

Using the Income Approach for Minority Interests

by Dennis A. Webb, MAI

Abstract

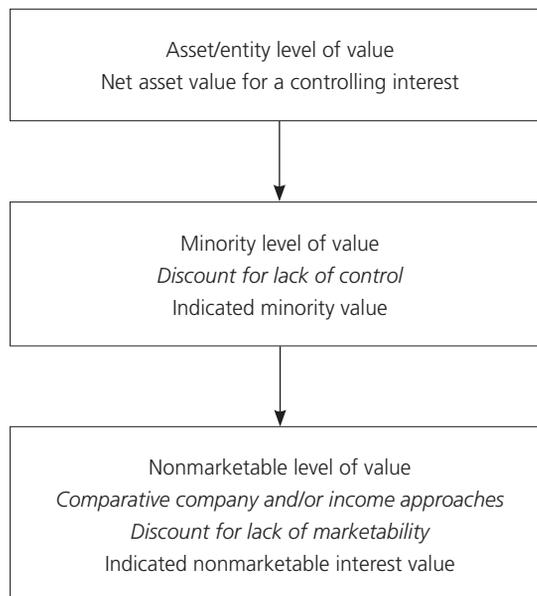
A familiar method based on investment fundamentals can be used to bolster credibility when appraising interests in real estate limited partnerships. This article is about valuing undivided interests in real estate—in particular, the discount for lack of control that applies for minority holdings in partnerships and limited liability companies. It demonstrates an income method based on fundamental investment analysis that connects strongly and clearly with the essential facts of a partnership and a minority interest. Such analysis includes a risk premium for lack of control, as developed from real estate investment trust (REIT) trading and PwC real estate investor data. A case example demonstrates how discounted future returns can be used alongside the appraiser's other methods to bolster the analysis and produce a persuasive valuation report.

Introduction

The valuation process for interests in partnerships (or limited liability companies) that hold real estate normally takes place at three levels—the asset level, the minority level, and the nonmarketable level,¹ as shown in Exhibit 1.

Exhibit 1 illustrates how each level refers to a different value, ranging from the value of the entity as a whole at the top, reducing that value to a level appropriate for the subject interest's lack of control, and then reducing it further for its lack of marketability. This is the overall process for valuing undivided interests of all types, including interests in real estate holding companies—typically limited partnerships and limited liability companies.² At each *level of value*, the appraiser uses well-established valuation methods, which together tell the “story” of the subject interest's inability to control the real estate or the partnership, and also its inability to exit the partnership, at least for a time.

Exhibit 1 Levels of Value



1. Shannon P. Pratt, *Valuing a Business*, 5th ed. (New York: McGraw-Hill, 2008), 384. This flow diagram is adapted from business valuation theory.

2. This process is applicable for *indirect* or *proxy* methods that are commonly used for valuing businesses and partnership interests. It does not necessarily apply for *direct* methods, where the appraiser has comparable common tenancy or private partnership interest transactions from which he or she can extract the applicable discount.

Making the necessary analytical connections between levels can be challenging because each level calls for a different method, requiring that the appraiser bridge real estate appraisal and business valuation technologies. Unfortunately, logical detours and disconnects can easily occur, leading to vulnerabilities in the appraisal report. This often does not turn out well, either in litigation, with the IRS, or in any report that needs to make a logical case to the reader.

This article concerns an additional method that can be used to value the minority level, essentially the discount for lack of control or, conversely, the increased yield required because of a lack of control.³ It recommends adding the familiar and powerful *income approach* (in the shaded box of Exhibit 2) alongside the tradi-

tional *asset/comparative company approach*. The article provides guidance for both, to help the appraiser minimize vulnerabilities in the report and contribute to a persuasive valuation.

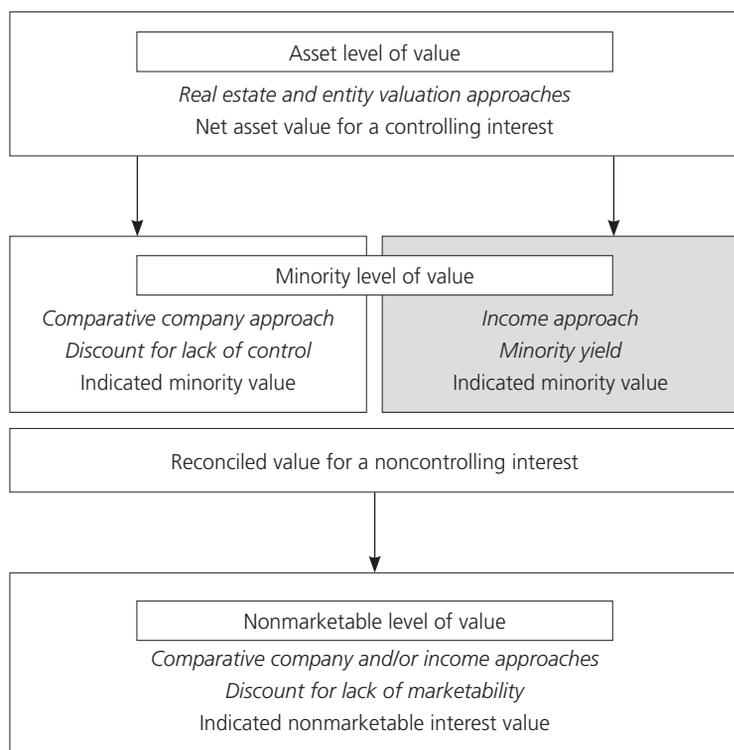
Fundamental Investment Analysis

Market value is a curious thing. The appraiser is charged with interpreting the decision-making process of buyers and sellers and reconciling value indications from various methods based on how well they reflect the market. This works for active markets but is a challenge for inactive markets, where there is so little activity that buyers and sellers cannot be found.

This conundrum has bedeviled business and real estate appraisers forever. It applies when property markets temporarily stop functioning, when the property-type transfer includes an operating business, and for privately held interests in real estate partnerships. In each case, market activity is so low, or “thin,” that straightforward methods—observing and analyzing numerous transactions involving similar assets—are not available.

Various methods have been suggested to overcome the challenge of a lack of data due to thin markets. A recommended approach for real estate assets is the six-step market analysis,⁴ which identifies components that would underlie a functioning market if there were one. It is built on the concept of supply and demand, and it provides important guidance for navigating thin markets. Other approaches that are more common in business valuation involve proxy methods. For example, information on private transactions is not nearly as available and detailed as that for public transactions, so public “guideline companies” within the same industry can be analyzed and their value indications applied to the subject company. Public partnerships trading on the secondary market provide data for measuring discounts from net asset value, and studies of restricted stock trading⁵ provide market indications of discounts for lack of marketability.

Exhibit 2 Levels of Value with Income Approach



3. This article is only concerned with the second level of value. While it makes references to facts related to the first level (the real estate and the holding entity) that affect the discount/yield premium, it does not concern valuation of the real estate itself. The nonmarketable level of value is outside the scope of the article, although using the income approach and yields makes analyzing the discount for lack of marketability simpler and very persuasive. Additional comments on this marketability are included toward the end of the article.

4. Appraisal Institute, *The Appraisal of Real Estate*, 14th ed. (Chicago: Appraisal Institute, 2013), 301.

5. Restricted stock studies involve pairs, with one being privately traded and the other being exchange traded. The private trades are almost always made at a discount to their publicly traded and otherwise identical shares, and these discounts represent impaired marketability.

If any of these indirect methods is to be understandable and effective, the appraiser must demonstrate that the data are relevant and meaningful for the interest being valued. This is made more complicated for real estate appraisers valuing interests in real estate partnerships, because analyzing proxy transactions is largely within the domain of business valuation.⁶ A partnership is in the business of holding real estate, which requires a multidisciplinary approach.

Attempts to adapt and refine these valuation methods have included examining public limited partnership transactions using regression methods,⁷ developing yield analysis for application to tiered entities,⁸ and developing marketability discounts.⁹ Yield proxies provide a way to use the income approach to value lack of control—the second step of Exhibit 2—and are key to appraising interests in real estate partnerships, given the thin market for such interests.

Investments and Discounted Future Returns

Any financial investment is fundamentally about yield. Even when we have other indications of value, such as cost per square foot or discount from net asset value (NAV),¹⁰ yields are still material. *Discounted future returns* or *yield capitalization* methods,¹¹ and their discounted cash flow (DCF) models, are used in real estate appraisal most often for complex institutional-type properties. They also can provide useful insights and accommodate subject-specific cir-

cumstances as well or better than other methods.

All valuation methods require that the appraiser make comparisons between market data and the specific facts and circumstances of the subject. The more connections the appraiser can make, the more credible their valuations. Since yields are the universal basis for comparing investments of different types, they are helpful for comparing proxy market data to the subject. The approach detailed in this article will demonstrate that market observations in the form of yield (discount)¹² rates at the entity/asset level and yield premiums at the minority and non-marketable levels of value provide powerful entity-specific linkages to the subject real estate, partnership, and subject interest.

Yield Rate Buildup

A DCF model requires a market-derived yield rate. Such a yield rate reflects the total risk faced by the investor and can be built-up to reflect the assemblage of risks inherent in its noncontrolling interest position.

A sizable portion of the risk present for any real estate investment is the fee interest in the real estate itself. The fee owner controls the property directly and has the right to sell, lease, occupy, mortgage, or give the property away.¹³ The owner can develop or redevelop as he or she wishes, subject to only certain governmental powers¹⁴

6. It is made more complicated for business appraisers, too, because many of the important facts lie in the real estate domain.

7. Dennis A. Webb, "Minority Interest Discounts: A Quantitative Approach for Real Estate Limited Partnerships," *The Appraisal Journal* (April 1999): 174–182.

8. Dennis A. Webb and Lari B. Masten, "A Methodology for Valuing Tiered Entities," *Journal of Business Valuation and Economic Loss Analysis*, Berkeley Electronic Press (January 2006). Tiered entities involve interests in entities that hold interests in other entities or other types of undivided interests in real estate.

9. Dennis A. Webb, "Bridging the Gap: Marketability Discounts for Real Estate Interests," *The Appraisal Journal* (January 2001): 95–111. Much of the inspiration for this type of analysis is adapted from Mercer's work in Z. Christopher Mercer, *Quantifying Marketability Discounts* (Memphis, TN: Peabody Publishing, 1997).

10. Net asset value is calculated, for the purpose of partnership valuation, as the fair market value of the entity's assets (real estate, other assets, accounts receivable and the like), less the fair market of its liabilities (security deposits, mortgage and other loans and other liabilities). Net asset value is also termed "owners' equity."

11. *The Appraisal of Real Estate*, 14th ed., 509.

12. Discount rate and yield rate are interchangeable. The latter is used for this discussion, because the word "discount" is typically used throughout a report with respect to valuation discounts for lack of control and lack of marketability. Mixing the two usually causes confusion. See, *The Appraisal of Real Estate*, 14th ed., 509.

13. *The Appraisal of Real Estate*, 14th ed., 5.

14. *The Appraisal of Real Estate*, 14th ed., 5–6. A fee simple interest is subject to the "four powers": governmental powers of taxation, eminent domain, police power (zoning) and escheat. A leased fee interest is subject to the same powers plus rights allocated under terms of a lease.

and to market demands. Methods of developing yield/discount rates for the fee position are well known to real estate appraisers.¹⁵

This real estate rate is applicable for the fee interest, but it does not include leverage or any of the other attributes of the entity that holds the property. Such an asset-level rate is measured, inclusive of debt service and any other entity cash flows and costs, as the *internal rate of return* (IRR).¹⁶ Additional risks for lack of control and lack of marketability require a buildup of applicable rates, beginning with this asset-level IRR.

These additional risks for loss of control and marketability, faced by any holder of a noncontrolling partnership interest, are mirrored in the public securities markets. For example, a typical shareholder in a public company (operating company or asset-holding company) has substantially no control. Since “control shares are normally more valuable than minority shares because they contain a bundle of rights that minority shares do not enjoy,”¹⁷ a greater return should be required for any minority-level interest. This difference can be readily observed on the financial pages when mergers and acquisitions are reported. The price per share paid by the acquiring party, who will have control after the transaction, is typically greater than its trading price. This price premium means that the acquirer requires a *lower* return than the public market, largely because of its greater control.

Another useful way of thinking about this is that the greater return demanded by the minority shareholder is represented by a yield premium for impaired control, in addition to the asset-level return. Minority shareholders having rights further restricted by an inability to exit the investment (at least for a time), again requires an increase the yield for lack of marketability (the nonmarketable level in Exhibit 1).

The merger example above shows an inverse relationship between yield and price; thus, NAV discounts and yield premiums are two sides of the same coin. The market’s requirement for an increased return means that the present value of cash flows must be reduced. Increasing the required yield thus leads to a present value that is effectively discounted from the interest’s share of net asset value. This relationship will be demonstrated later in the “DCF and Build-Up Case Example.”

Control Risk Premiums

Market data for the minority level of value are obtained primarily from two sources: (1) publicly registered real estate limited partnership (RELP) units traded in the secondary market, and (2) REIT shares traded on exchanges. RELP discount studies published by Partnership Profiles have been used to support discounts from net asset value¹⁸ for lack of control since the early 1990s.¹⁹

Market-observed yields for RELPs and REITs reflect both the real estate and its holding entity. These yields are difficult to apply directly to the subject entity because of differences in leverage, dividend/distribution rates, and growth. However, this application would be made easier if clean yield premiums could be extracted from these market data by comparing RELP or REIT or (minority-level) yields to real estate asset-level yields. The comparison being sought is the same as the difference between the asset- and minority-levels of value: the difference between returns required by fee-holding real estate investors and returns demanded by minority shareholders in the RELP or REIT markets. The difference between the fee and noncontrolling yields would then be the control risk premium. The important question, then, is whether it is

15. *The Appraisal of Real Estate*, 14th ed., 513.

16. *The Appraisal of Real Estate*, 14th ed., 532.

17. See Pratt, *Valuing a Business*, 5th ed., 385.

18. Net asset value is germane for privately held partnership interest valuation, and should be germane for RELP interest pricing, since both types of entities have a limited life (see Partnership Profiles Rate of Return Study), and eventual access to their pro rata share of NAV would logically be considered by purchasers of interests.

19. Partnership Profiles, *Partnership Re-Sale Discount Study*, published annually (Dallas: Partnership Profiles). The Partnership Profiles data and analyses are familiar to appraisers working in this area. The data can be applied directly as long as specific comparable elements are considered (annual dividend rates, leverage, timing of the interest-holder’s expectation of an exit from the partnership with its pro rata share of NAV, and the marketability impairment inherent in secondary market trades; all are addressed by the publisher).

possible to determine a reasonably consistent difference between the two yields that represents this lack of control.

REIT trading has been extensively discussed,²⁰ and REIT data are ideal for this analysis because the sector is huge, and most REIT shares are exchange traded. The data are published and analyzed by Nareit²¹ and are readily available. REIT shares exhibit significant price volatility, and it has not been clear how to extract needed risk premiums from REITs.²² If control is a systematic variable, then it should show itself if observations are used over a long enough period.

Comparing REIT and Real Estate Returns

Data are published by Nareit for 224 REITs, 192 of which are traded on the NYSE. The equity market capitalization²³ is \$957 billion, and the REITs together hold \$1.8 trillion of commercial real estate assets.²⁴ Nareit also publishes an Equity REIT Index,²⁵ which is often used to demonstrate long-term equity returns.²⁶

Real estate market survey data are also available from PwC.²⁷ The PwC data concern primarily institutional real estate,²⁸ and with its predecessor, the Korpacz Real Estate Investor Survey, has been published in a consistent manner since 1988. The PwC Real Estate Investor Survey (PwC Survey) reports on the principal investment property types, which generally match property types held by REITs. The PwC Survey also computes a broad yield measure,

Exhibit 3 REIT Yields All Sectors

Period Ending	Rolling Average Returns			
	15 Yrs.	12 Yrs.	10 Yrs.	7 Yrs.
2005				21.8%
2006				26.5%
2007				19.8%
2008			15.8%	14.5%
2009			17.9%	15.8%
2010		17.6%	17.5%	14.6%
2011		18.0%	16.2%	11.3%
2012		16.8%	16.8%	12.2%
2013	16.2%	15.6%	13.4%	7.9%
2014	17.9%	16.7%	13.2%	13.7%
2015	16.0%	13.9%	12.3%	16.8%
2016	15.8%	12.8%	10.5%	16.0%
Average	16.5%	15.9%	14.8%	15.9%
C _v	0.05	0.11	0.16	0.30

Source: Total return data published by Nareit, www.reit.com

the PwC yield indicator (PYI).²⁹ The PwC Survey is used by commercial real estate professionals as an authoritative standard for institutional property returns.

REIT data for this analysis were taken from Nareit's REITWatch publications for January

20. Partnership Profiles, 2016 Rate of Return Study—Publicly Held Real Estate Limited Partnerships and Real Estate Investment Trusts (Dallas: Partnership Profiles), 11–16. This study presents synthetic yield rates, which can also be used to develop control impairment premiums, in a manner similar to the one described in this article.

21. Nareit, REIT Industry Data, <http://bit.ly/2lqcUet>.

22. Yield differentials can also be extracted from RELP data, but REITs and RELPs are substantially different. There is no liquidation scenario for REITs, and while NAV might be an analytical benchmark, yields clearly drive pricing. This is probably why REITs have not been used to generate price-to-NAV discounts directly.

23. Nareit, REITWatch (January 2017), <http://bit.ly/2t5clbD>. Equity market capitalization is defined as "Price on the date indicated times the number of common shares outstanding."

24. Nareit, REITWatch (January 2017).

25. Annual returns for the FTSE Nareit US Real Estate Index Series (1972–2015). This index includes all equity REITs not designated as timber REITs. REITs hold assets in the residential, industrial/office, retail, lodging/resorts, health care and self-storage sectors, and some are diversified or are hybrids. Sixty percent are in the residential, industrial/office, and retail sectors.

26. Equity returns are measured as total returns to equity. Nareit calculates total returns by taking the closing price for the current period, adding any dividends with an ex-dividend date in that period then subtracting the closing price for the previous period and dividing the result by the closing price of the prior period (see Nareit, REITWatch).

27. See PwC LLC, PwC Real Estate Investor Survey, <https://pwc.to/2JLxLoC>.

28. The PwC Survey defines *institutional-grade real estate* as, "Real property investments that are sought out by institutional buyers and have the capacity to meet generally prevalent institutional investment criteria."

29. The PwC yield indicator is defined as, "A composite IRR average of the surveyed markets excluding lodging and development land."

2000–2017 (calendar years 1999–2016). Data fields allow for segmenting by sector (retail, residential and industrial/office property types) and by leverage ratios. REIT yields are shown in Exhibit 3 and compared with PwC in Exhibits 4–6.

The REIT data are actual returns realized for the preceding year, and the PwC data are market-expected (going-in) returns determined at the end of the same year. While there is certainly some anticipation in the REIT returns, the match between the Nareit and PwC data is not exact. A better match would be obtained by looking at multiple periods. Analysis across at least an entire real estate cycle³⁰ should smooth out nonsystematic (short-term) variations and heighten the more fundamental systematic variations. As expected, analysis of longer periods results in less variation in returns, as shown in Exhibit 3. Each column shows the maximum number of observations that can be extracted from the 1999–2016 data. The coefficient of variance (CV)³¹ for the four 15-year rolling average periods is much lower than for the shorter periods, as would be expected.³² Interestingly, the Exhibit 3 yields look very much like published returns for RELPs.³³

Similar results are observed in the PwC data, although the variations are not as great.³⁴ To find the long-term difference between the two data series, the 15-year rolling return analysis is used, which approximates two real estate cycles. The 15-year rolling average of returns limits the analysis to the four 15-year periods ending in the years 2013–2016.³⁵ Exhibit 4 shows 15-year rolling average returns for equity REITs, the PYI, and the implied premium yield, where $Premium = REIT - PYI$.

The most recent of these periods is 2002–2016. One issue that frequently arises with market obser-

Exhibit 4 Yield Premiums All Sectors

Period Ending	15-Yr. Rolling Average Returns		
	REIT	PYI	Premium
2013	16.2%	9.8%	6.4%
2014	17.9%	9.6%	8.3%
2015	16.0%	9.4%	6.6%
2016	15.8%	9.1%	6.7%
Average	16.5%	9.5%	7.0%
C _v	0.06	0.03	0.11

Sources: Total return data published by Nareit, www.reit.com. Yield data published by PwC, LLC, www.pwc.com

variations—and with restricted stocks and RELP trading in particular—is whether the observations need to be contemporaneous with the date of value. It may be intuitive to think so, but the facts argue otherwise. For restricted stock, longer holding periods are represented in older data, which make older studies more relevant than newer ones. For public limited partnership trades, longer expected holding periods of buyers and sellers are also better represented in the older data.³⁶

Further, these data contribute a relatively small control premium. Since the largest component of the yield rate buildup is the subject entity's current asset-level yield (IRR) at the date of value, current conditions (risk, growth and leverage and others) are already well represented at the asset level (see the case example, below). The control yield premium, by contrast, is a broad measure selected over two real estate cycles, and it is remarkably insensitive to the date of value.

30. The real estate value cycles sections of the PwC Survey were examined for 1999 through 2017; it was determined that during that period there were two cycles of about seven years each.

31. $CV = \text{Standard Deviation}/\text{Mean}$. The CV is a measure of data dispersion, and a smaller CV indicates that the data is more tightly grouped.

32. The variation is greater in part because there are more short periods. Calculating CV over the latest four periods (so all columns have the same number of periods) shows a similar variation, with the 7-year CV reduced from 0.30 to 0.26.

33. See Partnership Profiles, 2016 Rate of Return Study. RELP returns published by Partnership Profiles are reasonably similar.

34. CVs for the PwC data are 0.03 for the 15-year period, increasing to 0.08 for the 7-year period.

35. The detailed analysis is limited by the availability of published REITWatch data, which begins in 1999. A longer series would be nice, but long-term data show pretty much the same yields. The 15-year rolling return analysis of annual returns for the FTSE Nareit US Real Estate Index Series, beginning in 1972, is 13.4%, and for 2002–2016 is 12.5%. The index is constituted differently than the REITWatch data shown in the tables, so yields are lower, but yields are still quite consistent over time.

36. Dennis A. Webb, *Valuing Undivided Interests in Real Property—Partnerships and Cotenancies* (Chicago: Appraisal Institute, 2004), 85.

Capital Structure Adjustments

Capital structures (essentially leverage) usually affect returns, so the effects of leverage should be removed from the extracted yield premium to the greatest extent possible. This results in a pure, unlevered equity premium that facilitates comparison with the PwC real estate data, whose return measures are unlevered. The analysis for the subject entity will separately consider the subject capital structure/leverage, as shown in the case example.

Leverage is used by REIT managers for many reasons, including opportunistic asset acquisition and increasing equity returns. Leverage can be a double-edged sword, though, because greater leverage creates vulnerabilities that can decimate performance during economic downturns as happened in 2007 and 2008.

Fortunately, the data includes large numbers of REITs that are not heavily leveraged, as close to two-thirds are at less than 50%.³⁷ Leverage is popular and useful, though, and only 12% of REITs are leveraged less than 30%. Accordingly, the REIT data is selected for its correlation with leverage below 50% (this group averages 37%), which is reasonably considered to be low-leverage.³⁸ Remaining leverage can be removed using a weighted average cost of capital (WACC)³⁹ calculation, adjusting the returns from Exhibit 4. The unlevered yield premiums are then recalculated as unlevered REIT invested capital yields less the PwC real estate rates. The unlevered (WACC) rates are calculated as follows:

$$WACC = Y_E \times (1 - D) + Y_D \times (1 - t) \times D \quad (1)$$

where:

Y_E = the equity yield,
 Y_D = the debt yield (the interest rate),
 D = the percentage of debt, and
 t = effective tax shield.⁴⁰

Exhibit 5 Unlevered Yield Premiums All Sectors

Period Ending	REIT/Equity	REIT/WACC	PYI	Unlevered Premium
2013	16.2%	12.0%	9.8%	2.2%
2014	17.9%	13.1%	9.6%	3.5%
2015	16.0%	11.8%	9.4%	2.4%
2016	15.8%	11.7%	9.1%	2.6%
Average	16.5%	12.2%	9.5%	2.7%
C_v		0.04	0.03	0.18

Y_E is shown for each period in Exhibit 5, Unlevered Yield Premiums All Sectors, Y_D is 4.8%,⁴¹ and D is 0.37 from above. Substituting and recalculating the premium as in Exhibit 5, results in the difference between the WACC and the PYI shown in Exhibit 5 for each period.

The weighted average (WACC) yield premium for the same assemblage of properties and subsectors is 2.7%, based on data from 1999–2016. This premium applies for REITs holding institutional properties. Most private LPs and LLCs need further adjustment to the premiums shown.

Entity-Specific Adjustments

Further adjustments might take into account size, management capability, asset quality, and other characteristics of REITs that may or may not be present in privately held subject partnerships. A risk premium for company size is typically observed in trading of operating company shares, but no such premium is observed in the REIT data. The same database that shows the leverage variations discussed above, shows no meaningful size/yield correlation, even though market capitalization varies from \$5 million to more than \$70 billion, with a median of \$1.4 billion.

37. Debt ratio equals total debt divided by total market capitalization.

38. Selecting for limited-leverage data is similar to commonly used techniques for isolating debt, such as Partnership Profiles parsing discount study data into “low or no leverage” and “high leverage” categories.

39. WACC is similar to band of investment analysis; see *The Appraisal of Real Estate*, 14th ed., 495.

40. Since REITs are almost entirely tax pass-through entities, the effective tax shield at the entity level is very low, usually less than 0.3%. We have not analyzed the effect of the tax shield, since in these ranges it is negligible.

41. Duff & Phelps, *US Industry Cost of Capital Valuation Handbook* (Duff & Phelps, 2016), SIC 6798 Real Estate Investment Trusts, median cost of debt.

Management and Asset Quality

Two principal differences between most REITs and privately held partnerships are (1) management capability and (2) type of real estate held. Some privately held partnerships have professional management and hold institutional-grade real estate. Such professional management should offer some protections for minority partners, leading to their lower premiums. However, many privately held partnerships are not managed by professionals. For these, a small premium should be added based on the valuer's assessment of management. It would, then, be helpful to find whether yield premiums are really affected by demands placed on management.

One way to isolate any effects from riskier management circumstances may be to observe yields for sectors having broadly different management challenges. Segmenting the data into only residential, industrial/office and retail sectors, then comparing this to PwC Survey yields for the corresponding sectors, results in unlevered control premiums close to the 2.7% average above. Residential is the closest, at 2.4%, and is shown as an example in Exhibit 6. The case study that follows uses the 2.4%. Industrial/office is lower, at 1.9%, and retail is substantially greater, at 4.2%. Retail has been a tough sector over the period, with bricks and mortar stores facing potentially mortal challenges from online sellers and enclosed malls looking for adaptive reuse.

The 1.5% spread between retail and the overall average, or maybe even the 2.3% spread between retail and industrial/office, suggests that market pricing for REITs holding retail properties with greater management demands increases the

yield premium for lack of control. (Any real estate differences were washed out when the PwC returns were subtracted.)

The idea of an additional premium related to perceptions of management and property quality (which increase control risk) appears to be supported by the data and should be considered by the appraiser.

Modified Control

Tenancy-in-common interests, general partnership interests, limited partners with swing vote potential, and other situations can have more control than the REIT shares from which control premiums are developed. In fact, interests with any meaningful voting right arguably confer greater control than held by REIT equity holders. If the yield premium developed from REIT and PwC data represent essentially no control, then a spectrum of increasing control can be incorporated in the appraiser's analysis by reducing the noncontrolling yield premium.

DCF and Build-Up Case Example

A case study example can be used to illustrate application of the concepts related to minority interests and valuation. The case study example concerns an LLC that was formed five years ago to receive distributions from a trust. One of the five members now wants to exit, and the agreement provides that the others must buy her out at her interest's fair market value. (Her interest is not a swing vote; otherwise, the distribution of ownership is not important.)

Asset Level of Value

Balance sheet/net asset value. Entity and asset-level cash flows are shown in the top portion of Exhibit 7. The real estate is an apartment building that has a market value of \$1,000,000 (for convenience of presentation).

The LLC has a small amount of working capital and other assets, and other liabilities (primarily tenant security deposits). It also has a mortgage that was taken out a few years ago. The face amount of the note is \$440,000, it amortizes over 30 years, has a term of 15 years, and bears interest at 5.25%. The current amount owing is \$400,000.

Exhibit 6 Unlevered Yield Premiums Residential Sector

Period Ending	REIT/Equity	REIT/WACC	PYI	Unlevered Premium
2013	14.4%	10.8%	9.6%	1.2%
2014	16.9%	12.4%	9.3%	3.1%
2015	15.6%	11.6%	9.1%	2.5%
2016	15.4%	11.5%	8.8%	2.7%
Average	15.6%	11.6%	9.2%	2.4%
C_v		0.08	0.03	0.14

Exhibit 7 Discounted Cash Flow—Entity and Minority Levels

			Year										
			0	1	2	3	4	5	6	7	8	9	10
Entity/asset-level													
<i>Balance Sheet</i>													
Real estate	A _R		1,000,000	1,025,000	1,050,625	1,076,891	1,103,813	1,131,408	1,159,693	1,188,686	1,218,403	1,248,863	1,280,085
Working capital	A _W	2.0%	20,000	20,500	21,013	21,538	22,076	22,628	23,194	23,774	24,368	24,977	25,602
Other assets	A _O	0.1%	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Total assets	A _T		1,021,000	1,046,500	1,072,638	1,099,428	1,126,889	1,155,036	1,183,887	1,213,459	1,243,771	1,274,840	1,306,686
Mortgage balance	L _M	40%	-400,000	-391,844	-383,259	-374,224	-364,714	-354,705	-344,171	-333,084	-321,414	-309,132	-296,205
Other liabilities	L _O	0.5%	-5,000	-5,000	-5,000	-5,000	-5,000	-5,000	-5,000	-5,000	-5,000	-5,000	-5,000
Net asset value	NAV		616,000	649,656	684,378	720,205	757,175	795,331	834,716	875,376	917,357	960,708	1,005,481
Cap rate	R _{RP}		5.00%										
<i>Cash flow</i>													
NOI	NOI		50,000	50,000	51,250	52,531	53,845	55,191	56,570	57,985	59,434	60,920	62,443
Working capital				-500	-513	-525	-538	-552	-566	-580	-594	-609	-624
LLC expenses		2.5%		-250	-256	-263	-269	-276	-283	-290	-297	-305	-312
Debt service				-29,156	-29,156	-29,156	-29,156	-29,156	-29,156	-29,156	-29,156	-29,156	-29,156
Cash flow	Dist.	3.3%		20,094	21,325	22,587	23,881	25,206	26,565	27,959	29,386	30,850	32,350
Terminal value													928,676
Total cash flow			-616,000	20,094	21,325	22,587	23,881	25,206	26,565	27,959	29,386	30,850	961,026
IRR (Yield)	Y _A	7.7%											
Value growth	G _{VA}	4.2%	616,000										928,676
CF growth	G _{CF}	4.9%		20,094									32,350
Minority level													
Total cash flow				20,094	21,325	22,587	23,881	25,206	26,565	27,959	29,386	30,850	961,026
Minority yield	Y _C	11.9%											
Minority value			-443,891	17,964	17,045	16,140	15,256	14,397	13,565	12,764	11,994	11,257	313,509
Effective discount	D _C	27.9%											
<i>Yield & growth analysis</i>													
Minority yield	Y _C	11.9%											
Value growth	G _{VM}	7.7%	443,891										928,676
Cash flow	CF _M	4.5%											
CF growth	G _{CF}	4.9%		20,094									313,509

Real estate operations and net operating income. The real estate appraiser used a 5.0% overall (cap) rate to capitalize the pro forma net operating income (NOI) into the \$1,000,000 value conclusion. (The appraiser's pro forma operating statement, which includes rental and other income less a vacancy and collection loss, and less other typical market operating expenses, is not shown in Exhibit 7, only the resulting NOI.)⁴²

LLC adjustments for cash flow available for distribution. Working capital is necessarily increased with NOI to cover capital demands of growing operations. LLC expenses include entity-level taxes, contributions to local charities, meals and entertainment, and auto and other expenses that are charged to the LLC but are not part of real estate operations. These items are forecast to remain at their current 2.5% of NOI. Debt service is also deducted, to get cash flow available for distribution to members. The effective dividend (distribution) rate on NAV, in the pro forma period, is 3.3%, calculated as the year (n+1) cash flow divided by the NAV for ending year n.

Terminal value (reversion). The DCF analysis in Exhibit 7 shows the balance sheet projected over 10 years. The apartment market is currently stable, and the market value of the property is forecast to grow with inflation, at 2.5% annually. Working capital⁴³ grows in proportion to revenues, and the other assets and liabilities remain constant for the period.⁴⁴ The mortgage balance declines over the period based on the loan's amortization schedule. The LLC's net asset value at the date of value is \$616,000.

Balance sheet items are projected to terminal year 10, and a sale of the underlying real estate is

shown at the end of that year. Thus, the LLC members realize their pro rata share of NAV at that time. The real estate is shown as sold at its projected value, less the cost of sale, estimated at 6%.⁴⁵

The 10-year period used in the example is for convenience, since most private partnerships have long expected holding periods. If a shorter hold is expected, a shorter DCF may be used.

Entity/asset-level yield and growth analysis. Yields, growth, and minority-level calculations are based on cash flows, as shown in the lower portion of Exhibit 7. The yield at this level of value is calculated as the IRR of NAV in year 0 and cash flows realized for the remaining 10 years, with the reversionary amount added in the last year. The concluded equity yield rate (Y_A) is 7.7%. In this case, the relatively low rate is a result of a high-priced (low capital rate) apartment market and relatively low expected growth. The concluded 10-year annual value growth rate (G_{VA}) is 4.2%, which is increased by the equity buildup, but then reduced by the costs of sale. Cash flow growth (G_{CF}) is 4.9%.

Minority Level of Value

Yield Premium for Lack of Control

The base yield premium (Y_S), taken from Exhibit 6, averages 2.4%. The premium needs to be adjusted further because management is average and operates only a few similar apartment projects. Management pays itself a market-rate management fee and has a good operating history with its properties. However, management is not nearly as sophisticated in general ability or in taking advantage of market conditions as REIT manag-

42. The interaction with the real estate appraisal becomes important when projecting NOI for entity valuation but is mostly outside the scope of this article. Adjustments to the real estate appraisal's proforma (and NOI coming into the partnership) may be needed if "inside" (partnership) operating conditions are different than "outside" (real estate market) operating conditions. For example, the market might charge a management fee of 4% of effective gross income, but the manager controlled by the general partner (over which the minority has no control) might charge 6%. The difference would have nothing to do with the market value of the real estate but would reduce the NOI coming into the partnership. Additionally, unless the real estate appraisal includes its own DCF, the entity appraiser will need some real estate assumptions (stated in this section) regarding income and value growth over the period. If the entity appraiser is not a real estate appraiser, then state licensing issues might be involved. As with all multidisciplinary assignments, it is important for both appraisers to work together.

43. Current assets less current liabilities.

44. Working capital is increased because revenue growth cannot be sustained without growing working capital. The increasing amounts reduce cash flow. Other assets and liabilities are minor, and are held constant for purposes of this example. They may or may not change over time, which should be considered by the appraiser.

45. The terminal value is calculated as the terminal net asset value less cost of sales, as follows: Terminal value = \$1,005,481 - (\$1,280,085 × 0.06) = \$928,676

ers. A “specific company” premium (A_C) of 1.8% is added for these two reasons, based on a reconciliation of the sector yield differences that were discussed earlier. The yield rate (Y_C) at the minority-marketable level of value is then:

$$Y_C = Y_A + Y_S + A_C \quad (2)$$

$$Y_C = 7.7\% + 2.4\% + 1.8\% = 11.9\%$$

The present value of future cash flows is \$443,891. The reduction in NAV from \$616,000 implies a discount (D_C) from NAV, calculated as:

$$D_C = 1 - NAV_{MINORITY}/NAV_{ASSET} \quad (3)$$

$$D_C = 1 - 443,891/616,000 = 27.9\% \quad 46$$

Reconciliation and Conclusions

If other methods are used to analyze control impairment, as shown for minority-level value on the left side of Exhibit 2 (for example, the Partnership Profiles discount study), then its discount indication could be reconciled with D_C . The reconciled discount, applied to the partnership’s net asset value, results in its minority level value. Of course, the minority value of the partnership as a whole could alternatively be concluded for each method (see equation 3), and the concluded values reconciled. In either case, the

next step would be to discount further for the subject interest’s lack of marketability (the non-marketable level of value in Exhibit 2).⁴⁷

Conclusions

Appraisers valuing undivided interests in real estate, particularly limited partnership or LLC interests, face challenges in applying discounts for lack of control. This is largely because there are few opportunities to apply the conventional NAV method specific to a subject partnership.

This article’s DCF model is offered as an additional and independent income approach for analyzing lack of control. It uses a yield premium based on REIT trading and real estate rate survey data. The resulting fundamental analysis is familiar and able to incorporate subject-specific characteristics, such as growth and leverage, more easily and effectively than other more commonly used methods.

Appraisals benefit from multiple approaches, particularly when they reveal distinct views of the market and use independent data sources. Adding the DCF method to the appraiser’s conventional NAV method enhances such an approach and should prove valuable to qualified appraisers that wish to bolster their partnership interest appraisals. The result is a well-supported, logical, and persuasive analysis.

About the Author

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46. There is not a minority-marketable value for a limited partner interest because this is an intermediate value only for a noncontrolling interest. The attributes of the limited partner interest beyond its lack of control are addressed as the third Level of Value (Exhibit 2). It is possible, however, to calculate the limited partner’s pro rata share of the minority-marketable value for a (say) 20% interest, as follows: Pro rata minority-marketable value = \$443,891 × 0.20 = \$88,778

This is the same thing as applying both the discount for lack of control and the partner’s interest to net asset value, as follows: Pro rata minority-marketable value = \$616,000 × (1 – 0.279) × 0.20 = \$88,778

47. Although this article does not address the discount for lack of marketability, it is worth noting that return and growth measures are increased, because NAV is now discounted, which increases both value growth and cash flow. The value growth rate (G_{VM}) is increased from 4.2% at the equity/asset level to 7.7%. The effective distribution rate on NAV (CF_M) is increased from 3.3% to 4.5%. Cash flow growth (G_{CF}) is unchanged at 4.9%, as distributions are the same at all levels of value. Methods for determining lack of marketability must take into account these increased rates. Yields and growth can sometimes get quite high for real estate entities, reducing the discount for lack of marketability.

Additional Resources

Suggested by the Y. T. and Louise Lee Lum Library

Appraisal Institute Y. T. and Louise Lee Lum Library [Login required]

- Information Files—Business valuation
- Information Files—Economic Data
- PwC Real Estate Investor Survey, rates 1996–current

Business Valuation Resources

<https://www.bvresources.com/>