recent hospital industry profits in general have been high, profits are not likely to remain at the current high levels due to political and economic pressures to reduce the rate of increase in Medicare and Medicaid expenditures. The selection of stabilized EBDITA should anticipate trends in the future as well as relying on historical facility net revenues.

Three categories of deductions from the stabilized EBDITA represent business revenues associated with *other than* real property:

1. *Net income attributed to personal property.* This includes revenues to provide for the timely *replacement of personal property* and revenues representing a *return on personal property.* The current replacement costs of the personal property (movable assets including furniture and equipment) was estimated earlier at $2,940,000. The average life of these assets was also calculated earlier at 8.1 years based on current depreciation schedules. The annual revenues needed to provide for the replacement of these assets is $362,963 ($2,940,000/8.1).

5. D. R. DeRango and S. J. Matonis, *The Determination of Hotel Value Components for Ad Valorem Tax Assessment*, The Appraisal Journal, 342 (July 1986).

EXHIBIT 2 Cost Approach Summary

Segregated Replacement Cost New:

		Per Square Foot (SF)	Total Costs	
Hard Costs				
Site Preparation		$0.37	$37,200	
Foundation		2.91	289,012	
Frame		15.19	1,508,625	
Exterior Walls		6.76	671,582	
Floor Base		7.88	782,685	
Floor Cover		5.14	509,993	
Roof Base		2.48	246,088	
Roof Cover		1.22	121,107	
Partitions and Built-in Items		35.17	3,491,986	
Ceilings		5.54	550,217	
Plumbing		1.91	189,695	
HVAC		20.77	2,062,814	
Electrical		17.81	1,768,836	
Other Features		6.60	654,943	
Basement Walls and Finish (9,030 SF)		4.86	482,276	
Total Building Costs	99,300 SF@	$134.61	$13,367,059	
Walkways and Paving	45,000 SF@	2.00	90,000	
Landscaping	50,000 SF@	1.50	75,000	
Site Work/Retention	250,000 SF@	0.50	125,000	
Total Hard Costs:				$13,657,059
Soft Costs:				
Professional and Permanent Financing Fees, Title, Insurance, Taxes, etc.			$200,000	
Miscellaneous and Contingency @	5.0%		682,853	
Total Soft Costs:				882,853
Entrepreneurial Profit @ 10% (of Hard and Soft Costs)			1,453,991	
Current Real Estate Replacement Costs	$133,283	Per Bed or	$161.07 per SF	$15,993,903
Market Value of Furniture, Fixtures and Equipment (FF&E)	120	Beds @	$24,500/Bed	2,940,000
Certificate of Need (CON)/ License Value or Costs	120	Beds @	$7,500/Bed	900,000
Total Hospital Replacement Cost New	$165,283	Per Bed		$19,833,903

EXHIBIT 2 Cost Approach Summary *(continued)*

Depreciation:						
Physical Curable:	$0					
	Cost New	**Effective Age**	**Economic Life**	**Accumulated Depreciation**		
Physical Incurable (Short-Lived):						
Item						
Roof Cover	$121,107	2.0	20.0	$12,111		
FF&E	2,940,000	5.5	8.1	1,996,296		
Floor Covering	509,993	5.0	7.0	364,281		
HVAC	2,062,814	10.0	15.0	1,375,209		
Site Improvements	290,000	10.0	15.0	193,333		
	$5,923,914				$3,941,230	
Physical Incurable (Long-Lived):						
Replacement Cost New (excludes CON)				$ 18,933,903		
Less Short-Lived Items				5,923,914		
Depreciable Basis				$13,009,989		
Effective Age/Economic Life (23/50)				46.0%	$5,984,595	
Functional Obsolescence:					0	
External Obsolescence:	0.0%	Of Replacement Hard Costs New			0	
Total Estimated Accrued Depreciation						9,925,825
Estimated Depreciated Value of Improvements						$9,908,078
Add Land Value						960,000
Estimated Value Via the Cost Approach						$10,868,078
Less Depreciated FF&E and CON/License Value						1,843,704
Real Property Value Estimate						$9,024,374
				Rounded to		$9,020,000

The return on personal property is estimated by multiplying the current nondepreciated value of personal property ($943,704 from the cost approach) by a rate of return expected for personal property. This rate of return is estimated at 2.0 percent above real property hospital mortgage rates, currently estimated at 11.0 percent. A 13.0 percent personal property return rate results in an annual deduction of $122,681, for a total revenue deduction attributed to personal property of $485,644.

2. *Net income attributed to return on start-up capital costs.* This is based on alternative investment yield that could have been earned on the capital that was invested in this business. The alternative investment yield is the same as the capitalization rate on the entire business enterprise. The annual deduction due to the required return on start-up capital costs is $150,117, based on a 17.0 percent yield amortized over 50 years (constant of 0.17004).
3. *Net income attributed to return on business value components.* This is estimated by an alternative investment yield on the CON value of $900,000. Based on the 0.17004 constant, this revenue deduction is $153,033. The annual management

EXHIBIT 3 Income Approach Summary

Business Enterprise Capitalization and Preliminary Business Value Estimate				
Net Operating Revenues				$17,500,000
Other Revenues				100,000
Net Facility Revenues				$17,600,000
Less Operating Expenses				
Salaries and Wages	50.0% of Net Revenues		$8,800,000	
Employee Benefits	22.0% of Salaries		3,872,000	
Supplies	5.0% of Net Revenues		880,000	
Professional Services	3.5% of Net Revenues		616,000	
Management Fees			See Below	
Reserves for Replacements of Short-lived Items			See Below	
Real Estate and Personal Property Taxes			280,000	
Other Operating Expenses	4.0% of Net Revenues		704,000	
Total Operating Expenses				15,152,000
Stabilized EBDITA (Earnings Before Depreciation, Interest, Taxes, Amortization)				$2,448,000
Capitalization Rate (inverse of EBDITA Multiple of 6.0, rounded)				17.0%
Indicated Business Enterprise Value				$14,400,000
		Rounded to:		$14,400,000
Income Adjustment Process and Real Property Value Estimate (to Remove Income Attributed to Personal Property and Business Enterprise)				
Stabilized EBDITA			$2,448,000	
Less I. Net Income Attributed to Personal Property				
A. Personal Property Replacement Reserves		**Average Life**	**Annual $**	
Current Replacement Cost for Personal Property $2,940,000		8.1	362,963	
B. Return on Personal Property (Equipment & Personal Property) Non-Depreciated Cost Approach Value of Personal Property $943,704 @		**Return to P. Property** 13.0%	**Annual Deduction** 122,681	
Total Revenue Deduction Applicable to Personal Property				$ 485,644
Less II. Return of and on Start-up Capital (Soft) Costs (from Cost Approach)				
A. Initial Organization, Legal, Title, Accounting, etc.		$200,000		
B. Miscellaneous and Contingency		682,853		
Subtotal Soft Costs			$882,853	
Factor to Amortize Start-up Costs – No. of Years Amortized	50		**Annual Constant**	
Alternate Investment Yield Rate (Business Cap Rate)	17.0%		0.17004	$150.117
Total Revenue Deduction Applicable to Start-up Costs				
Less III. Business Value Revenue Components				
A. CON (Certificate of Need) Costs				
$7,500	Per Bed	$900,000		
		Annual Constant 0.17004	$153,033	
B. Annual Management Expenses	3.0% of Net Revenues		528,000	
Total Revenue Deduction Applicable to Business Components				681,033
Net Income Attributed to Real Property Only				$1,131,205
Divided by capitalization rate				12.5%
Real Property Value Estimate				$9,049,641
			Rounded to:	$9,050,000

fees of $528,000 are a representation of the annual income required to conduct the current business enterprise at its anticipated net revenue level. This fee is typically established by the hospital company as an allocation of corporate office salaries and overhead to individual hospitals based on their individual hospital revenues to total company revenues. The deduction of this fee from real property attributed income is supportable because, "it is clear that neither return on or return of investment worth is paid from the management fee to those who provide and replace the tangible and intangible assets in the working capital and goodwill categories."[6] The total revenue deduction attributed to business value components in this category is $681,033.

After these deductions, the *final net income attributed to real property only* has been reduced to $1,131,205.

Real Property Capitalization Rate

The author is aware of several sale/leaseback arrangements under which real estate investment trusts (REITS) have acquired the real property assets of hospitals and medical buildings, with the guarantee of the hospital company retaining an option to repurchase the assets under certain conditions based on established formulas. The annual rent/return for these sale/leasebacks is typically 10.0 to 15.0 percent. At the lower end of this investment return range are quality, multi-tenant medical buildings on or near hospital campuses. More specialized buildings with less credit strength behind the lessee guarantees are at the upper end of this range.

The real property assets of a Pennsylvania hospital were recently acquired by a REIT at an annual rental rate of 12.5 percent of the purchase price for the first five years. After five years, the rental rate was to be adjusted upward at approximately one-half the rate of inflation. This annual

EXHIBIT 4 Profit Margin and Sensitivity Analysis

	Case 2 +20%	Existing Case	Case 3 -20%
Net Facility Revenues	$21,120,000	$17,600,000	$14,080,000
Stabilized EBDITA	2,993,600	2,448,000	1,902,400
EBDITA Adjustments			
Management	633,400	528,000	422,400
Reserves for Replacements	362,963	362,963	362,963
Depreciation	203,318	203,318	203,318
Net Income	$1,793,719	$1,353,719	$913,719
Profit Margin	8.5%	7.7%	6.5%
Cost Approach Value Estimate	Same	$10,868,078	Same
Real Property Component Value	Same	$9,020,000	Same
Per Square Foot	Same	$83.26	Same
Business Enterprise Value Estimate	$17,600,000	$14,400,000	$11,200,000
Per Bed	$146,667	$120,000	$93,333
Real Property Component Value	$12,570,000	$9,050,000	$5,530,000
Percent Change	38.9%		-56.0%
Per Square Foot	$116.03	$83.54	$ 51.05

6. Anthony Reynolds, *Attributing Hotel Income to Real Estate and to Personalty,* The Appraisal Journal 615-617 (Oct. 1986).

rental rate, or implied capitalization rate, is approximately 2.0 to 3.0 percent higher than capitalization rates for standard property types that are published regularly in appraisal industry surveys. Most capitalization rates for standard property types are in the 9.0 to 11.0 percent range. The subject hospital is owned by a smaller hospital company with a lower credit rating than the Pennsylvania hospital.

Based on this discussion, a 12.5 percent capitalization rate is used to estimate the real property value in this analysis. Dividing $1,131,205 by 12.5 percent produces a real property value estimate that is rounded to $9,050,000.

The cost approach produced a real property value estimate of $9,020,000, while the income approach produced a real property value estimate of $9,050,000. In this case, the income approach appears to provide significant support for the cost approach value estimate.

Sensitivity Analysis

Exhibit 4 provides an analysis of the income approach value estimate if the stabilized EBDITA for the subject hospital is 20 percent higher or lower than its current estimated stabilized level. In the "existing case," the total business enterprise value was estimated at $14,400,000 with the real property value being $9,050,000. Also, under the current income estimate, the hospital profit margin is 7.7 percent of net facility revenues, slightly higher than the 1995 industry average of 6.8 percent for "for-profit" or "government" hospitals.[7]

Exhibit 4, however, also shows how using this income approach methodology can distort the real property value component for hospitals that have higher or lower profit margins. Case 2 shows the same hospital producing net facility revenues that are 20 percent higher, and a profit margin that increases from 7.7 percent to 8.5 percent of net revenues. Although the business enterprise value rises approximately 22 percent, the real property value estimate increases 38.9 percent. Case 3 shows the same hospital producing net facility revenues that are 20 percent lower than the existing case, and a profit margin that declines from 7.7 percent to 6.5 percent of revenues. Although the business enterprise value in this case also declines approximately 22 percent, the real property value estimate declines 56 percent.

This sensitivity analysis clearly shows that the real property value estimate can be distorted at changing hospital profitability levels, and the income approach methodology becomes less reliable for this reason.

The income approach methodology presented above never gets all of the income out that is attributed to the operating business, particularly if the revenues of the hospital are high. In general, the income approach overestimates the real property value of a profitable operating hospital, by underestimating the business value component.

Conclusions

The cost approach remains the preferable method of valuing real property hospital assets. An income approach similar to what is used in this article can, in limited cases, be used to provide support for the cost approach value estimate. However, as proven above, the income approach methodology can also produce a potentially inaccurate value estimate.

7. American Hospital Association, *The State of Hospitals*, *Modern Healthcare* 56 (Feb. 17, 1997).