

Deutsche Bank
Commercial Real Estate



DB Commercial Real Estate

#PositiveImpact



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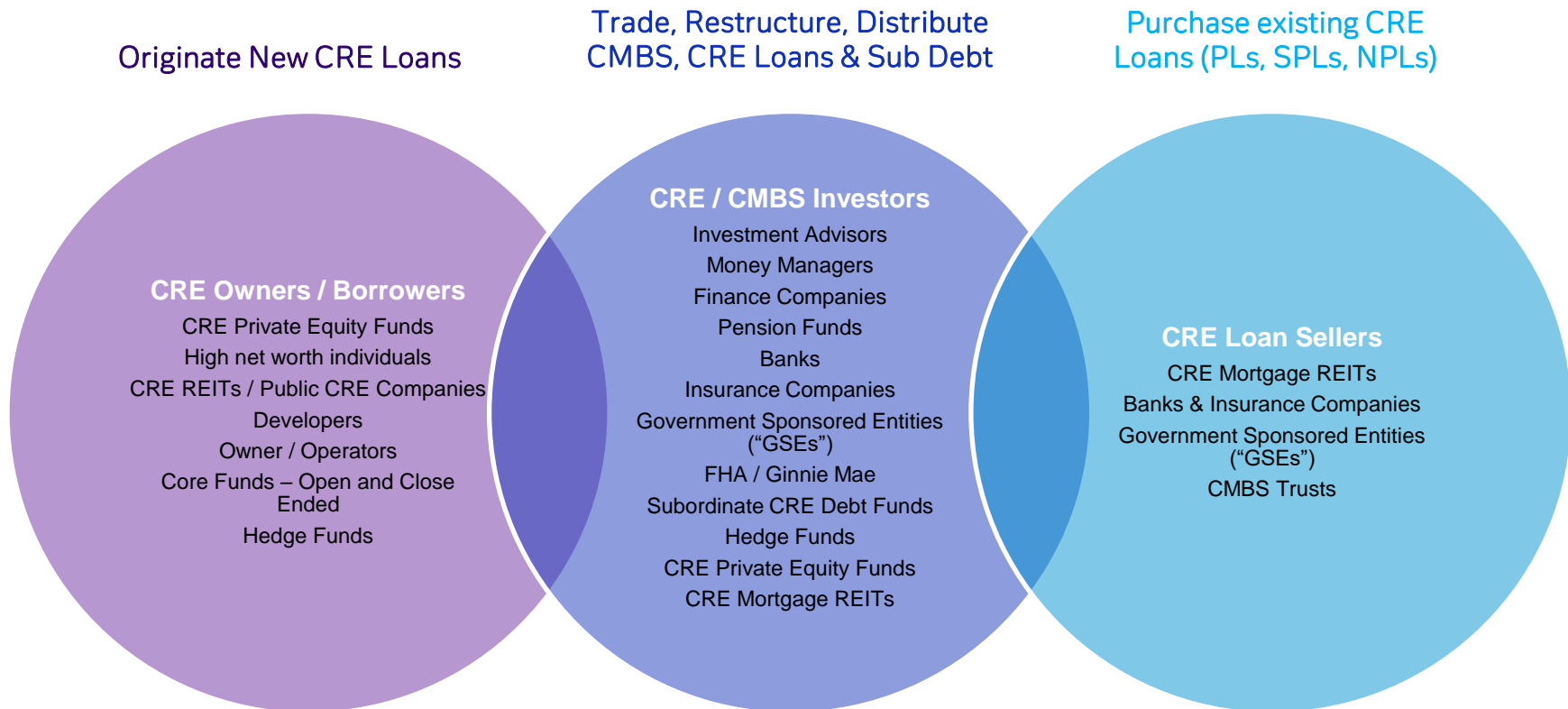
Deutsche Bank Commercial Real Estate Overview

1

Commercial Real Estate Group



- The Commercial Real Estate Group (“CRE”) is the real estate debt financing platform within Deutsche Bank, providing financing solutions across the capital structure
- CRE’s expertise and dedicated teams make DB a global leader in asset originations, loan sales, transaction structuring, underwriting, loan servicing and asset valuation across a broad spectrum of real estate products



Commercial Real Estate Lending Platform



Below illustrates the three types of loan products where DB is an active participant:

Conduit Securitization
Loan Size: \$10MM – \$250MM
Tenor: 5, 7 or 10 years
Loan to Value: 40% – 75%
IO or Amortizing
Loan Type: Fixed
Coupon Range: 6.5 – 8%
Property Count: 30 – 200

- Strong diversification across various property types and geographic regions
- Long term, fixed rate financing
- Standardized underwriting

Standalone Securitization
Loan Size: \$250MM – \$2BN+
Tenor: 3-5, 7 or 10 years
Loan to Value: 25% – 75%
IO or Amortizing
Loan Type: Floating or Fixed
Coupon Range: 5 – 9%
Property Count: Single or portfolio
Other: Senior / Subordinate structure

- Trophy assets in core markets
- Institutional sponsors
- Optionality for fixed or floating
- Access to larger quantum of funds

Balance Sheet or Syndication
Loan Size: \$50MM – \$1BN+
Tenor: 3-5 years
Loan to Value: 30% – 80%
IO or Amortizing
Loan Type: Floating
Coupon Range: S + 2.50 – 7.50%
Property Count: Single or portfolio

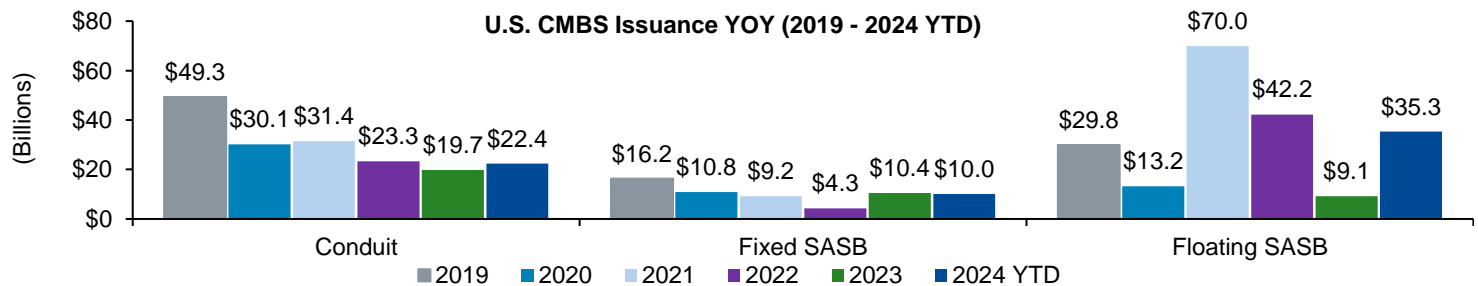
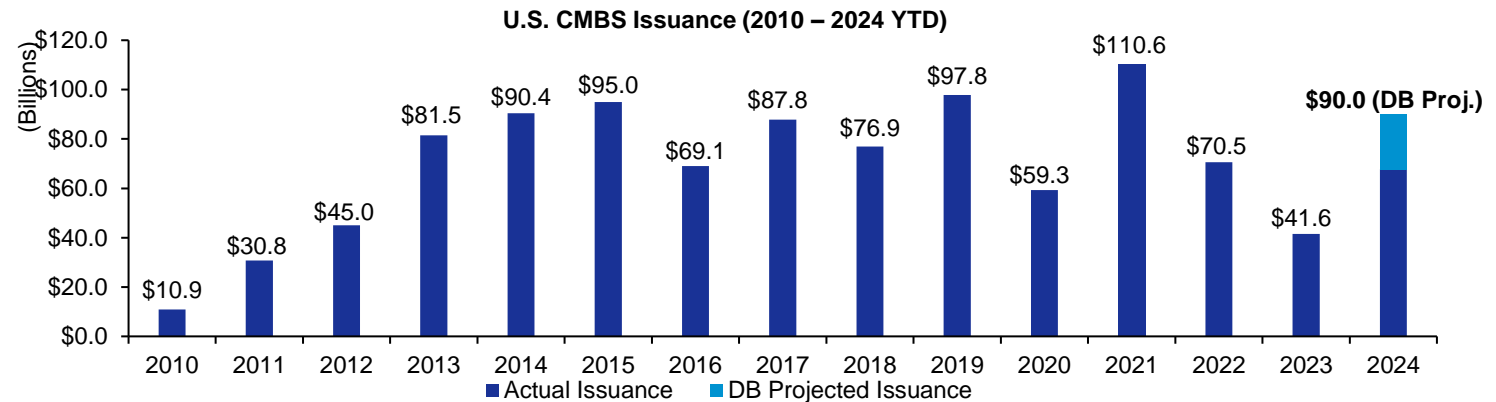
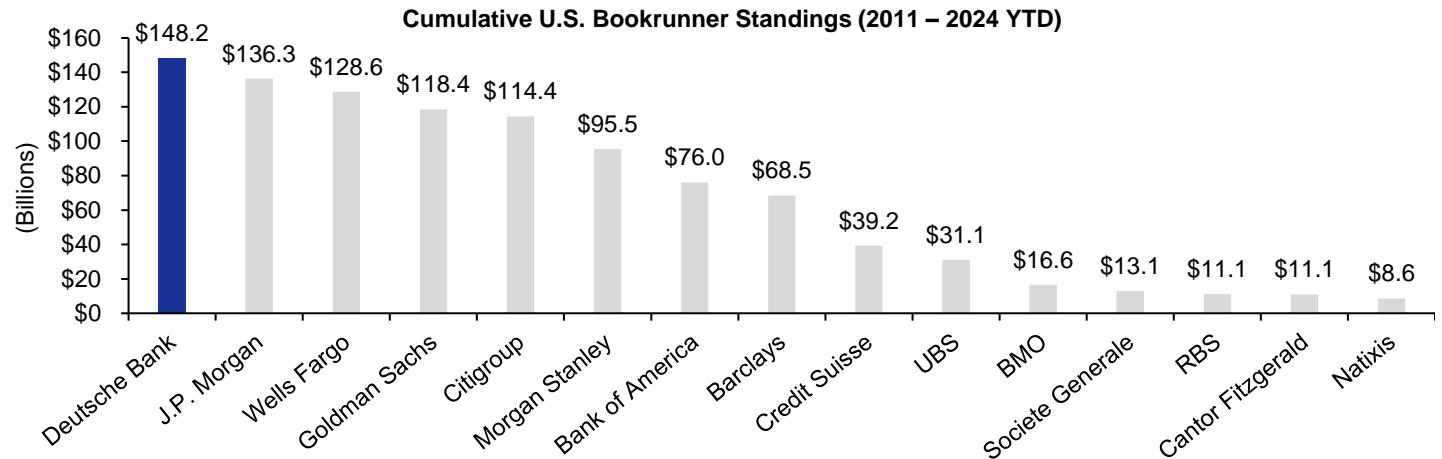
- Yield and prepayment upside
- Balance sheet financing supports assets that are in a transition period.
- Relationship lending

Leading CMBS Bookrunner











































CMBS League Tables

- DB's CRE Capital Markets Primary Issuance platform has been a market leader in Non-Agency CMBS for many years and is trusted as an experienced, go-to lender for key institutional borrowers on real estate projects throughout the country.
- In aggregate from 2011 to 2024 YTD, DB is the #1 bookrunner with ~\$148.2bn in bookrunner credit, approx. \$11.9bn higher (and 1.2pts higher in market share) compared to our nearest competitor.
- YTD, the CMBS market has issued ~\$67.8bn in total volumes across SASB and conduit products, representing an approximate 63% increase compared to FY 2023.
- DB anticipates that 2024 will see overall market issuance of ~\$90.0bn.
- DB's Secondary desk continues to be a market leader in providing liquidity, evidenced by the most comprehensive daily SASB run compared to the Street with over 100 deals.



























2024 YTD: SASB Activity



 <p>SHR 2024-LXRY \$1,580,000,000 Strategic Portfolio <i>Floating Rate Financing</i></p> <p>Right Lead Bookrunner & Co-Lender October 2024</p> 	 <p>LEX 2024- BBG \$400,000,000 731 Lexington <i>Fixed Rate Financing</i></p> <p>Left Lead Bookrunner & Co-Lender September 2024</p> 	 <p>HYT 2024-RGCV \$620,000,000 Hyatt Regency Orlando <i>Floating Rate Financing</i></p> <p>Right Lead Bookrunner & Co-Lender August 2024</p> 	 <p>COMM 2024-277P \$750,000,000 277 Park Avenue <i>Fixed Rate Financing</i></p> <p>Sole Bookrunner & Sole Lender August 2024</p> 
 <p>DBGS 2024-SBL \$344,500,000 Sunbelt Logistics <i>Floating Rate Financing</i></p> <p>Joint Lead Bookrunner & Co-Lender August 2024</p> 	 <p>BFLD 2024-WRHS \$608,400,000 Project Big Rig <i>Floating Rate Financing</i></p> <p>Right Lead Bookrunner & Co-Lender July 2024</p> 	 <p>COMM 2024-WCL1 \$493,000,000 Fortress Industrial Portfolio <i>Floating Rate Financing</i></p> <p>Left Lead Bookrunner & Co-Lender July 2024</p> 	 <p>ARZ 2024-BILT \$460,000,000 Arizona Biltmore <i>Fixed Rate Financing</i></p> <p>Right Lead Bookrunner & Co-Lender June 2024</p> 
 <p>HLTN 2024-DPLO \$452,000,000 The Diplomat Beach Resort <i>Floating Rate Financing</i></p> <p>Right Lead Bookrunner & Co-Lender June 2024</p> 	 <p>BX 2024-PALM \$610,000,000 Project Palm <i>Floating Rate Financing</i></p> <p>Joint Lead Bookrunner & Co-Lender May 2024</p> 	 <p>DBSG 2024-ALTA \$217,000,000 Alta+ <i>Fixed Rate Financing</i></p> <p>Joint Lead Bookrunner & Co-Lender May 2024</p> 	 <p>MED 2024-MOB \$450,500,000 MOB Portfolio <i>Floating Rate Financing</i></p> <p>Right Lead Bookrunner & Co-Lender May 2024</p> 
 <p>DBWF 2024-LCRS \$240,300,000 La Cantera Resort & Spa <i>Floating Rate Financing</i></p> <p>Left Lead Bookrunner & Co-Lender April 2024</p> 	 <p>SCG 2024-MSP \$220,200,000 Marriott Suites Portfolio <i>Floating Rate Financing</i></p> <p>Left Lead Bookrunner & Co-Lender April 2024</p> 	 <p>BX 2024-XL5 \$2,350,000,000 BX XL5 Industrial Portfolio <i>Floating Rate Refinancing</i></p> <p>Right Lead Bookrunner & Co-Lender March 2024</p> 	 <p>GWT 2024-WOLF \$1,000,000,000 Great Wolf <i>Floating Rate Refinancing</i></p> <p>Right Lead Bookrunner & Co-Lender March 2024</p> 
 <p>BX 2024-XL4 \$1,500,000,000 BX XL4 Industrial Portfolio <i>Floating Rate Refinancing</i></p> <p>Right Lead Bookrunner & Co-Lender February 2024</p> 	 <p>BX 2024-BIO \$1,200,000,000 BioMed (GOP + Kendall) <i>Floating Rate Refinancing</i></p> <p>Right Lead Bookrunner & Co-Lender February 2024</p> 	 <p>MCR 2024-HTL \$333,000,000 MCR Hotel Portfolio <i>Floating Rate Refinancing</i></p> <p>Left Lead Bookrunner & Co-Lender February 2024</p> 	 <p>BBCMS 2024-5C25, Various \$200,000,000 Staten Island Mall <i>Fixed Rate Refinancing</i></p> <p>Left Lead Bookrunner & Co-Lender January 2024</p> 

2023 Year in Review: Notable Large Loan Activity

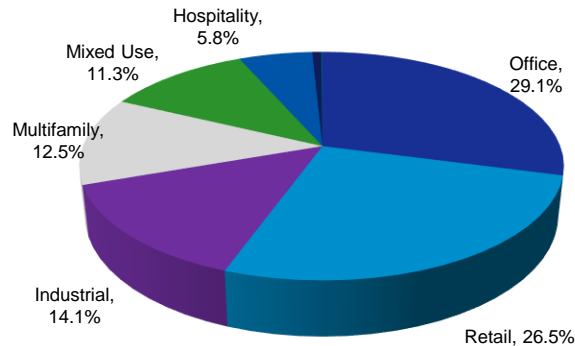


 <p>BPR 2023-STON \$190,000,000 Stonestown Galleria Mall <i>Fixed Rate Refinancing</i></p> <p>Left Lead Bookrunner & Co-Lender December 2023</p> 	 <p>NJ 2023-GSP \$525,000,000 Garden State Plaza <i>Fixed Rate Refinancing</i></p> <p>Right Lead Bookrunner & Co-Lender December 2023</p> 	 <p>BX 2023-XL3 \$1,000,000,000 BX XL3 Industrial Portfolio <i>Floating Rate Refinancing</i></p> <p>Right Lead Bookrunner & Co-Lender December 2023</p> 
 <p>TYSN 2023-CRNR \$710,000,000 Tysons Corner Center <i>Fixed Rate Refinancing</i></p> <p>Left Lead Bookrunner & Co-Lender November 2023</p> 	 <p>THPT 2023-THL \$796,000,000 Tharaldson Portfolio <i>Fixed Rate Refinancing</i></p> <p>Left Lead Bookrunner & Co-Lender November 2023</p> 	 <p>FS 2023-4SZN \$410,000,000 Four Seasons Surf Club & Palm Beach <i>Fixed Rate Refinancing</i></p> <p>Right Lead Bookrunner & Co-Lender October 2023</p> 
 <p>WSTN 2023-MAUI \$515,000,000 Westin Maui <i>Fixed Rate Refinancing</i></p> <p>Joint Bookrunner & Co-Lender July 2023</p> 	 <p>BX 2023-VLT2 \$800,000,000 BX Datacenter Portfolio 2.0 <i>Floating Rate Refinancing</i></p> <p>Joint Bookrunner & Co-Lender May 2023</p> 	 <p>BMARK 2023-V2, Various \$180,000,000 Cumberland Mall <i>Fixed Rate Refinancing</i></p> <p>Left Lead Bookrunner & Co-Lender April 2023</p> 
 <p>LAQ 2023-LAQ \$625,000,000 CorePoint Portfolio 2.0 <i>Floating Rate Refinancing</i></p> <p>Left Lead Bookrunner & Co-Lender March 2023</p> 	 <p>SCOTT 2023-SFS \$700,000,000 Scottsdale Fashion Square <i>Fixed Rate Refinancing</i></p> <p>Joint Bookrunner & Co-Lender February 2023</p> 	 <p>FIVE 2023-V1, Various \$370,000,000 Green Acres Mall <i>Fixed Rate Refinancing</i></p> <p>Joint Bookrunner & Co-Lender January 2023</p> 

Inaugural 5yr Conduit Transaction



Property Type Distribution



Transaction: FIVE 2023-V1

Joint Bookrunners & Co-Lead Managers: DB, Barclays, BMO, Citi, GS

Pricing Date: February 10, 2023

Pool Metrics:

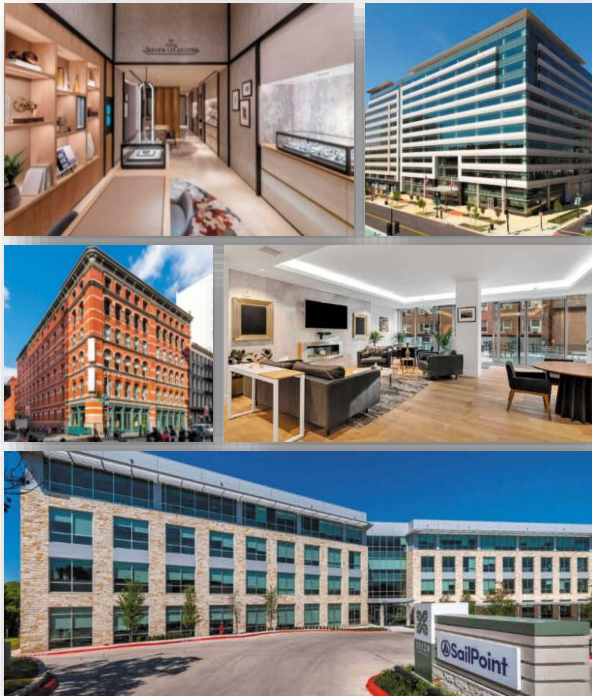
- Pool Balance: \$765,497,945
- Number of Loans/Properties: 26/43
- Wtd. Avg. CLTV: 53.1%
- Wtd. Avg. UW NCF DSCR: 1.82x
- Wtd. Avg. UW NOI DY: 12.8%
- Wtd. Avg. Mortgage Interest Rate: 6.4248%
- Top Property Types: Office (29.1%), Retail (26.5%), Industrial (14.1%), Multifamily (12.5%)

Transaction Highlights:

- DB operated as Left Lead in an inaugural conduit pool comprised entirely of 5yr fixed rate loans.
- DB was the first of the major CMBS lenders to begin originating loans with the intent to launch this product late last year. DB canvassed the market and quickly targeted the borrowing community via aggressive pricing and prepayment flexibility – resulting in record application volume and the ability to capture a number of high-quality loans that have traditionally gone to other financing sources.
- DB had a healthy contribution to the pool with 12 loans totaling \$293.9MM (38.4% of the deal). The remaining collateral balance was contributed by Barclays, BMO, Citigroup, and Goldman Sachs (DB 38.4%/Citi 24.6%/Barclays 16.0%/BMO 12.8%/GS 8.2%).
- The benchmark 5yr AAA class (A-3/LCF) priced at P+130, 10 basis points tighter than initial price talk. Overall, DB was able to successfully tighten all classes but one from IPT to pricing, including a 40 basis-point tightening on the single-A rated class.
- With transaction pricing, the DB Commercial Real Estate group capped a successful four-month origination and distribution effort that both met borrower client financing needs and delivered high credit quality commercial real estate debt exposure to investor clients.
- The introduction and adoption of the 5yr conduit pool product has benefitted both lenders by providing additional distribution channels and borrowers through reduced financing costs.

Transaction Overview:

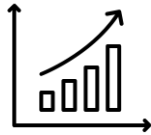
- DB acted as a Left-Lead Bookrunner and Co-Lead Manager alongside Barclays, BMO, Citigroup, and Goldman Sachs for the FIVE 2023-V1 deal, the \$765.5MM first ever conduit pool comprised entirely of 5yr fixed rate loans.



Culture of Innovation & Support



Deutsche Bank has been a leader in solving for new, creative distribution strategies that result in best execution for borrowers.



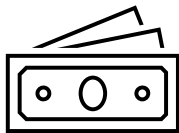
All-5yr Conduit Product

- DB was the first of the major CMBS lenders to begin aggregating collateral with the intent to securitize in an all-5yr conduit pool execution.
- Since the inaugural 5yr conduit deal (FIVE 2023-V1), 22 additional all-5yr deals totalling over \$18.6bn in volume have successfully priced.



Investment-Grade Only Deals

- DB led the charge in the creation of IG-only fixed-rate conduit pools.
- Following the onset of the COVID-19 pandemic, the "IG" series was one of the first successful conduit transactions to re-open the conduit CMBS market.



Loan-Specific "Rake" Bonds

- DB was the first to heavily utilize CUSIP'd rake bond issuance for subordinate debt distribution, a strategy that cut down on expenses while also providing optimal pricing.
- In May 2020, DB priced 3 separate rake offerings in connection with the BMARK 2020-IG3 transaction, including Tower 333 – a Bellevue, WA office property primarily long-term leased to Amazon.



Secondary Trading Platform

- Secondary liquidity has become increasingly important for investors when assessing new issue deals, particularly their ability to access the market efficiently during heightened periods of volatility. DB understands the impact that this can have on new issue pricing and has focused considerable resources on maintaining a secondary trading platform that continuously supports deals issued by DB.
- For example, recent secondary trading runs from Deutsche Bank have had upwards of almost 90 different deals represented while some others don't send runs at all and some send a small fraction of that. Runs include a variety of office exposures across sponsor groups with ratings ranging from AAA to below-investment grade.

Commercial Real Estate Market Insights

2

Key Observations in the US Real Estate Sector



- Two years ago, real estate was frequently cited as likely to crash and be a key contributor to a wider economic crisis.

- Since the summer, several positive signs across private and public real estate markets highlight reduction in risk within CRE.

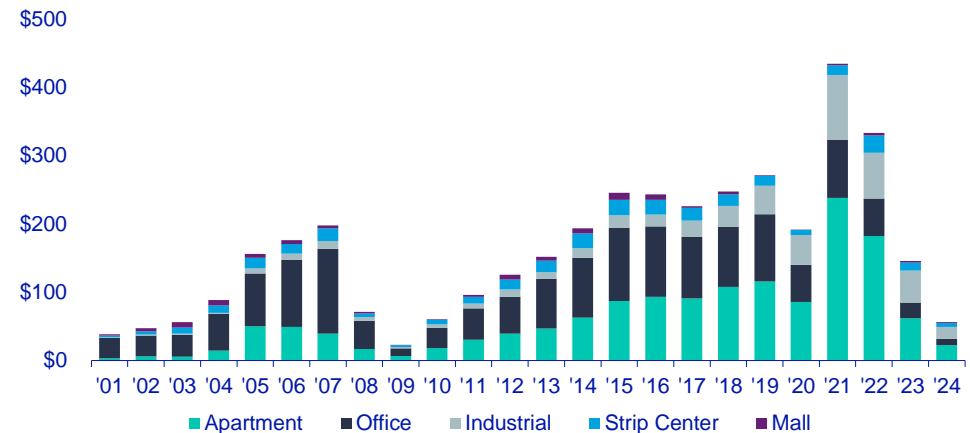
- New commercial real estate issuance, especially higher-quality deals, are doing well compared to pre-covid deals.

- The rally in real estate-related assets may continue as the Fed and the ECB continue their easing cycles with refinancing likely becoming cheaper.

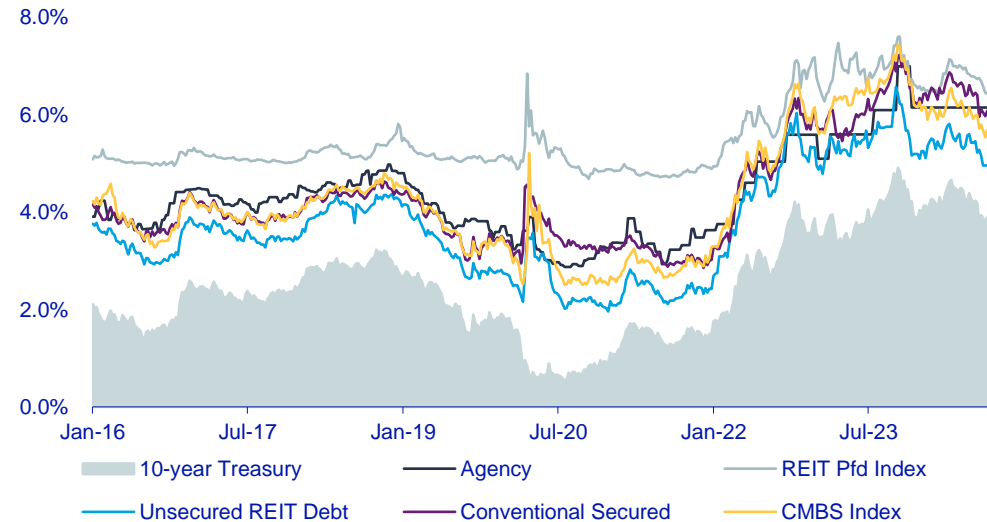
- Previous easing cycles in the US saw CRE prices appreciate with a median advance rate of 2.4%. This time, CRE's historically unusual slide going into a rate cutting cycle may boost potential appreciation.

Transaction volumes remain depressed but outlook improving^(a)

(\$ in billions)



Financing markets are becoming more constructive





Hospitality

- Overall, quarterly transaction volume has largely declined since 2021-2022. Segmentation continues to delineate the market with interest centered around full-service (27% volume increase YoY) vs limited service (-17% volume decrease YoY).
- Overall, hotel cap rates sit at 8.0%, up just 20bps from 4Q21 and give way to increased investor appetite for opportunities within the hotel sector
- National ADR grew 1.6% YoY in 2Q24 to \$161 pushing RevPAR up 1.5% to \$112 thanks to increased occupancy. Near term downside risks include a slower macroeconomic environment and climate change impacts to coastal operations (i.e., insurance), while upside factors include increased international inbound travel, stronger-than-expected GPR growth, and daily rates increases above the level of inflation.
- Demand for luxury-class was up by 4.8%, with upper upscale up just 2.4%, giving way to the spending power of the upper income leisure traveler as well as the corporate traveler.

Multifamily

- Year-over-year rent growth slightly eased to 0.3% in Q2 from 0.4% in Q1. Average annual rent growth is expected to begin accelerating in Q4 2024 alongside higher occupancy.
- Construction completions of 119,400 units in Q2 boosted the rolling-four-quarter total by 29% year-over-year to a record 460,200 units. Fewer construction starts in recent quarters will lower deliveries in 2025 and beyond.
- Net absorption totaled 126,600 units in Q2—the sixth highest Q2 total in over 20 years and on par with the pre-pandemic Q2 average. Quarterly demand finally eclipsed new completions, while the gap on an annual basis continued to shrink.
- Q2 multifamily investment volume increased by 82% quarter-over-quarter to \$38.3 billion. Of this total, \$10 billion was attributable to Blackstone's acquisition of AIR Communities' portfolio.

Industrial

- Deal volume was the highest of all sectors relative to pre-pandemic norms, evidencing strong demand for the asset class. As sales pricing continues to increase, so have cap rates (up 50 bps YoY to 6.4%).
- U.S. industrial market vacancy remained tight at 6.6% (1.9% increase YoY) but continued its gradual increase for an eighth consecutive quarter. While a record wave of new deliveries will be completed in the coming quarters, new construction is expected to hit a 10-year low by YE 2025 and could hit an inflection point for near term vacancy.
- Net absorption has improved for more than five quarters increasing to 31.2mn SF in 2Q24 from a 10-year low of 10.1mn SF in 1Q24. Monthly U.S. imports, have been rising at double-digit YoY rates since February and real consumer goods spending has been increasing as inflation continues to subside.

Retail

- New supply continues to be muted with only 62mn SF of new space delivered in the past year, which is ~40% below the sector's historical average. CoStar estimates an overall 4.7% availability rate for retail space in the U.S., marking the lowest level since CoStar began tracking the national market in 2006.
- Despite muted investment activity, the US retail market continues to move through 2024 in its tightest fundamental position in recent memory. The largest drivers of positive demand have come from a pullback in tenant move-outs/store closures which peaked during the pandemic in 2020 but have waned nearly 20% since the start of 2021. High consumer spending specifically for F&B, discount, off-price, and experiential sectors has also supported the sector's improvement.



Macro Outlook

- The RCA pricing index for the office sector fell another 12.4% YoY in 2Q24 marking the seventh straight decline since 3Q22
- Overall cap rates widened 40bps YoY to 7.3%, and CBD office particularly continues to struggle with cap rates sitting 110bps higher than their pre-Covid average
- While rate cuts should bolster the sector generally, investor appetite given the changing landscape and legacy exposures is hard to predict



Vacancy & Absorption

- Vacancy rate of prime office buildings was 15.5%, which is 3.6% below the overall U.S. average – currently at 19.1% up 10bps from last quarter. This is the lowest quarter-over-quarter increase in vacancy since Q2 2022
- Net absorption rebounded in Q2, climbing to 2.4 million SF from negative 10.1 million SF in Q1 – this was the first quarter of positive net absorption since Q3 2022
- On a year-over-year basis, net absorption improved in 37 markets, including those with negative demand



Leasing

- Leasing activity increased by 13.6% in Q2 to 47.9 million SF, up by 1.1% year-over-year
- Renewals accounted for 45% of Q2 leasing as tenants are showing intent of remaining in their spaces
- The number of leases signed in Q2 increased by 15% compared with Q2 of 2019
- Available sublease space fell to 4.2% (175 million SF) of totally inventory in Q2, this is down from 4.7% a year ago



Notable Transactions

- DB acted as Sole Bookrunner & Sole Lender on a \$650.0MN fixed-rate SASB as part of a \$750.0MN transaction for The Stahl Organization's refinance of 277 Park Avenue, a 1.9MN SF, Class A, office asset located on Park Avenue in Manhattan, NY

CRE: Market Spotlight - Primary Office Markets



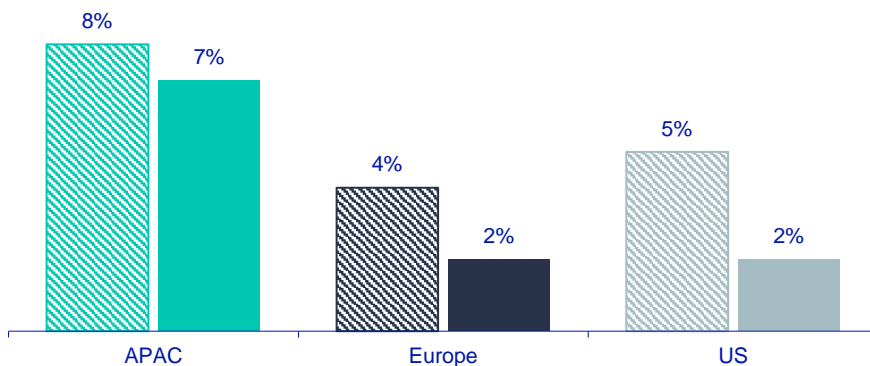
Market	Trends	Challenges
New York City	<ul style="list-style-type: none">- Leasing activity totaled 1.82 million SF in August, 7% of the five-year monthly average- Year-to-date leasing activity amounted to more than 14 million SF, which is up 35% from the prior year- The availability rate went down to 19.5% in the last month, which is down ~10bps year-over-year	<ul style="list-style-type: none">- Utilization rates have not recovered since the pandemic- Free rent and work allowance deal concessions remain elevated- While the market for Class A offices is strong refinancing of Class B and C still poses challenges
San Francisco	<ul style="list-style-type: none">- In Q2 2024, the vacancy rate increased to 36.8%, on 290,343 SF of negative absorption. The availability rate held steady at 39.1%- About 2 million SF was leased in Q2 2024, the second-best leasing quarter in the last two years behind Q4 2023.- By square footage, new direct leases accounted for 44% of Q2 leasing activity.	<ul style="list-style-type: none">- An over reliance on the tech sector has been a challenge for the San Francisco market as many companies have adopted a hybrid working schedule- The crime, homelessness and drug use has made the city less appealing for commercial tenants- Increase in retail vacancies has reduced foot traffic tremendously
Los Angeles	<ul style="list-style-type: none">- The overall vacancy rate ended Q2 2024 at 31.5%, while the overall availability rate ended the quarter at 36.8%.- The average direct asking rate increased by \$0.06 quarter-over-quarter to \$3.73 per sq. ft. on a monthly, full service gross basis. Since its peak in Q1 2020, the average asking rate has increased by 0.5%.- Total leasing activity, was 204,000 sq. ft. in Q2 2024. The top five deals in DTLA totaled just 103,500 sq. ft.	<ul style="list-style-type: none">- Overcrowding and congestion have decreased the appeal of Los Angeles- The area is experiencing high unemployment rates and significant job losses in the tech and entertainment sectors- Vacancy is still at a high compared to 2023 levels

CRE: Market Spotlight - Data Center

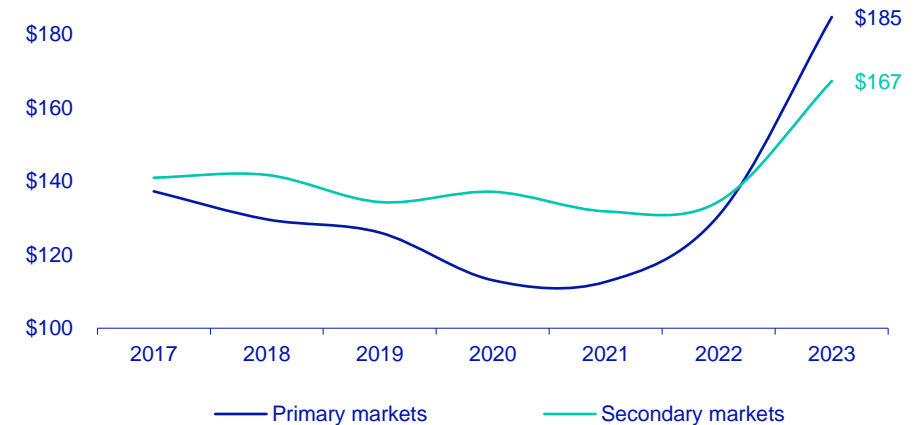


Demand	Supply	Resource management
<ul style="list-style-type: none"> Global leasing continues to reach new peaks with 1,800MW signed in Q1 '24 Demand is pushing global rental rates higher with hyperscaler rents averaging ~\$150 per kw per month in Q1 '24 compared to ~\$100 just two years ago AI queries (Chat GPT, Google's Gemini, etc.) are estimated to require 10x the electricity of traditional Google queries, this is expected to support further load demand 	<ul style="list-style-type: none"> Industry-wide supply is expected to grow 12-14% annually until 2028 to accommodate digitalization and AI-power demands This would increase load capacity by ~15GW globally with 12GW estimated as currently in development across 63 markets Cloud providers have already spent a collective \$260 billion on data center infrastructure^(a) in 2023, this number is expected to rise by 17% in 2024 APAC markets are reaching the scale of other global markets with India, Singapore, Sydney and Hong Kong quickly approaching the 1GW mark 	<ul style="list-style-type: none"> Land pricing is steadily rising in response to the increased demand for new data centers in areas with available power, connectivity, zoning and water infrastructure The grid's renewable energy mix is expected to climb above 30% in top global markets such as North America, Europe, Asia and Latin America leading out of 2023 with the largest hyperscaler tenants committing to reducing their carbon footprint Water-cooling for AI-deployments is expected to make water availability a greater focus for DC development going into the future

Vacancy rates in top global markets^(b)



US wholesale colocation rental rates over time^(c)



(a) Includes capital spending of the 11 largest global cloud service providers in 2023 including Alibaba, Amazon, Apple, Baidu, ByteDance, Google, IBM Cloud, Meta, Microsoft, Oracle and Tencent.

(b) Top markets for the following territories include- US: Atlanta, Chicago, Dallas / Fort Worth, Northern California, Northern New Jersey, Northern Virginia, Phoenix, Portland. Europe: Amsterdam, Dublin, Frankfurt, London, Paris. Asia-Pacific: Hong-Kong, Singapore, Sydney.

(c) Primary market include Northern Virginia, Dallas / Fort Worth, Chicago, Silicon Valley, Phoenix, Atlanta, Hillsboro, and the New York Tri-State area. Secondary markets include Central Washington, Austin / San Antonio, Southern California, Seattle, Houston, Denver, Minneapolis, and Charlotte / Raleigh.

Source: Green Street Research, CBRE Research, Dell'Oro Research, EPRI Research, Cushman & Wakefield

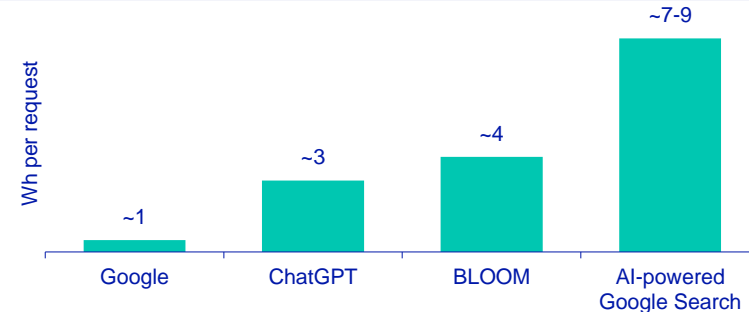
CRE: Market Spotlight - Data Center



- Power demands related to AI-deployment are expected to multiply compared to traditional search-based queries
- This will push data center power consumption past ~9% of the entire grid's consumption in the US by 2030
- These increased power demands are already pushing data center rental rates past their previous peaks and this trend is expected to continue to the end of the 2020s

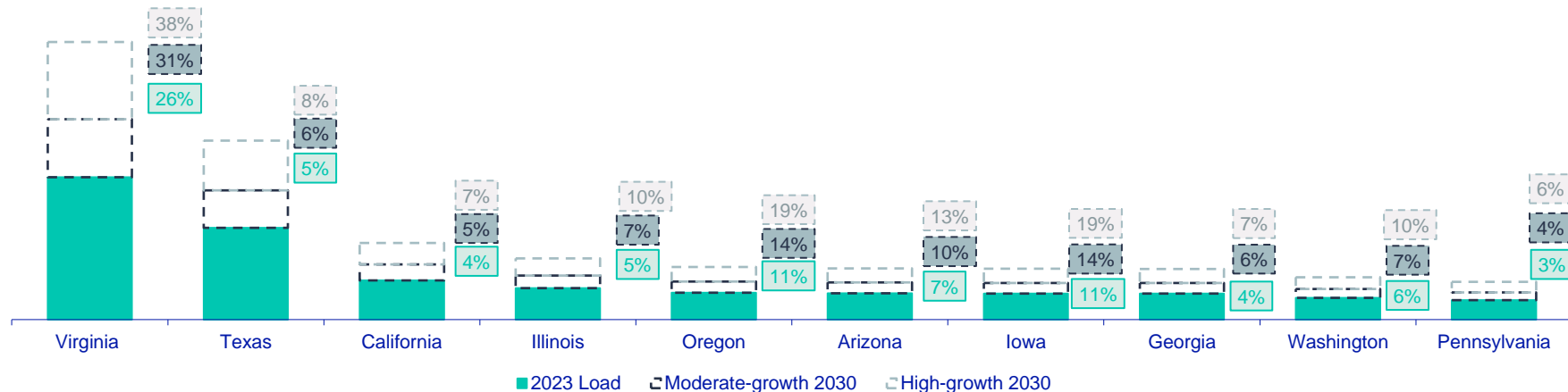
AI request demand promises to more than quadruple data center power load

Internet requests by Wh



Data centers expected to consume a much higher share of electricity in the coming years

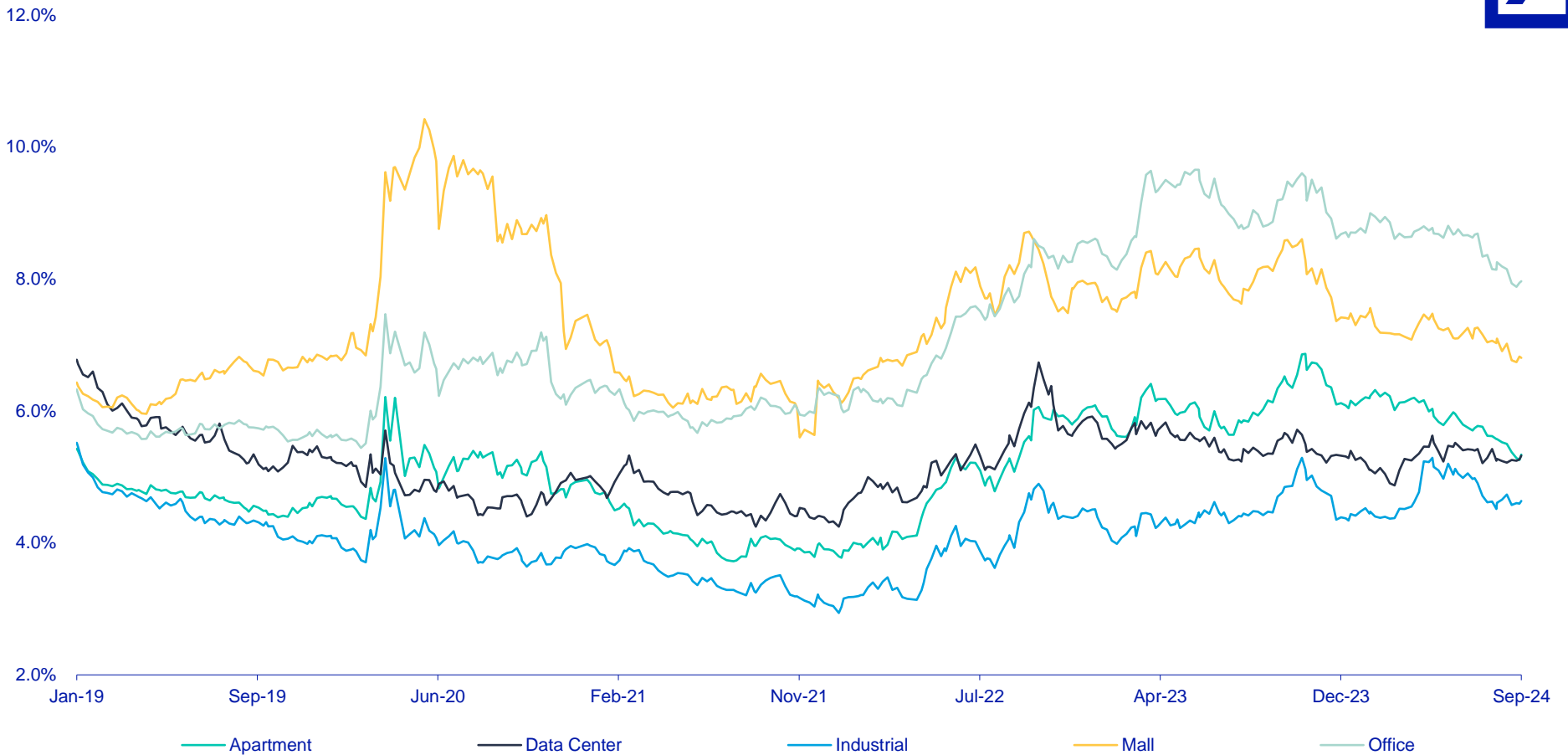
States' data center electricity consumption as a percentage of state supply – Top 10 U.S. states



Spotlight On: Northern Virginia

- Northern Virginia has become the world's largest data center market
- Inventory increased by 391.1MW year-over-year despite Dominion Power's power supply issues
- Public cloud providers and AI companies leased most of the market's space which resulted in a record-low 0.9% vacancy rate
- Rental rates surged by 41.6% year-over-year as tenants secured leases pre-construction to meet capacity needs
- The high electricity demand also boosted power costs by 20.8% year-over-year

CRE: General Market - Cap Rates



Avg. cap rate	Apartment	Data Center	Industrial	Mall	Office
2019	4.7%	5.7%	4.5%	6.5%	5.7%
2020	5.1%	4.9%	4.0%	8.6%	6.5%
2021	4.1%	4.6%	3.5%	6.3%	6.0%
2022	5.0%	5.3%	3.9%	7.5%	7.3%
2023	6.1%	5.5%	4.5%	8.0%	9.1%
YTD 2024	5.9%	5.3%	4.7%	7.2%	8.6%
Current	5.3%	5.3%	4.6%	6.8%	8.0%

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Thank You

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