COOK COUNTY
ASSESSOR'S
OFFICE

Data Center Valuation

Assessor Guide to Data Center Appraisal

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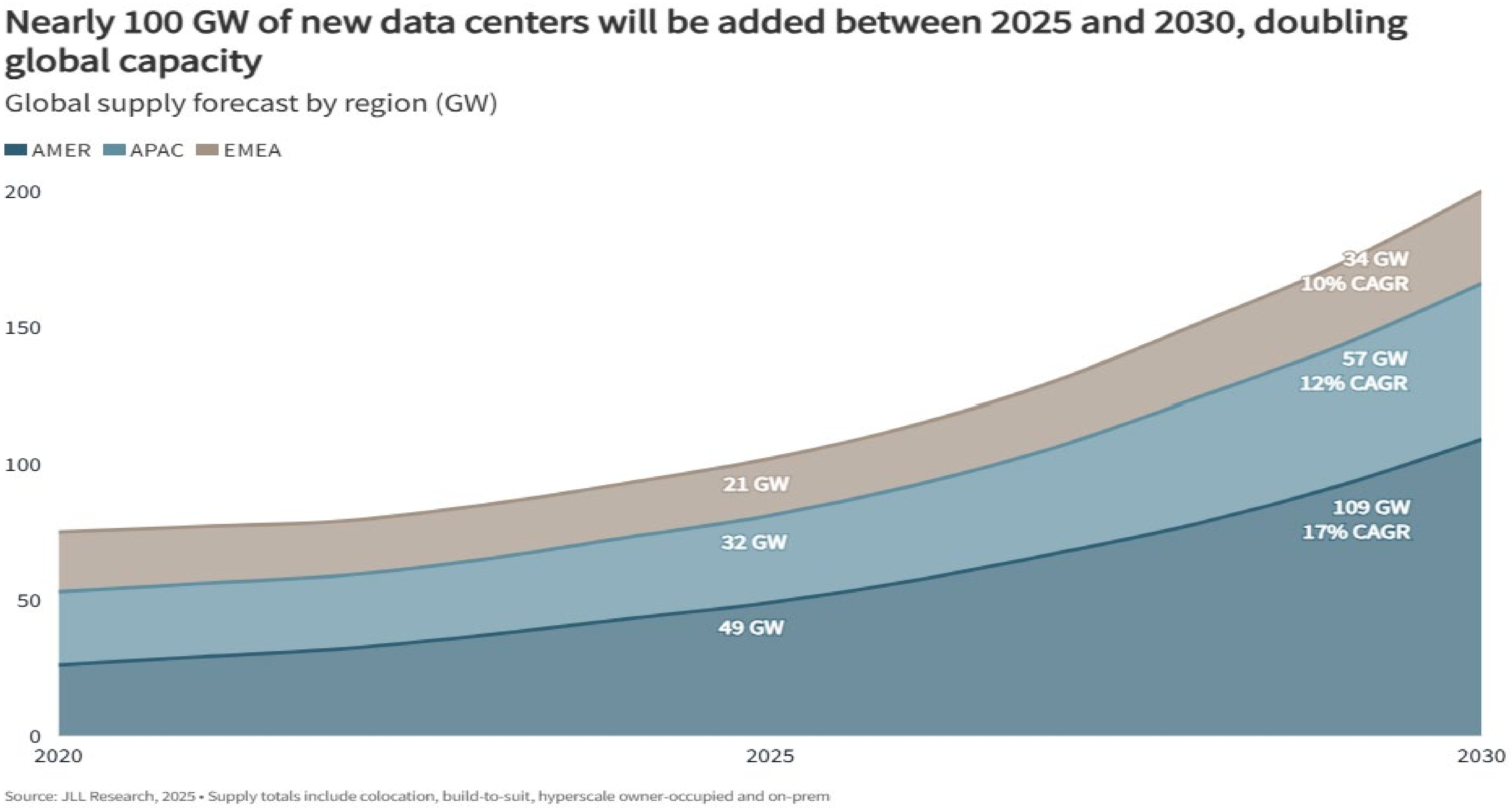
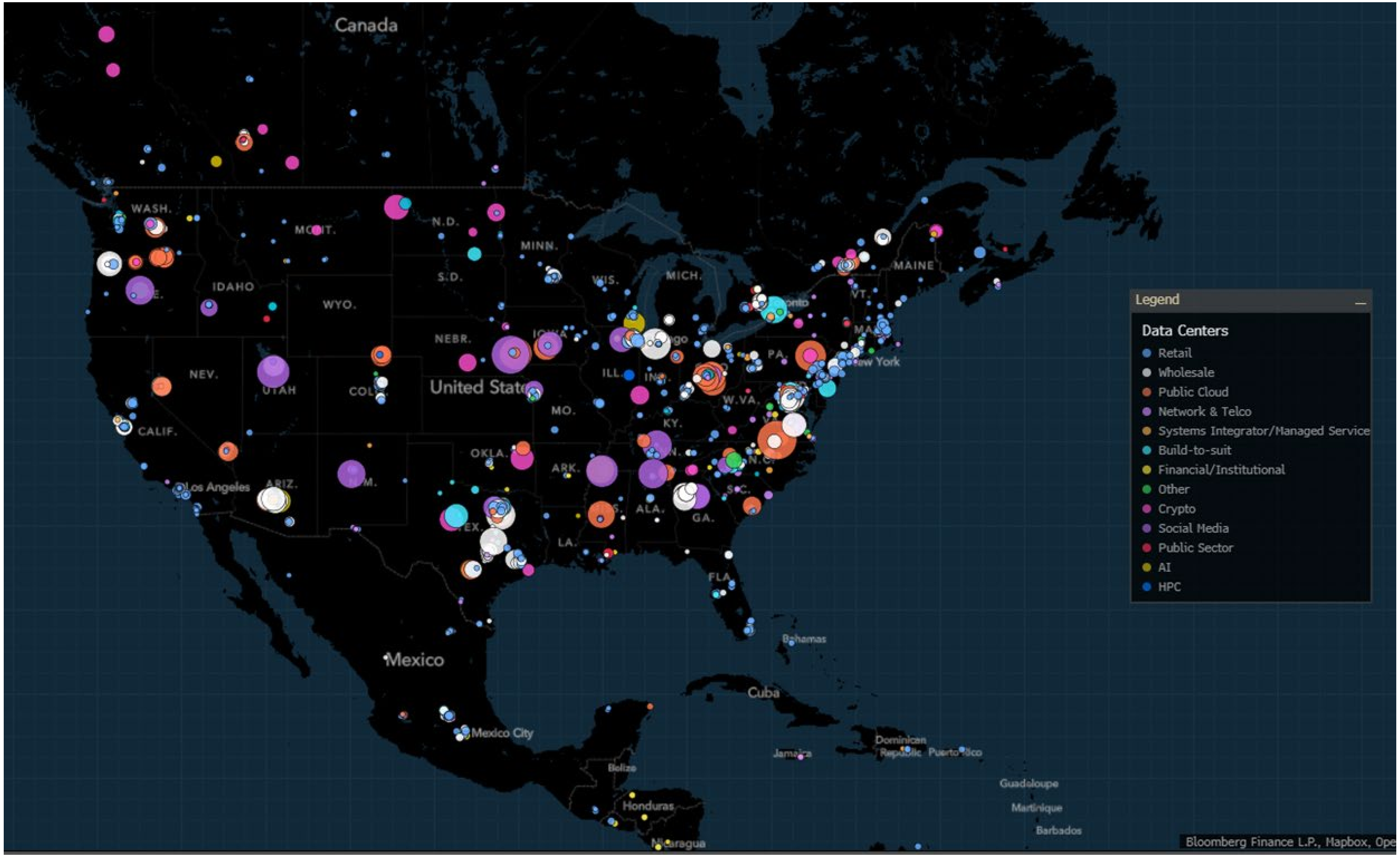
Presentation Agenda

- Real vs. Personal Property
- Institutional Investor Perspective
- Questions for a New Data Center
- Appraisal Terms to Know
- Review of an Actual Appraisal
- Assessment Appeals
- Questions

Global Growth Forecast for Data Center Critical Power

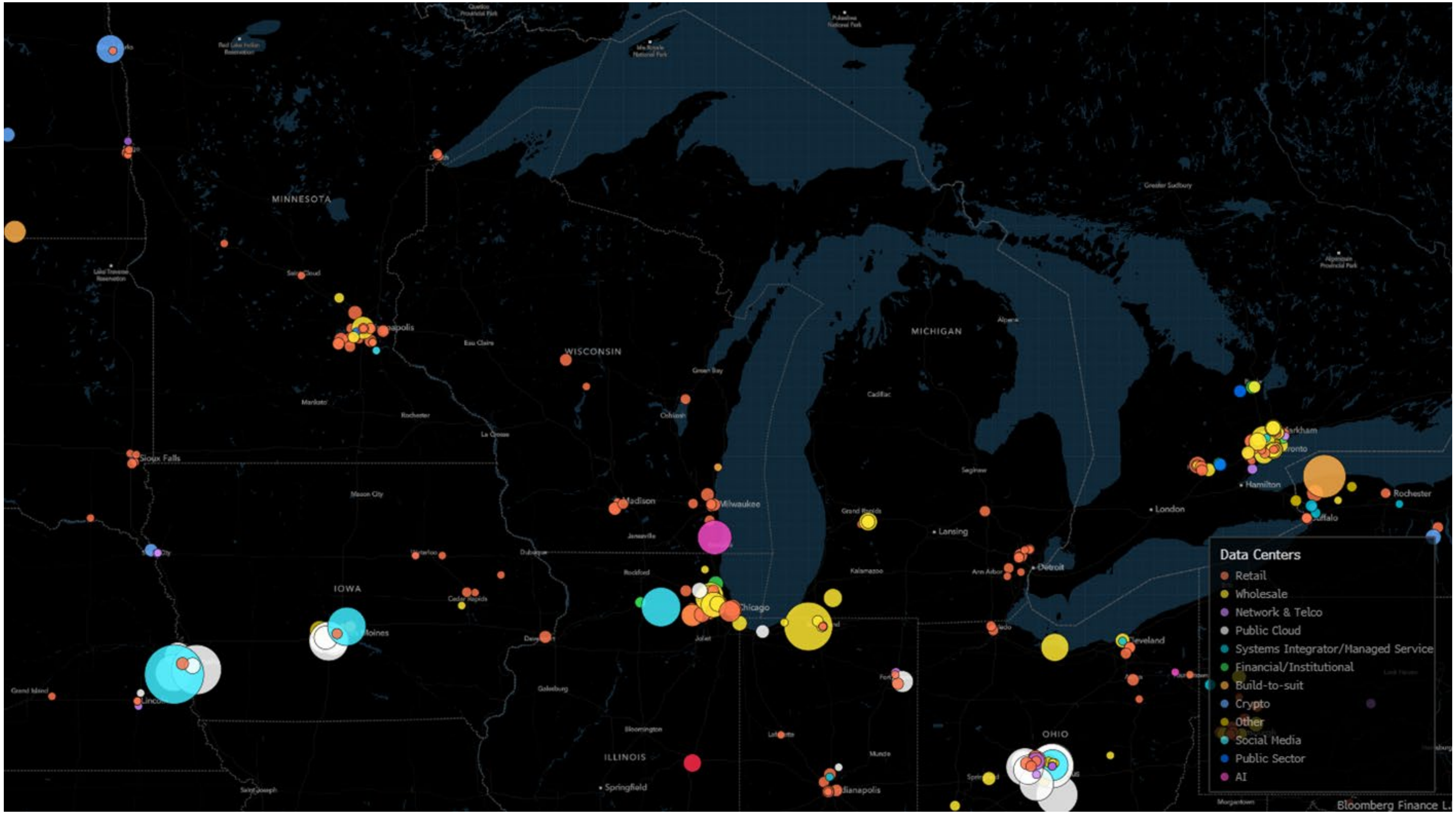


Data Centers Proliferating Across the USA



Source: Bloomberg

Data Centers in the Northern Midwest USA



Source: Bloomberg

Assessors Take Note

As demand for data centers increases, they are likely to proliferate across the USA as population and usage grow.

With the value of a single data center often exceeding $100M, **these facilities may become the most valuable properties in your jurisdiction.**

Your jurisdiction may only ever get one or two data centers. This puts a premium on understanding how capital markets value these assets.

Are Data Centers Real Estate Assets?

Per Uniformity: Yes

- In data center rent contracts, cooling, ventilation, fire suppression, and power are key elements of the rental contract.

Per SEC and IRS: Yes

- The US Securities and Exchange Commission and IRS consider data centers to be real estate.
- The two largest data center operators (Equinix and Digital Realty) are Real Estate Investment Trusts (REITs). Several of the other largest players (CoreSite, QTS, Cyrus One) were REITs.
- To be a REIT, entities must meet US Securities and Exchange Commission eligibility rules.
- If owners meet the REIT tests, they are exempted by the IRS from corporate income tax.

Data Centers REIT Tests

Among the SEC REIT requirements:

- "To qualify as a REIT, a company must have the bulk of its assets and income connected to real estate investment …"
- "a REIT must: Invest at least 75 percent of its total assets in real estate assets and cash;
- "Derive at least 75 percent of its gross income from real estate related sources, including rents from real property and interest on mortgages financing real property."
- *Investor Bulletin: Real Estate Investment Trusts (REIT)*, United States Securities and Exchange Commission, December 2011. reits.pdf (sec.gov)

According to the National Association of Real Estate Investment Trusts (NAREIT):

- "At least 75% of the REIT's annual gross income must be from real estate-related income such as rents from real property and interest on obligations secured by mortgages on real property. An additional 20% of the REIT's gross income must be from the above-listed sources or other forms of income such as dividends and interest from non-real estate sources (like bank deposit interest). No more than 5% of a REIT's income can be from non-qualifying sources, such as service fees or a non-real estate business."
- How To Form REIT? | Forming a Real Estate Investment Trust | Nareit

Data center REITs /purchased by REITS and dedicated real estate funds

- QTS acquired by, among others, Blackstone Real Estate Investment Trust (BREIT), a REIT
- CoreSite acquired by American Tower, a REIT
- CyrusOne acquired by, among others, KKR Real Estate Partners Americas III CyrusOne Agrees to $15bn Take-Private Deal by KKR and GIP - Dgtl Infra . This is a "fund dedicated to opportunistic real estate investments primarily in the U.S." KKR Closes $4.3 Billion Americas Opportunistic Real Estate Fund | Business Wire

Valuation Methodologies Used by REIT/Fund Managers

Implied cap rate

NOI/ (Market Capitalization + Net Debt)

Book Value

Value of assets minus liabilities, according to most recent financial statements

Source : Bloomberg

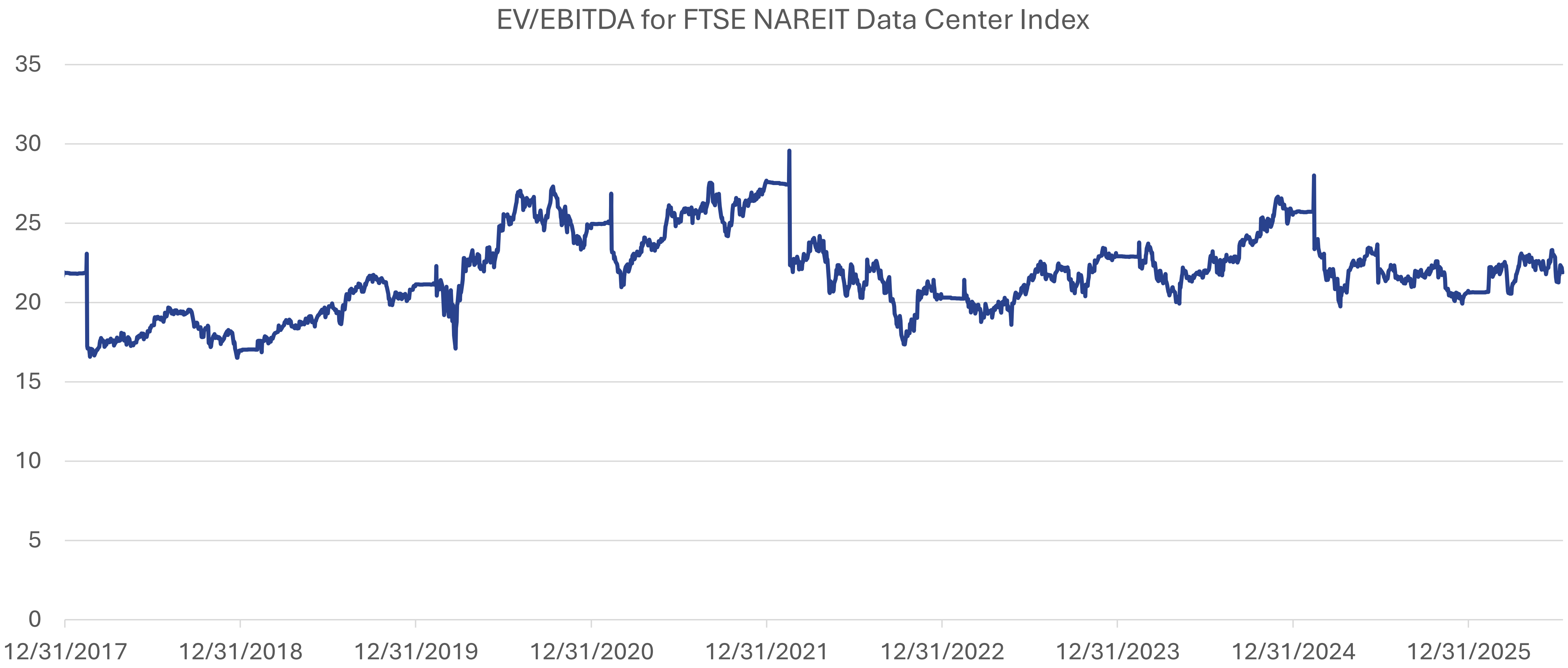
P/Sales

Advantage - approach is readily available in public markets and transactions.

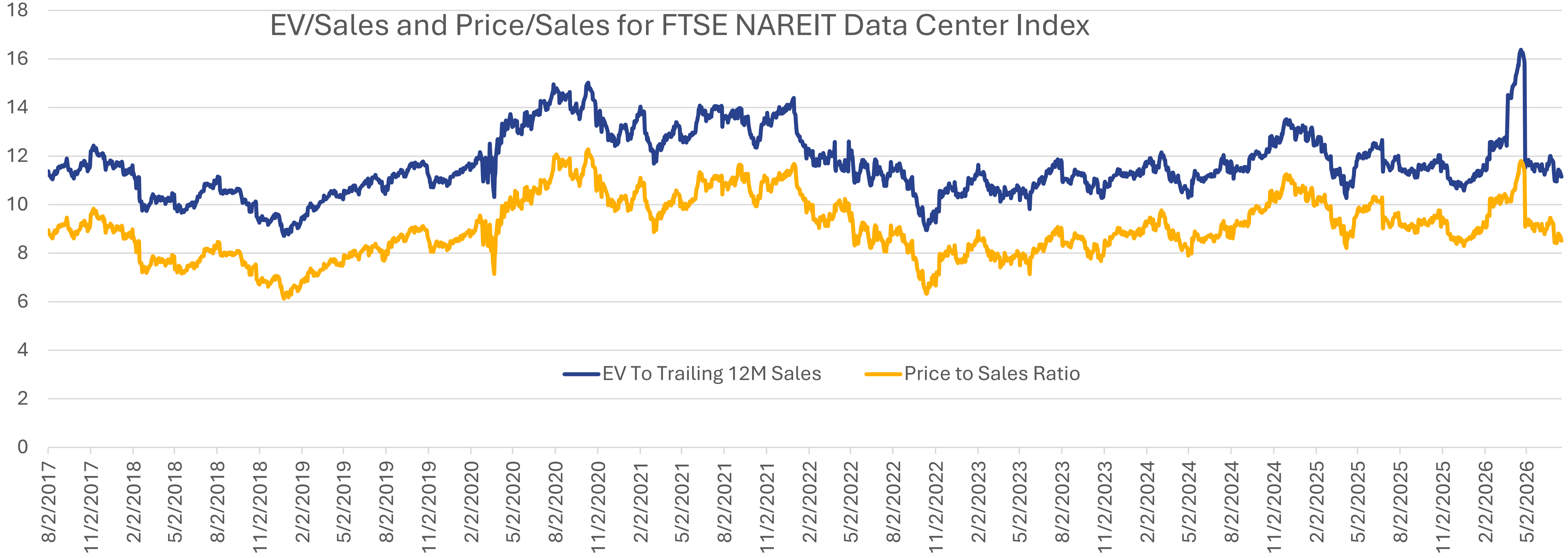
Disadvantage - “Price” is the value after deducting debt. In some areas, the debt attributable to the asset may not be known.

EBITDA Multiple

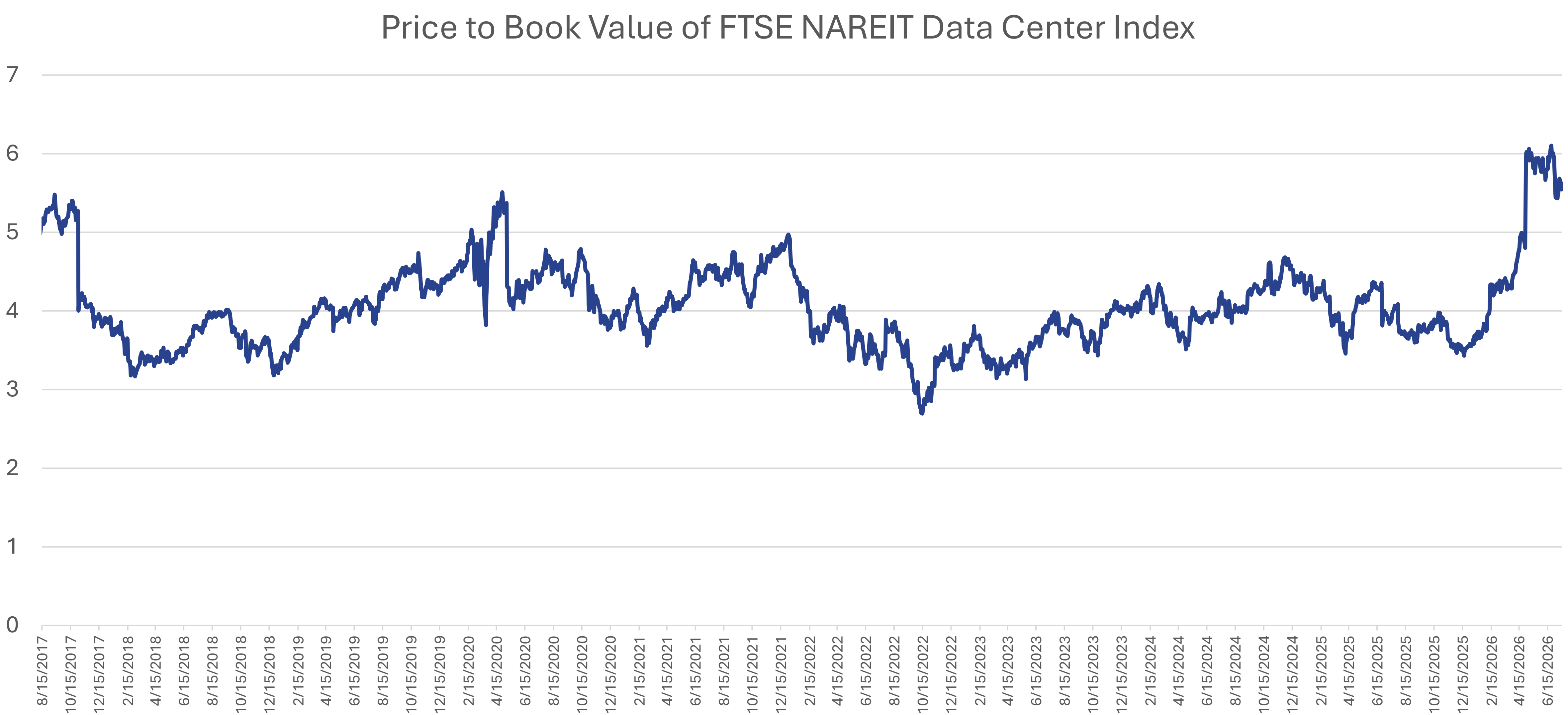
- **Enterprise Value**
  Market Capitalization + Net Debt, represents the full value of the entity
- **EBITDA**
  Net Profit + Interest + Taxes + Depreciation + Amortization



Source: Bloomberg. Takeaway: Capital markets and transactions seem to agree on ~20x EBITDA as valuation multiple. Though EBITDA can be manipulated and is sometimes not available, it may be the easiest and most substantiated way to arrive at value for a data center.



Source: Bloomberg. Takeaway: Revenue is more commonly available than EBITDA and less subject to manipulation. Disadvantage: the valuation multiple is less stable than EV/EBITDA and you may have to attribute debt to make the calculation.



Source: Bloomberg. Takeaway: Data centers trade at high multiples to cost minus depreciation, demonstrating that the cost approach is likely to significantly undervalue data centers.

Bloomberg: Multiples used in Data Center Acquisitions

Target	Ann Date	Total Value ($, mln)	TV/EBITDA	TV/Revenue	TV/Total Assets	TV/Book Value
Switch	5/11/2022	6,930	26.9	11.1	2.3	20.5
CyrusOne	11/15/2021	11,485	20.4	9.9	1.6	4.1
CoreSite	11/15/2021	9,480	26.8	14.9	4.4	neg
QTS	6/7/2021	5,394	20.6	9.6	1.3	7.3
DuPont Fabros	6/9/2017	6,310	19	11.6	2	8.2

METRICS	DCs in US	NRSF/DC	Rev per DC	EBITDA/DC (US)	EBITDA margin	Gross RealEst invested/DC
Equinix	80	1273 cabinets	$30m	$14m	45%	$100m*
Digital Realty	117	180,000	$39m	$18m	46%	$132m
American Tower/CoreSite	28	109,000	$27m	$14m	49%	$209m
CyrusOne	56	105,000	$22m	$10m	46%	$120m
QTS	28	141,000	$19m	$9m**	47%	$144m
* = Across all geographies; US sites have higher average cost						
** = NAREIT definition of Adjusted EBITDA ("EBITDAre")						
Source: company 10-K filings with SEC						

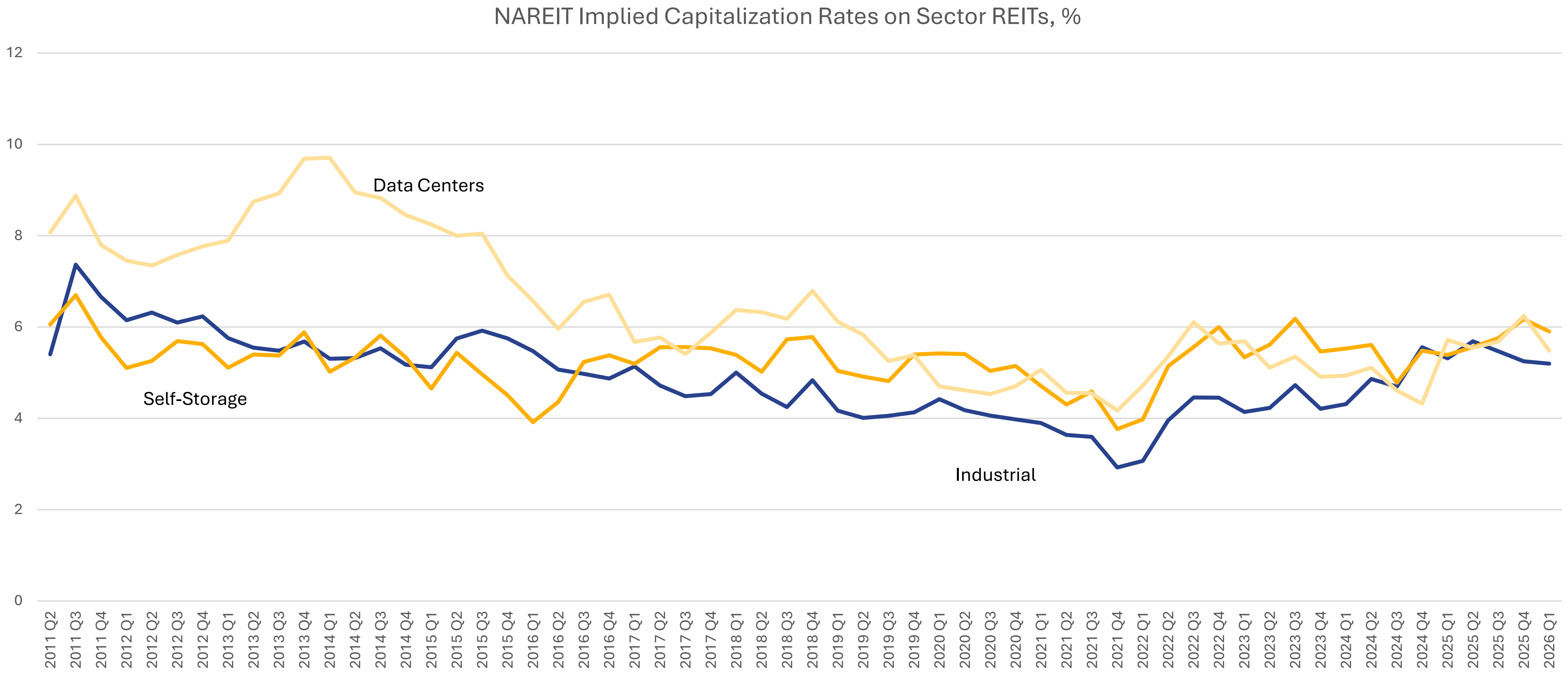
METRIC NOTES

- Accounting methods and EBITDA adjustments may differ across firms, esp revenue recognition, merger costs, & deprecition
- Per-DC metrics are averages--Properties at major interconnection nodes may be more lucrative and profitable
- Check single-company disclosures versus market reports by JLL, CBRE
- Equinix and Digital Realty break out pricing differences between small and large tenants
- Properties are generally getting bigger and more costly to build, with more power, cooling, and physical load-bearing capacity
- For example, verticality has positive power efficiency attributes, especially for single-site hyperscalers
- As a result, sites custom-built for hysperscalers may be more valuable than typical multi-tenant DC
- Per-site NOI disclosures by QTS are useful, even if outdated

NAREIT – Summary of Cap Rates by Investment Type

NAREIT IMPLIED CAP RATES				
Category	**2022Q4**	**2023Q4**	**2024Q4**	**2025Q2**
Office	7.85%	7.48%	6.87%	7.21%
Industrial	4.45%	4.21%	5.56%	5.68%
Retail	6.41%	6.27%	6.12%	6.28%
Shopping Centers	6.87%	6.57%	6.23%	6.92%
Regional Malls	6.55%	6.17%	5.72%	5.69%
Free Standing	5.94%	6.02%	6.34%	6.15%
Residential	5.77%	5.79%	5.55%	5.69%
Apartments	6.18%	6.23%	5.66%	5.85%
Manufactured Homes	4.46%	4.79%	5.31%	5.20%
Single Family Homes	5.45%	5.13%	5.36%	5.48%
Diversified	6.41%	7.37%	7.94%	7.60%
Lodging/Resorts	8.95%	9.45%	9.19%	9.82%
Self Storage	6.00%	5.46%	5.48%	5.53%
Health Care	5.55%	5.07%	5.20%	5.04%
Timberland	6.73%	5.90%	6.70%	6.96%
Telecommunications	5.38%	5.52%	5.83%	5.22%
Data Centers	**5.64%**	**4.91%**	**4.33%**	**4.90%**
Gaming	1.77%	1.79%	1.87%	1.82%
Specialty	9.96%	9.09%	8.15%	8.14%
All Equity REITs	**5.93%**	**5.68%**	**5.75%**	**5.86%**

Source: Company reports, S&P Capital IQ Pro, NAREIT 2025



Source: Bloomberg. Takeaway: Industrial and self-storage cap rates have closely tracked data center cap rates in recent years. If you have those available in your jurisdiction, they may be a useful proxy for data centers.

Data Center Valuation Information Sources

- Operators may provide operating details in their presentations to investors (available on their Investor Relations websites and SEC Edgar filings).
- Some additional information may be available on quarterly conference call transcripts (available on Bloomberg).
- Commercial Mortgage-Backed Security (CMBS) disclosures may be available (using SEC Edgar, Trepp, or Bloomberg) - usually includes appraisal reports.
- JLL, CBRE, C&W, Avison Young and other major commercial real estate services firms provide useful research reports ranging from industry growth trends to rent, vacancy, cost and pricing data.

Cook County Assessor Valuation Methodologies

Income Approach

- Market participants use this method in their pricing models.
- Actual lease and expense data are often unavailable.
- Value includes real & personal property components.

Cost Approach

- The one method that only includes real property.
- Actual cost data very helpful if available.
- Cost manuals have limited usefulness for estimating base building costs & developer profit.

Sales Approach

- Comparable single asset sales in any one market are rare.
- The sale terms and specific property characteristics are often unknown.
- Sale price includes real & personal property components.

Questions for a New Data Center

When a data center is proposed in your county officials should be clear about the possible costs.

- Who will pay for the new infrastructure to support this project?
- What will be the impact on the existing water supply?
- What will be the impact on the existing power grid?
- What will be the environmental impact on the community?

Questions for a New Data Center

When a data center is proposed in your county, officials should also be clear about the possible benefits.

- Construction jobs versus permanent jobs

- Real estate tax revenue, especially after the appeal process

Understanding these data center costs and benefits at the beginning of the process will help decision makers negotiate appropriate subsidies (sale tax exemptions, property tax relief, TIF agreements, etc.).

Questions for a New Data Center

- From an appraisal perspective it is also important that data center developers reveal the certain project information.

  - Total project costs, including real and personal property
  - All building permits with a description of the work to be performed and the dollar value of the work
  - The megawatt capacity of the power committed to the project
  - Complete building physical description (size, ceiling heights, types of systems)

- This information provides the foundation for properly valuing the data center project.

Appraisal Terms to Know

- **Hyperscale Data Centers:** Single-tenant facilities constructed by the leading global technology companies for their own use. These facilities tend to be the largest in terms of physical size and megawatt capacity.
- **Wholesale Data Centers:** Single- or multi- tenant facilities constructed on a speculative basis for tenants wanting complete control over their IT infrastructure. These facilities tend to be large in terms of physical size and megawatt capacity.
- **Colocation Data Centers:** Multi-tenant facilities constructed on a speculative basis. These facilities tend to be smaller in terms of physical size and megawatt capacity.

Appraisal Terms to Know

- **Megawatts:** The measure of the total continuous electricity supplied to a data center. One megawatt equals one million watts. One gigawatt equals 1,000 megawatts.

- **Power Density:** The amount of electrical power used within a data center. A 10 MW data center within a 100,000 square foot facility has a power density of 100 watts per square foot.

- **Powered Shell:** A finished data center building shell (the interior is empty) that has secured its electrical power and fiber connectivity.

APPRAISAL REVIEW

MICROSOFT DATA CENTER CAMPUS
ELK GROVE VILLAGE, IL

Refer to digital copy of CCAO report

Review of an Actual Appraisal

Microsoft Data Center Campus in Elk Grove, Cook County, Illinois

- Date of Value: January 1, 2025
- Land Size: 1,714,320 SF (39.36 Acres)
- No. of Buildings Planned: Three – 201, 151 and 101 Innovation Drive
- No. of Buildings Completed: One – 201 Innovation Drive
- 201 Innovation Drive Building Size: 112,000 SF
- 201 Innovation Drive Megawatts: 28.8
- 201 Innovation Drive Power Density: 257 Watt per SF
- Market Value: $226,200,000 ($162.9M - DC & $63.3M Excess Land)

Assessment Appeals

- Your data center assessed value will be aggressively appealed.
- The taxpayer's appeal team will include attorneys, appraisers and consultants.
- Appeal arguments typically focus on real property v. personal property (& business enterprise value).
- The taxpayer will want the assessed value to reflect the powered shell.
- To defend your value, cite actual land sale and improvement cost data.

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Questions?