

NAREC CONFERENCE 2024

**FAIR VALUE: CONSIDERATIONS WITH LIMITED
TRANSACTION ACTIVITY**

Andrew R. Lines, MAI, CRE

December 2024



- 80+ full-time professionals (US + International) who dedicate their efforts exclusively to independent valuation & related consulting services.
- 30+FTEs in Real Estate
- Deep firm expertise in many asset types and industries.
- Practice is national and organized by service line and specialty area.

Our professionals maintain the following designations:

- ABV (Accredited in Business Valuations)
- ASA (Accredited Senior Appraiser)
- CBA (Certified Business Analyst)
- CFA (Chartered Financial Analyst)
- CPA (Certified Public Accountant)
- CRA (Certified Review Appraiser)
- CRE (Counselors of Real Estate)
- CVA (Certified Valuation Analyst)
- FRICS/MRICS (Fellow of the Royal Institution of Chartered Surveyors)
- FRM (Financial Risk Manager)
- MAI (Appraisal Institute)





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Andrew R. Lines, MAI, CRE is a Principal for CohnReznick Advisory's Valuation Advisory Services practice who is based in the Chicago office and has been a CohnReznick employee for over thirteen years. Andrew has been involved in the real estate business for more than 22 years and has performed valuations on all real estate classes (industrial, commercial, residential, development land). Special-use valuations include affordable housing, student housing, senior housing, cannabis facilities (indoor/outdoor, processing and dispensaries), landfills, waste transfer stations, golf courses, marinas, hospitals, universities, telecommunications facilities, data centers, self-storage facilities, racetracks, and corridors. Impact Study Reports have also been generated for zoning hearings related to the development of solar facilities, wind powered facilities, landfills, big box retail, waste transfer stations, private mental health clinics, cannabis dispensaries and day care centers. He is also experienced in the valuation of leasehold, leased fee, and partial interests, as well as purchase price allocations (GAAP, IFRS and IRC 1060) for financial reporting.

Valuations have been completed nationwide for a variety of assignments including mortgage financing, litigation, tax appeal, estate gifts, asset management, workouts, and restructuring, as well as valuation for financial reporting including purchase price allocations (ASC 805), impairment studies, and appraisals for investment company guidelines and REIS standards. Andrew has qualified as an expert witness, providing testimony for eminent domain cases in the states of IL, IN, DC, VA and MD, and for zoning hearings in sixteen states. Andrew has also performed appraisal review assignments for accounting purposes (audit support), asset management, litigation and as an evaluator for a large Midwest regional bank.

Education

- Syracuse University: Bachelor of Fine Arts

Professional Affiliations

- National Council of Housing Market Analysts (NCHMA)
- International Real Estate Management (IREM)
- American Seniors Housing Association (ASHA)

FAIR VALUE PRIMER



- “ASC 820-10-20 defines the fair value as following:
“...the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.”
 - Conservatism is not an attribute of fair value
 - Requires a market participant view

Fair Value

- Term used for **accounting** (US GAAP and IFRS),
- Most advantageous , market/ principal market
- Highest and best use,
- Level 1-3 inputs.

Market Value

- Term used for RE **transactions**
- Buyer and seller are well informed, acting in best interest,
- Exposure time,
- Property unaffected by special or creative financing and sale conditions.

*Appraisals prepared for a different purpose may lead to an incorrect conclusion for another purpose
ie – Financial Reporting vs. Tax Appeal; IRC vs. GAAP Allocations; Appraisals vs. BPOs*



- ASC 820-10-20 defines **3 valuation approaches** which can be applied by using **different valuation techniques**.
 - **Market Approach** – based on information from market transactions
A valuation technique that uses prices and other relevant information generated by market transactions involving identical or comparable (that is, similar) assets, liabilities, or a group of assets and liabilities, such as a business.
 - *Multiplier techniques are generally considered a function of the Market Approach*
 - **Income Approach** – based on future income
Valuation techniques that convert future amounts (for example, cash flows or income and expenses) to a single current (that is, discounted) amount. The fair value measurement is determined on the basis of the value indicated by current market expectations about those future amounts. There are two type of income approach methods: Direct Cap & Discounted Cash Flow (DCF).
 - **Direct Capitalization Method**– method used to convert a single year income expectancy into an indication of value by dividing the property’s net operating income by a capitalization rate. The direct cap rate (aka going-in cap rate or overall cap rate) represents the expected rate of return on an investment property.
 - **Discounted cash flow (DCF) Method** – method discounts the estimated property’s net operating income over a holding period (typically 10 years) inclusive of an estimated sale of the property at the end of the holding period.
 - **Cost Approach** – based on current replacement cost
A valuation technique that reflects the amount that would be required currently to replace the service capacity of an asset (often referred to as current replacement cost).



- **Key Objectives of Auditing Fair Value Measurements**– The auditor's objective is to obtain the necessary audit evidence regarding the reasonableness of accounting estimates, including fair values, that are recognized or disclosed in the financial statements, and the adequacy of financial statement disclosures regarding estimates (AU-C 540.06).
- Audit teams are required to gain an understanding and document management's process for preparing, reviewing and approving the real estate FV measurement.
 - Includes Commentary on Specialists' qualification and experience
- Identification of key inputs and assumptions utilized in the fair value estimate
 - Understand and document management's controls that address the reliability (i.e. **completeness and accuracy**) of the key inputs.
 - Asset existence, characteristics (Ownership, physical sizes, age,..)
 - Historical financials, projections, incl. contract lease terms
 - Rent rolls - important for market rent assumptions
 - Deferred maintenance
 - Mathematical accuracy of the supporting schedules
 - Review subsequent events that may impact financial statements
 - Perform walkthroughs (confirmation) of the key controls surrounding the key inputs and assumptions:
 - Cap Rate
 - Discount Rate
 - Market rent
 - Vacancy/Lease-up
 - Market rent growth rates
 - Operating expenses per unit
 - Operating expense growth rates
 - Estimated costs to complete (if property is under construction)
- Audit documentation on the reasonableness of key inputs and assumptions
 - Compare methodology and assumptions to prior year accounting
 - Prepare **Sensitivity Testing** as appropriate



Purchase Price Allocations

- Need to allocate the purchase of the property into tangible and intangible assets to put on the books in order to prepare opening balance sheet for the newly acquired entity or assuming entity needs to assume correct entries
- Doesn't include every approach
- Fee Simple Acquisitions or Leased Fee – estimate land value, building value, site improvement value, intangible value (in place lease, above/below market lease, trademarks, assumed debt, etc)
- Leasehold– estimate the above or below market value of a lease
- Retained Equity – could be complicated!
- Differences in BIZ COMBOS vs ASSET ALLOCATIONS

Annual/Quarterly Reporting (Appraisals)

- For investor reporting – could be annually, quarterly or even daily (typically NAV)
- Usually straightforward appraisals near the reporting date
- Don't need all the approaches (but can help)
- May need to reconcile debt, depending on structure
- GAAP and IFRS generally similar for RE
- PRO TIP – Get your appraiser to do the sensitivity analysis within the report!!



Summary of Purchase Price Allocation

(In whole dollars)

(a) Purchase Consideration - Retail Component

Purchase Price	\$ 12,327,434	
Transaction Costs Paid	-	
Fair Value of Purchase Consideration	<u>\$ 12,327,434</u>	<u>\$ 12,327,434</u>

Assets Acquired

	Fair Value	Percentage		Adjustment Factor (b)	Allocated Value	Estimated Remaining Economic Life
(a) Current Assets						
Unrestricted Cash	\$ -	0.00%		N/A	\$ -	N/A
Other Current Assets	-	0.00%		N/A	-	N/A
Capitalized Transaction Costs	-	0.00%		N/A	-	N/A
	<u>-</u>	<u>0.00%</u>			<u>-</u>	
Fixed Assets						
Estimated Fair Value of Land (Excluding Site Improvements)	1,660,000	13.32%	See Exhibit 9	0.9894	1,642,401	N/A
Estimated Fair Value of the Buildings	9,630,000	77.29%	See Exhibit 10	0.9894	9,527,906	44.00
Estimated Fair Value of Site Improvements	647,000	5.19%	See Exhibit 11	0.9894	640,141	11.99
Estimated Fair Value of the Tenant Improvements	135,558	1.09%	See Exhibit 16	0.9894	134,121	7.60
Subtotal: Fixed Assets	<u>12,072,558</u>	<u>96.89%</u>			<u>11,944,569</u>	
Intangible Assets						
Estimated Fair Value of In-Place Leases	508,545	4.08%	See Exhibit 17	0.9894	503,154	7.49
Estimated Fair Value of Above Market Leases	0	0.00%	See Exhibit 15	0.9894	-	0.00
Estimated Fair Value of Below Market Leases	(121,578)	-0.98%	See Exhibit 15	0.9894	(120,289)	0.00
Subtotal: Intangible Assets	<u>386,967</u>	<u>3.11%</u>			<u>382,865</u>	
Total Fair Value of Assets Acquired	<u>\$ 12,459,526</u>	<u>100.00%</u>			<u>\$ 12,327,434</u>	

Footnotes:

- (a) Based on the buyer's estimated cost of acquisition. See next exhibit for details of the transaction structure and allocation of the purchase price in this allocation. Other acquisition fees, current assets and current liabilities are separately accounted for by the purchaser outside of this allocation.
- (b) In order to reconcile to the fair value of the purchase consideration, an adjustment factor is utilized to adjust the individual fair values of the fixed and intangible assets for immaterial differences, as recognized by the AICPA.

FAIR VALUE REPORTING



(the "Company")

Fair Market Value of One Share of Common Stock (the "Interest")
As of 12/31/2023 (the "Valuation Date")

Appendix I

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(In Whole \$ - unless noted otherwise)

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Summary of Real Estate Investments		
	Asset Value	Common Size
Commercial Properties		
	\$ 15,700,000	1.74%
	18,600,000	2.06%
	5,000,000	0.55%
	23,300,000	2.58%
	11,500,000	1.27%
	93,100,000	10.30%
	300,000,000	33.20%
	4,350,000	0.48%
	SOLD N/A	
	SOLD N/A	
	20,500,000	2.27%
	15,800,000	1.75%
	4,850,000	0.54%
	128,000,000	14.15%
	4,870,000	0.54%
	1,380,000	0.15%
	3,500,000	0.39%
	2,280,000	0.25%
	4,710,000	0.52%
	15,500,000	1.72%
	22,300,000	2.47%
	423,000	0.05%
	1,830,000	0.20%
	41,700,000	4.61%
	14,300,000	1.58%
	15,500,000	1.72%
	36,500,000	4.04%
	7,850,000	0.87%
	5,000,000	0.55%
	12,800,000	1.42%
Subtotal	\$ 831,143,000	91.97%
Billboards		
860 Faces	\$ 54,000,000	5.98%
Entertainment Golf		
	2,160,000	0.24%
	4,200,000	0.46%
	11,990,000	1.33%
	SOLD N/A	
	1,250,000	0.14%
	360,000	0.04%
Subtotal	\$ 19,960,000	2.21%
Total Commercial Real Estate	\$ 905,103,000	100.15%
Timberland		
Combined Value	\$43,660,363	4.83%
	(Rounded) \$ 43,660,000	4.83%
Commercial Real Estate Land Holdings		
Combined Value	\$301,799,230	33.40%
	(Rounded) \$ 301,800,000	33.40%
Subtotal Land	\$ 345,460,000	38.23%
(a) Discount for Bulk Land Holdings, Residual/Sub-Market Construction	35% \$ (120,911,000)	-13.38%
Total Land	\$ 224,549,000	24.85%
Total Real Estate Investments	\$ 1,129,652,000	125.00%
(b) Applicable Portfolio Market Discount	20% \$ (225,930,400)	-25.00%
Estimated Market Value of the Real Estate	(c) \$ 903,721,600	



CONCLUSIONS

Our valuations for each portfolio via the Income Capitalization Approach were as follows:

ATL 2 SF LLC - 477 Units							
Actual	Purchase Price	Capital Expenditures	Other Acquisition Costs			Total Cost Basis/Value	Per Unit
	\$50,680,621	\$7,158,212	\$2,318,838			\$60,157,671	\$126,117
Direct Capitalization		Projected Income (12 mo)	Cap	Term	Discount		
		\$4,349,239	5.50%	6.25%	7.00%	\$79,465,073	\$166,593
DCF - 3 Year						\$72,782,641	\$152,584
DCF - 5 Year						\$75,703,627	\$158,708
Weighted Conclusion (Rounded)						\$76,000,000	\$159,329

DAL 2 SF LLC - 208 Units							
Actual	Purchase Price	Capital Expenditures	Other Acquisition Costs			Total Cost Basis/Value	Per Unit
	\$26,806,613	\$3,979,552	\$1,070,645			\$31,856,811	\$153,158
Direct Capitalization		Projected Income (12 mo)	Cap	Term	Discount		
		\$1,914,495	5.25%	5.75%	6.50%	\$36,625,571	\$176,084
DCF - 3 Year						\$35,188,788	\$169,177
DCF - 5 Year						\$36,897,403	\$177,391
Weighted Conclusion (Rounded)						\$36,200,000	\$174,038

NASH 2 SF LLC - 262 Units							
Actual	Purchase Price	Capital Expenditures	Other Acquisition Costs			Total Cost Basis/Value	Per Unit
	\$40,710,860	\$4,834,841	\$1,868,145			\$47,413,847	\$180,969
Direct Capitalization		Projected Income (12 mo)	Cap	Term	Discount		
		\$3,112,478	5.50%	6.25%	6.75%	\$56,590,509	\$215,994
DCF - 3 Year						\$51,788,250	\$197,665
DCF - 5 Year						\$54,066,462	\$206,361
Weighted Conclusion (Rounded)						\$54,100,000	\$206,489

FAIR VALUE REPORTING



Assumptions Report ATL 2 SF LLC (Amounts in USD)

May, 2020 through Apr, 2026

Property Market Assumptions					
General Inflation	3.00%				
(a) Market Inflation	3.00%				
Expense Inflation	3.00%				
CRF Inflation	0.00%				
Capital Expenditures Per Unit	500				
Single-Family Market Leasing Profiles					
	South	West	North	Central	East
(b) Term Length (Years/Months)	1/0	1/0	1/0	1/0	1/0
Renewal Probability†	73.33%	73.33%	73.33%	73.33%	73.33%
Months Vacant	2.00	2.00	2.00	2.00	2.00
Months Vacant (Blended)	0.53	0.53	0.53	0.53	0.53
Market Rent (New, \$ / Unit / Month)	1,350.00	1,350.00	1,450.00	1,275.00	1,475.00
Market Rent (Renew, \$ / Unit / Month)	1,350.00	1,350.00	1,450.00	1,275.00	1,475.00
Market Rent (Blended, \$ / Unit / Month)	1,350.00	1,350.00	1,450.00	1,275.00	1,475.00
Use Market or Prior	N/A	N/A	N/A	N/A	N/A
Prior Rent	N/A	N/A	N/A	N/A	N/A
Free Rent (New, Months)	0.00	0.00	0.00	0.00	0.00
Free Rent (Renew, Months)	0.00	0.00	0.00	0.00	0.00
Free Rent (Blended, Months)	0.00	0.00	0.00	0.00	0.00
Improvements (New, \$ / Unit)	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00
Improvements (Renew, \$ / Unit)	0.00	0.00	0.00	0.00	0.00
Improvements (Blended, \$ / Unit)	400.00	400.00	400.00	400.00	400.00
Leasing Commissions (New, Fixed %)	5.00%	5.00%	5.00%	5.00%	5.00%
Leasing Commissions (Renew, Fixed %)	0.50%	0.50%	0.50%	0.50%	0.50%
Leasing Commissions (Blended, Fixed %)	1.70%	1.70%	1.70%	1.70%	1.70%

Footnotes:

- (a) We have utilized a market inflation of 3.00% for the first year of the analysis period, and applied a 4.00% market inflation for the remainder of the analysis period, as we expect rent growth to recover after the first year of the COVID-19 pandemic.
- (b) We have utilized a renewal percentage of 75% through the end of 2020, and applied a 70% renewal percentage for the remainder of the analysis period, as we anticipate more renewals in the first year with less people wanting to move out during the COVID-19 pandemic.

Cash Flow ATL 2 SF LLC 4/30/2020 (Amounts in USD)

May, 2020 through Apr, 2026

		Apr-21	Apr-22	Apr-23	Apr-24	Apr-25	Apr-26	Total	
Other Revenue	Other Income	332,500	342,475	352,749	363,332	374,232	385,459	2,150,746	
	Lot Sale	22,500	0	0	0	0	0	22,500	
	Total Other Revenue	355,000	342,475	352,749	363,332	374,232	385,459	2,173,246	
	Potential Gross Revenue	7,025,924	7,159,459	7,382,655	7,693,377	7,966,446	8,279,732	45,507,592	
Single-Family Revenue	Potential Market Rent	7,782,300	8,015,769	8,336,400	8,669,856	9,016,650	9,377,316	51,198,290	
	Loss To Lease	-616,968	-663,562	-785,481	-796,553	-861,747	-897,968	-4,652,269	
	Potential Rent	7,165,332	7,322,217	7,550,919	7,873,303	8,154,903	8,479,348	46,546,021	
	Vacancy Allowance	-358,267	-366,111	-377,546	-393,665	-407,745	-423,967	-2,327,301	
	Scheduled Single-Family Rent	6,807,065	6,956,106	7,173,373	7,479,638	7,747,158	8,055,381	44,218,720	
	Credit Loss	-136,141	-139,122	-143,467	-149,593	-154,943	-161,108	-884,374	
	Effective Single-Family Rental Income	6,670,924	6,816,984	7,029,905	7,330,045	7,592,214	7,894,273	43,334,346	
Total Single-Family Revenue	6,670,924	6,816,984	7,029,905	7,330,045	7,592,214	7,894,273	43,334,346		
	Total Effective Revenue	7,381,054	7,170,113	7,397,286	7,708,593	7,982,271	8,236,346	45,875,663	
Operating Expenses	Property Taxes	1,021,250	1,051,888	1,083,444	1,115,947	1,149,426	1,183,909	6,605,864	
	Insurance	285,000	293,550	302,357	311,427	320,770	330,393	1,843,497	
	Repair and Maintenance	522,500	538,175	554,320	570,950	588,078	605,721	3,379,744	
	Utilities	71,250	73,388	75,589	77,857	80,193	82,598	460,874	
	HOA	95,000	97,850	100,786	103,809	106,923	110,131	614,499	
	G&A	47,500	48,925	50,393	51,905	53,462	55,066	307,249	
	Management Fee	634,185	636,602	656,247	681,735	704,935	730,912	4,044,617	
	Total Operating Expenses	2,676,685	2,740,377	2,823,135	2,913,630	3,003,787	3,098,729	17,256,344	
		Net Operating Income	4,349,239	4,419,082	4,556,519	4,779,746	4,962,659	5,181,003	28,251,248
	Single-Family Leasing Costs	Unit Improvements	184,650	209,039	208,626	222,261	226,903	228,493	1,279,971
Unit Leasing Costs		125,397	140,780	142,054	152,713	157,420	159,905	878,269	
Total Single-Family Leasing Costs		310,047	349,819	350,680	374,974	384,322	388,398	2,158,239	
Capital Expenditures	Reserves For Replacement	237,500	244,625	251,964	259,523	267,308	275,328	1,536,247	
	Total Capital Expenditures	237,500	244,625	251,964	259,523	267,308	275,328	1,536,247	
	Total Leasing & Capital Costs	547,547	594,444	602,643	634,498	651,631	663,725	3,694,487	
	Cash Flow Before Debt Service	3,801,692	3,824,638	3,956,876	4,145,250	4,311,029	4,517,277	24,556,762	
	Cash Flow Available for Distribution	3,801,692	3,824,638	3,956,876	4,145,250	4,311,029	4,517,277	24,556,762	



LIMITED TRANSACTION ACTIVITY



There is guidance in ASC 820 to prove whether “there has been a significant decrease in the volume or level of activity in relation to normal market activity.” The factors to be evaluated are:

- ✓ There is a significant decline in the activity of, or there is an absence of a market for new issues (that is, a primary market) for that asset or liability or similar assets or liabilities
- ✓ There are few recent transactions
- ✓ Price quotations are not developed using current information
- ✓ Price quotations vary substantially either over time or among market makers
- ✓ Benchmark data is seemingly unreliable
- ✓ There is a significant increase in implied liquidity risk premiums, yields, or performance indicators (such as delinquency rates or loss severities) for observed transactions or quoted prices when compared with the reporting entity’s estimate of expected cash flows
- ✓ There is a wide bid-ask spread or significant increases in the delta between buyer and seller expectations
- ✓ Little information is publicly available

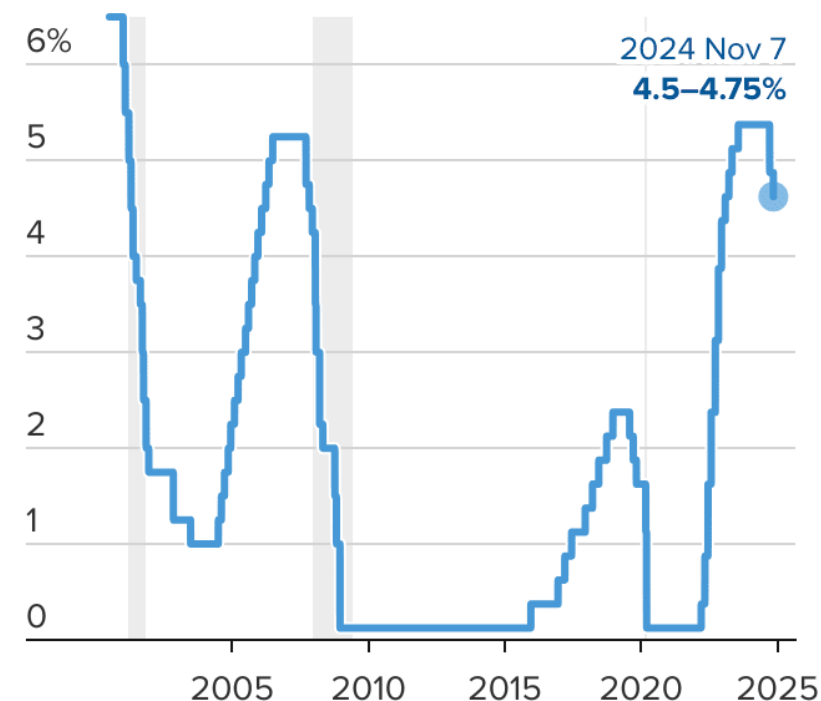
Further analysis is required because the transactions or quoted prices may not be determinative of fair value and significant adjustments may be necessary when using the information in estimating fair value.



As a result of a monetary policy to cool the economy, the U.S. Federal Reserve (the Fed) rapidly increased the [federal funds rate](#) which created several financing challenges within the real estate industry, and has largely contributed to a disconnect in value among willing buyers, willing sellers, and financing resources. Although the Fed recently lowered the federal funds rate by 50 basis points, the underlying disconnect has not been resolved and the following question still stands; **“What is real estate worth TODAY?”**

Federal funds target rate

July 2000–November 2024



Note: From December 2008 to present, the chart reflects the **midpoint** of the Federal Reserve's target range. The target rate began in 1982.

Shaded areas indicate recessions as defined by the National Bureau of Economic Research.

Source: Federal Reserve Bank of New York Target rate as of Nov. 7, 2024



When dealing with limited transaction activity for an asset, determining its fair value requires careful consideration of market trends, comparable transactions, and applying valuation techniques that rely on observable inputs as much as possible.

- I. **Issue:** Real estate analysts generally use prior sales activity and current net operating income to help benchmark property value, but because of the historical rapid rise in the federal funds rate, the continued holding period of the higher federal funds rate, and the tightening of commercial real estate lending, the disconnect between buyer & seller remains. This has led to a scarcity of non-distressed sales and non-owner-occupier sales from which to extract relevant pricing information.
 - *Sales data may only show the top and bottom of the market or sales with unobservable concessions. For example, NYC has a 31% rent gap between Class A and B, sales of existing Class A are noticeably higher than the average price, which is being dragged down by lower class assets and assets to be repurposed.*
- II. **Consequently,** many real estate professionals are limited to textbook equations or using data from an inapplicable (or incomparable) market cycle. Further, the data scarcity issue gives rise to an unhelpful practice of adjusting older and/or stale data to extract investment rate information for a going-in capitalization rate for a particular real estate asset, which pretends to be market-oriented.
 - *Valuations should apply outside-the-box tactics to help illuminate market perspective.*



TOOLS TO THINKING OUTSIDE THE BOX (not a complete list)

- Identify similar assets that have recently traded in **Different Markets** and adjust for any key differences
- **Reconciliation Tactics:** Use all Three Approaches to Value and Weight the different conclusions
- Elicit **Market Participant Perspectives:** Consider the perspective of a typical market participant when making valuation assumptions, including their motivations and expectations, and use to guide certain inputs and assumptions
- Use other textbook methods (Elwood-Ackerson-Gettle) to estimate cap rates
- For niche real estate, deep dive into the business of the tenant to help confirm lease rates (Occupancy Cost Ratios)
- **Liquidity Adjustments:** If the asset is illiquid due to limited transaction activity, consider adjusting the fair value downward to reflect the potential costs of selling the asset under orderly constructs, possibly under the theory it is a distressed asset. (Data for relative discount for distress may also be required)
- Apply rigorous **Sensitivity Testing**



Nothing replaces the value of several interviews with knowledgeable market participants. Strong valuations are supported by expectations of buyers, sellers, lenders and brokers who can provide specific requirements for yields, cap rates, lease rates, and overall strategies.

QUOTES – FILL IN THE BLANK

- “ _____ are trading on a multiple of equity, based on existing debt and LTV at the time of the loan...”
- “There are so many failing _____, we generally see over 1x gross revenue for profitable ones, and less than 1x gross revenue for the unprofitable ones.”
- “Karate studios are the death knell for _____.”
- “You can’t use cap rates for _____. You need to understand taxes and margins to value them.”



Office properties faced significant challenges in 2024. Average vacancy rates exceeded 20% in most core markets, the highest on record. Rent growth was nearly non-existent. Unoccupied office space doubled compared to 2022. Office valuations fell 50%, especially impacting key urban core markets like NYC, Chicago and San Francisco. With so many property owners “underwater” the feeling is this is our newest distressed market, however, many building owners do not believe this is substantiated due to lack of sales.

How do we know its distressed? *Look at the past...*

2008-2012: Residential and Condominium Subdivision lots (paper lots to finished lots) showed average declines of 30-50% from 2007 sales prices for most of the country due to the Great Recession and sub-prime lending but rebounded eventually due to supply stabilization.

2017-now: The Mall sector has generally declined due to the rise of e-commerce, and while not all Malls shuttered, the industry believes its oversupplied; there is an ever-expanding gap between Class A malls in strong markets and malls that struggle to keep tenants and consumer traffic. For example, Macerich’s Broadway Plaza and Scottsdale Fashion Square are at approximately \$2,000 per square foot (psf) and about \$1,800 psf in sales, respectively, while Class B/C malls are about \$500 psf or lower. In 2016, almost 75% of malls had a vacancy rate of 10% or less, but by 2021, less than half could say that.



Ellwood Formula: This method effectively “builds up” a Cap Rate by looking at mortgage and equity requirements and is otherwise known as a “mortgage-equity” analysis. The function of this formula allows a preparer to analyze how financing terms impact real estate value and is different from the BOI method because it relies heavily on financing terms.

Ackerson Formula: This method is considered to be a simplified Ellwood Formula, commonly known as “Ellwood without Algebra”, and effectively blends an equity yield and mortgage terms, including both interest and amortization. The weighted average total of equity and debt is reduced by any equity build-up. This is done by adding a sinking fund factor to calculate the hypothetical equity build-up as well as real property maintenance and replacement considerations commonly estimated through depreciation. Both of these components would be typical over a long-term hold period. *(Please note that this is a very limited method to value assets with interest-only loan terms because this type of loan structure does not provide for any equity build-up.)*

Gettel Formula: This method is commonly referred to as the Debt Service Coverage Ratio Method (DSCR Method). This method uses the perspective of a lender to calculate a capitalization rate using basic mortgage terms. It is different from the Ellwood method because it simplifies the above two approaches by focusing solely on the debt components: mortgage constant, loan-to-value, and the DSCR. Because the DSCR encapsulates the property’s potential to generate cash flow after servicing a loan, it considers the return of capital to the equity owner. An investor’s rate of return on its investment (equity) is not a significant component in this method (whereas under the Ellwood Formula it is a significant component). Further, this method is useful when a hold period for the real property is uncertain, and/or depreciation or appreciation is difficult to credibly estimate (components associated with the Ackerson Formula).

FORMULAS FOR CAP RATES



Example

Property Value or Sale Price	\$	15,000,000
Annual Net Operating Income	\$	1,200,000
Annual Equity Yield		10.00%
Loan to Value (LTV)		67%
Annual Mortgage Rate Interest		6.50%
Investment Holding Term In Years		10
Mortgage Amortization Term In Years		25
DSCR		1.40
Value Change - Appreciation/(Depreciation)		0.00%

Calculations:

Loan Amount (based on Loan to Value)	\$	10,000,500
Balloon Payment	\$	7,644,184
Monthly Loan Payment (Principal and Interest)		(\$68,321.32)
Percent of Mortgage Paid Off at Maturity		24%
Equity Ratio		33%
Sinking Fund Factor (SFF)		0.063
Annual Mortgage Constant		8.06%

DSCR Method (Gettel Formula)

Formula= Debt Service Coverage Ratio x Mortgage Constant x Loan to Value

DSCR			Mortgage Constant		LTV		Cap Rate
1.40	x		8.06%	x	67%	=	7.52%

Band of Investment (Standard)

Formula = (Loan Ratio x Mortgage Constant) + (Equity Ratio x Equity Return)

Debt	Weight		Mortgage Constant		Cap Rate
	67%	x	8.06%	=	5.37%
Equity	Weight		Equity Return		
	33%	x	10.00%	=	3.33%
					8.71%

Ackerson Method (Simplified Ellwood)

Formula 4 Parts

1 = (Loan Ratio x Mortgage Constant) + (Equity Ratio x Equity Return)

2 = Percentage of Loan Paid Off x Loan to Value Ratio x Sinking Fund Factor

3 = Subtract 2 from 1

4 = Value Change (Decline) x Sinking Fund Factor

Note: The above calculation is predicated that the hold term used to derive the sinking fund factor is also used to calculate the percentage of loan paid off

1	Debt	Weight		Mortgage Constant		Cap Rate
		67%	x	8.06%	=	5.37%
1	Equity	Weight		Equity Return		
		33%	x	10.00%	=	3.33%
						8.71%
2	Percentage Of Loan Pay-Down	LTV		SFF		
	24%	67%	x	0.063	=	0.99%
3						7.72%
4	Value Change	SFF				
	0.00%	0.063	x		=	-
						7.72%

SENSITIVITY TESTING



Key Variables in Real Estate Sensitivity Analysis

- ✓ **Rental Income:** Changes in rental rates or occupancy levels can significantly impact cash flow. For example, a 5% increase in rental rates can lead to a 10% increase in annual cash flow, assuming stable occupancy.
- ✓ **Operating Expenses:** Increases in maintenance, insurance, property management, or utility costs can reduce profitability. A 5% rise in operating expenses can decrease net operating income (NOI) by 3-5%, depending on the expense structure.
- ✓ **Capitalization Rates/Discount Rates:** Variations in interest rates influence overall property values. A 25 to 50 bps change can have a significant impact on overall value.

		Projected Stabilized EGI						
		\$3,811,638	\$3,887,871	\$3,965,629	\$4,044,941	\$4,125,840	\$4,208,357	\$4,292,524
Cap Rate at Refl	5.85%	-1%	14%	28%	44%	59%	75%	91%
	5.70%	10%	25%	40%	55%	71%	87%	104%
	5.55%	21%	36%	52%	68%	84%	100%	117%
	5.40%	33%	48%	64%	81%	97%	114%	132%
	5.25%	45%	61%	78%	95%	112%	129%	147%
	5.10%	58%	75%	92%	109%	127%	145%	163%
	4.95%	72%	89%	107%	125%	143%	161%	180%
	4.80%	87%	105%	123%	141%	160%	179%	198%
	4.65%	103%	121%	140%	159%	178%	198%	218%



POSITIVES

- I. Interest Rates inch lower → Lending gets easier.
- II. Property Values increase across the boards
- III. Insurance costs stabilize
- IV. Industrial/Manufacturing rebounds

CHALLENGES

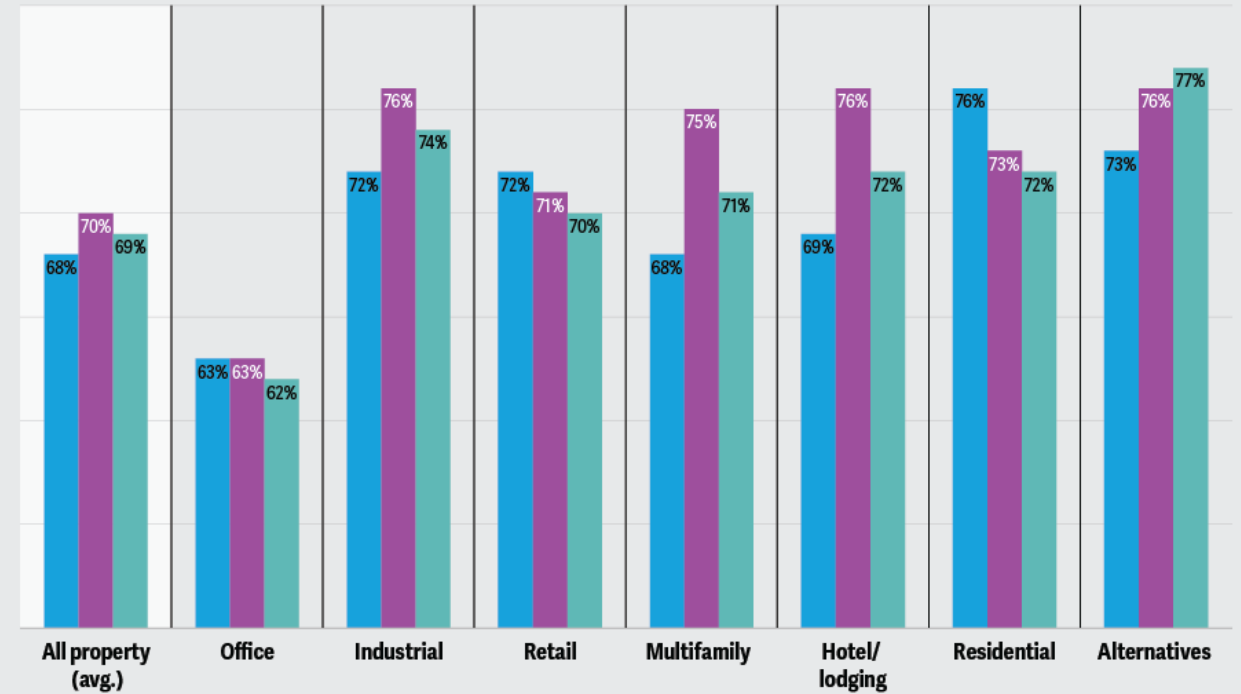
- I. Office still struggles
- II. Global Political Situation (may get messier)
- III. Climate related disasters on the rise
- IV. Local RE taxes increase to balance loss in Core property values

Figure 4

Respondents expect improvements in real estate fundamentals across property sectors

How do you expect each of the following aspects of real estate fundamentals to change for the property type you specialize in over the next 12 to 18 months?

● Leasing ● Capital markets ● Lending



Note: Leasing includes expectations for growth in rental rates, leasing activity, and vacancies; capital markets include expectations for growth in property prices and transaction activity; lending includes expectations for cost of capital and capital availability; alternatives include digital economy, life sciences, and self-storage properties; residential includes single family rentals, senior housing, and student housing properties.

Source: Deloitte 2025 commercial real estate outlook survey.