SUMMIT

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SUMMIT

AFIRE is the association for international real estate investors focused on commercial property in the United States.

ABOUT

Summit Journal is the official publication of AFIRE, the association for international real estate investors focused on commercial property in the United States.

Established in 1988 as an essential forum for real estate investment thought leadership, AFIRE provides a forum for its senior executive, institutional investor, investment manager, and service provider members to help each other become Better Investors, Better Leaders, and Better Global Citizens through conversations, research, and analysis of real estate capital markets, cross-border issues, policy, economics, technology, and management. AFIRE has nearly 180 member organizations from 25 countries representing approximately US$3 trillion in assets under management.

Learn more at afire.org/summit

CONTACT

AFIRE
510 King Street, Suite 240
Alexandria, VA 22314
+1 202 312 1400 | info@afire.org
www.afire.org

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ABOUT THE COVER:

A bird alights an infrastructure fixture in the Bay Ridge neighborhood of Brooklyn, New York. Photo by Nicholas Chase, courtesy of unsplash.com, 2023.

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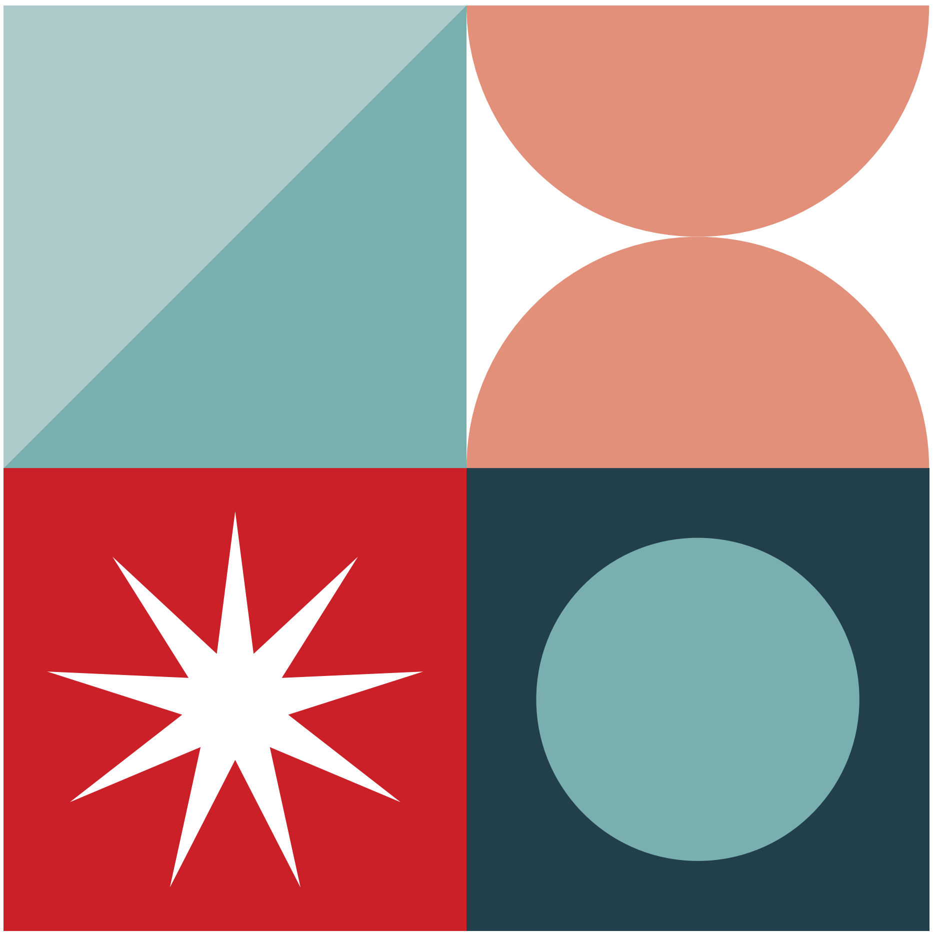
WELCOME TO SUMMIT JOURNAL #16



Between presidential election races, interest rate cycles, geopolitical tensions, emerging technologies, and evolving finance trends (and philosophies of space use) across commercial real estate sectors it's more important than ever for investors to separate signal from noise.

For the most recent issue of Summit Journal, we tried something different, by asking specific contributors at work across all real estate sectors to provide a "summary state of the market at mid-year 2024." This resulted in our first ever Almanac issue, which we now plan to produce annually. It proved to be a winning formula.

But the real strength of Summit over the past few years has come from the diversity of topics we cover across the board—even going beyond traditional real estate to pull in interdisciplinary insights that both enlighten our readership and serve AFIRE's core historic mission: to help each other become better investors, better leaders, and better global citizens.

With this mission in mind, we're excited to present this latest issue of Summit Journal, in correlation with our Annual Member Meeting in September 2024.

At this time of year, as we wrap up the summer and ramp into Q4, our contributors have both the benefit of retrospection as well as the invitation to informed prognostication as we're all now squarely in planning mode for the multiple futures offered in the year ahead.

As it affects our future-focused thinking, there are perhaps more questions than answers: A contentious US presidential election, just around the corner. Unpredictable interest rate cycles and inflationary pressures. Active warfronts in Eastern Europe and the Mideast. Familiar political tensions in the Asia Pacific region. Disruptive technologies and ongoing workforce changes (and related pressures on the energy grid and infrastructure systems). And a rapidly accelerating tidal wave of climate change, already affecting migration, consumption, and economic plans around the world.

The selections we've made for this issue are equally as diverse, raising critical questions, and offering useful ideas, for everything from reimagined value-add strategies and asset trends to AI and infrastructure.

At the back of the journal, we've also included a new section on legal/regulatory issues—a section we expect to see grow over the coming years, as experts from all sides of the industry work together to understand (and stay in front of) our most pressing challenges.

We're incredibly grateful to welcome back Yardi as a sponsor for this issue. Many AFIRE members and the broader Summit readership count on Yardi for the type of insights we've collected here. We're also grateful to our contributors, who are pushing the conversation—and the overall AFIRE platform—to the cutting edge of thought leadership in commercial real estate.

But most importantly, now that we're at Issue #16, we're grateful to you for making this conversation real.

Benjamin van Loon
Editor-in-Chief, Summit Journal
AFIRE

CONTRIBUTORS

AFFINIUS CAPITAL (P. 46)
affiniuscapital.com

Mark Fitzgerald, CFA, CAIA
Head of North American Research

Jeff Fastov
Co-Head of Credit Strategies

AFIRE
afire.org

Gunnar Branson
CEO and Publisher

Benjamin van Loon
Communications Director
and Editor-in-Chief

ALPACA REAL ESTATE (P. 14)
alpacarealestate.com

Daniel Carr
Co-Founder & Managing Partner

Andrew Peng
Investor & Head of Research

BEACH ENCLAVE (P. 80)
beachenclave.com

Alia Peragallo
Real Estate Development Associate

AFIRE Mentorship Fellow, 2024

BRIDGE INVESTMENT GROUP (P. 60)
bridgeig.com

Jack Robinson, PhD
Managing Director, Chief Economist
and Head of Research

Morgan Zollinger
Director, Head of Market Research

CAPITALAND INVESTMENT (P. 6)
capitaland.com

Michelle Lee
Managing Director, Private Funds (Data Center)

Eugene Seo
Managing Director, Data Center

Wayne Teo
Senior Executive, Private Equity Real Assets

CBRE INVESTMENT MANAGEMENT (P. 52)
cbreim.com

Tania Tsoneva
Head of Infrastructure Research

DENTONS (P. 100)
dentons.com

Gary A. Goodman
Partner

Gregory Fennell
Partner

Jon E. Linder
Partner

GROSVENOR (P. 22)
grosvenor.com

Brian Biggs, CFA
Vice President, Research and Strategy

Ashton Sein
Senior Research Analyst

MIT CENTER FOR REAL ESTATE (P. 36)
cre.mit.edu

Jacques Gordon, PhD
Executive in Residence and Lecturer

NEW YORK LIFE REAL ESTATE (P. 68)

newyorklifeinvestments.com

Stewart Rubin
Senior Director, Head of Strategy and Research

Dakota Firenze
Senior Associate

PILLSBURY (P. 106)

pillsburylaw.com

Andrew J. Weiner
Partner

Brian E. Finch
Partner

Aimee P. Ghosh
Partner

Samantha Sharma
Senior Associate

Sarah Hartman
Law Clerk

PTB (P. 74)

ptbankers.com

Paul Stanton
Co-Founder & Partner

RAYMOND JAMES (P. 94)

raymondjames.com

Shaun Libou
Director

RELATED MIDWEST | RELATED COMPANIES (P. 36)

relatedmidwest.com

Yizhuo (Wilson) Ding
Development Associate

RCLCO FUND ADVISORS (P. 30)

rclco.com

Nolan Eyre
Research Analyst

Scot Bommarito
Senior Research Associate

William Maher
Director, Strategy & Research

SOLARKAL (P. 86)

solarkal.com

David Wei
Vice President of Finance and Operations

Michael Conway
Project Delivery Manager

TF CORNERSTONE (P. 74)

tfc.com

Donal Warde
Director of Special Projects

PUBLISHER
Gunnar Branson
CEO, AFIRE
gbranson@afire.org

EDITOR-IN-CHIEF
Benjamin van Loon
Senior Communications Director, AFIRE
bvanloon@afire.org

DESIGNER
Campbell Symons Design
campbellsymons.com

LEARN MORE at afire.org/summit/summiteditboard

GLOBAL CONSUMPTION

Michelle Lee
Managing Director, Private Funds (Data Center)
CapitaLand Investment

Eugene Seo
Managing Director, Data Center
CapitaLand Investment

Wayne Teo
Senior Executive, Private Equity Real Assets
CapitaLand Investment

Insatiable appetite for data throughout the APAC region is fueling the growth of Data Centers as a new economy asset class. As global demand for digital services continues to accelerate, the importance of the sector will grow in kind.

From 5G mobile to Zoom conferencing, and from TikTok to video streaming, global consumption and processing of digital products continue to accelerate, leading to surging demand for new data center (DC) capacity for data to be stored and processed.

While cloud computing is today the primary driver for DC demand, the rise of artificial intelligence (AI) learning and applications has become an additional demand driver. As operators prepare for an explosion in AI uptake, they have therefore embarked on a huge buildout of capital-intensive infrastructure to host the large number of specialized semiconductors the technology requires. In addition, there has been rapid expansion into peripheral locations able to offer both land and power resources required to accommodate escalating infrastructure needs.

The revolution in the scale at which data is being used and managed is fundamentally a global phenomenon, but nowhere is it unfolding as rapidly as in Asia Pacific (APAC) markets. Regional economies are not only growing faster and from a lower base, but they also have a cultural affinity for digitized business and technology adoption. In addition, the multitude of distinct regulatory jurisdictions across the region means data users must comply with a larger number of country-specific data protection policies compared to the West, driving a shift towards greater data localization. Together, these factors are creating new opportunities for early-stage investment in what remains an emerging regional asset class.

Demand in the APAC region is equally strong for both dedicated and colocation DCs. Singapore, Tokyo, Osaka, Seoul, and Sydney are identified as key markets for new DCs, with the major Indian cities of Mumbai, Bengaluru, and Chennai also showing promise due to growing digital services sectors, strong government support, and robust long-term economic prospects.

AN ESSENTIAL REAL ASSET: DCS IN A THRIVING DIGITAL ECONOMY

Soaring global demand for data storage and processing is making DC infrastructure a key component of the ongoing fifth industrial revolution, driven primarily by surging AI requirements and the adoption of cloud services.[1] As a result, network providers and technology multinationals are now churning out ever-larger new facilities to accommodate expanding data storage and processing infrastructure.

While industry growth is strong globally, this revolution is more apparent in APAC markets, where DCs have emerged as a critical asset class for institutional investors.

1. NAVIGATING THE TRENDS DRIVING DC DEMAND

Secular and structural drivers

Rapid growth in global data consumption and processing are the main demand drivers for new DC capacity and services. They are a product of several secular trends:

- Surging consumption of digital content, including videos, social media and music
- Widespread adoption of digital communications platforms – a trend expedited by the pandemic,
- Development of smart cities[2]
- Ongoing expansion of the digital economy

In addition, demand from global technology players, as well as growing digitization among businesses, are also boosting appetite for cloud adoption and digital services. Finally, cloud operators are expanding their range of software services to attract and retain customers, including via managed cloud, private cloud, and cybersecurity applications used for risk management.

EXHIBIT 1: APAC DC GROWTH IS DRIVEN BY FIVE KEY SECULAR & STRUCTURAL TRENDS

DIGITAL TRANSFORMATION

Transformation Organizations in APAC expected to generate around 43% of revenue from digital products, services, and customer experiences by 2027.

EMERGING TECHNOLOGIES

Data-heavy technologies, including **AI, 5G technology and IoT,** will become more mainstream and ubiquitous across platforms.

INCREASED CONNECTIVITY

Faster and more efficient data exchange and communication will be delivered by hyperconnected **DCs with direct access to cloud providers.**

DATA PROTECTION & CYBERSECURITY

Tighter data protection policies encourage **onshoring and localisation of data,** especially given rising geopolitical tension in some APAC markets.

SUSTAINABILITY

DCs with **embedded green solutions** will generate fewer carbon emissions and potentially reduce operating costs.

Source: Lenovo & AMD – "CIO Technology Playbook 2023", JLL, CLI PERA Research, June 2024

Cusp of an AI-driven revolution

Even as appetite for cloud-based digital services continues to grow, the recent emergence of AI has now become the industry's truly disruptive force, with the explosion of AI-enabled services following the introduction of ChatGPT in late 2022, creating a new catalyst for higher bandwidth and cloud-hosting DC infrastructure.[3]

The market for generative AI is projected to experience a remarkable 32-fold increase over the coming decade alone, driven by the development and uptake of AI across the global economy.[4] In particular, given the proficiency of generative AI in producing significant quantities of content, businesses focused on creating analytical or creative material are likely to be key consumers of these new services.

The market for generative AI is projected to experience a remarkable 32-fold increase over the coming decade alone, driven by the development and uptake of AI across the global economy.

The large number of new graphics processing units (GPUs) required for training generative deep-learning AI models has increased the size and energy intensity of associated IT infrastructure, fueling demand for a new generation of high-capacity, cutting-edge DC facilities. The snowballing size of new DC facilities and campuses, with the majority constructed with capacities in the 20 megawatts (MW) to 50MW range—and some exceeding 100MW—is significantly greater than the 10MW to 20MW DCs commonly seen in previous development cycles. Such notable increases in capacity are in turn encouraging innovation in the design, management, and outfitting of new DC facilities.

2. THE GOLDEN OPPORTUNITY IN APAC

World's largest colocation market

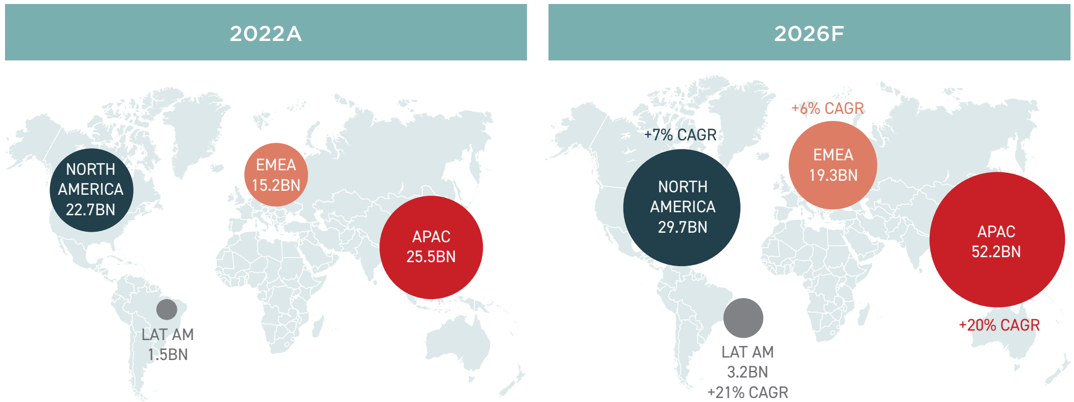
Colocation DCs are fully fitted facilities designed to host multiple customers, including cloud players and small and large enterprises. The APAC colocation market represents 39% of the global total and has an estimated value of $26 billion, making it by far the world's largest. It is expected to double in size by 2026, as APAC digital organizations continue to expand significantly faster than their peers in the Americas and EMEA. To achieve this, a significant volume of new investment will be needed in both dedicated and colocation DCs.[5]

APAC's demographic advantage

APAC's enormous population and swelling internet user base cement its status as a highly attractive destination for DC investment. Its user base has grown sevenfold since 2005, compared to the growth of 1.9x in the Americas and 1.8x in Europe over the same period. Going forward, APAC markets should continue to lead, underpinned by further increases in internet adoption given the lower penetration rates in the region.

Currently, APAC's network infrastructure remains structurally undersupplied, particularly in more populous sub-regional hubs. APAC's market share of approximately 28% of worldwide bandwidth usage is therefore projected to more than double between 2023 and 2026, meaning DCs that are focused on improving interconnection nodes across the region will be able to offer clients a competitive advantage when establishing digital core, integrating digital ecosystems, and deploying digital edge strategies.[7]

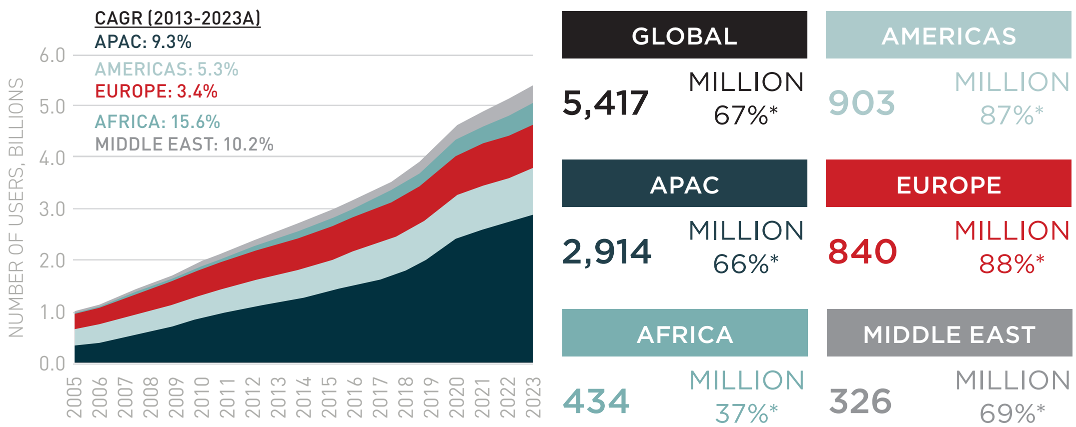
EXHIBIT 2: COLOCATION MARKET SIZE – BY REGION (2022A TO 2026F)



Note: (*) Colocation market size includes carrier-neutral colocation DCs and built-to-suit DCs where capacity is made available to customers. Figures exclude self-build DCs which are purpose-built for sole user and not available to customers.

Source: CBRE, CLI PERA Research, June 2024

EXHIBIT 3: APAC'S GROWING INTERNET USER[6] BASE FURTHER DRIVES DEMAND



Note: (*) Internet penetration rate, data as of 2023

Source: ITU World Communication, CLI PERA Research, June 2024

> APAC's population base has grown sevenfold since 2005, compared to the growth of 1.9x in the Americas and 1.8x in Europe over the same period.

Tighter data protection fuels additional growth

New data protection policies and cybersecurity laws[8] introduced recently across individual APAC markets are another catalyst for DC demand because, in contrast to the more uniform regulatory environments in the US and Europe, they encourage regional governments and corporations to view data as a strategic asset. The resulting shift towards data localization, onshoring, and reshoring is therefore poised to boost demand for secure, onshore data storage systems.

The approach taken in Japan, Singapore, and Malaysia demonstrates that balancing data protection with pragmatic regulation can foster regionalization. By catering to specific jurisdictional requirements, while also aligning with global standards, these markets have managed to capture significant regional DC demand by offering a decentralized, yet cohesive data infrastructure network across the APAC region. Regulatory predictability and alignment with international norms have made these locations appealing for long-term investments and also provide clear pathways for market entry and exit.

EXHIBIT 4: DATA PROTECTION REGULATORY HEAT MAP BY APAC MARKET[9]

Source: Hogan Lovells, CLI PERA Research, June 2024

EXHIBIT 5: A MENU OF DC INVESTMENT & DEVELOPMENT MODELS

	SHELL & CORE	POWERED SHELL	FITTED DC	FULLY OPERATIONAL
KEY CHARACTERISTICS	Landlord owns or develops the DC to "shell & core" status and leases the bare shell space to a DC operator DC operator invests in power, mechanical & electrical (M&E) fit-out, and capital expenditure (CapEx)	Landlord either owns or develops the DC to "shell & core" status and delivers access to power and fiber connectivity Landlord leases the facility to a DC operator for rent plus a premium for power DC operator invests in M&E fit-out, and CapEx	Landlord is a specialist investor or DC operator who delivers the shell, power, M&E fit-out, and CapEx The facility is leased to a single hyperscale customer or a DC operator which subleases to several large customers Customers pay rent based on committed power capacity; Electrical cost is passed through to customers	Investor is (or partners with) a DC operator which delivers the shell, power, M&E fit-out, and CapEx DC is let to customers including hyperscale, cloud providers and small to large enterprises Investment requires specialist operational capability
LEASE STRUCTURE	Triple net lease	Triple net lease	Triple net lease Service-level agreements	Service-level agreements
TYPICAL LEASE TERM	15 Years	15 Years	Wholesale: 5-10 years; Hyperscale: 10-15 years	Retail: ~3 years; Wholesale: 5-10 years; Hyperscale: 10-15 years

Note: DC models can be applied to colocation, hyperscale and edge DCs, and are not mutually exclusive.

Source: CBRE, CLI PERA Research, June 2024

3. DCS EMERGE AS A NEW APAC INSTITUTIONAL ASSET CLASS

From 2019 to 2023, transactions involving APAC Data Centers rose to approximately US$22 billion—or almost 2.4 times the level recorded over the preceding five years.

A platter of investment options

Given its unique and rapidly evolving nature, the DC industry offers a spectrum of options for both operators and investors, allowing it to cater to varying preferences and risk appetites.

This is one reason for the notable uptick of interest in the DC sector among institutional investors, as they look to:

Pivot towards alternative asset classes that are more resilient to macroeconomic headwinds

- Align with strong secular, new economy tailwind
- Add assets that offer inflation protection and are complementary to existing portfolio exposure
- Go green with eco-friendly DCs that align with their ESG values and regulatory criteria

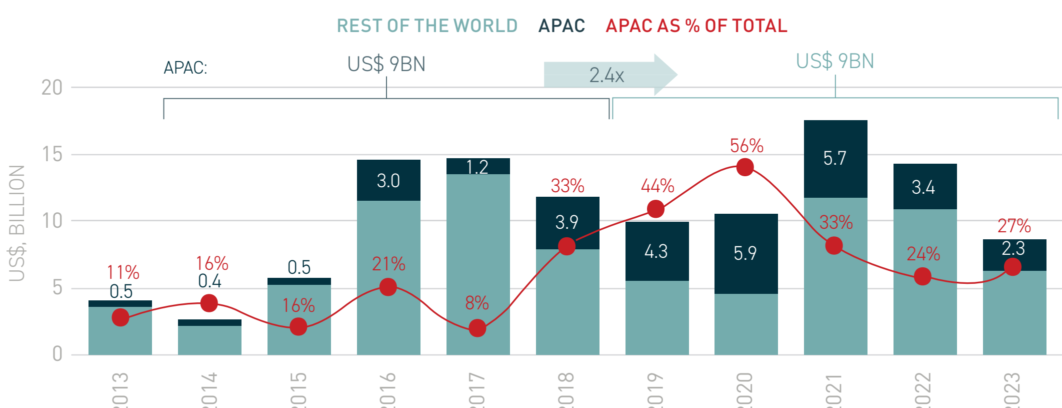
DCs becoming investment portfolio staples

The shift in institutional investor interest towards DCs is especially evident in APAC markets. From 2019 to 2023, transactions involving APAC DCs rose to approximately $22 billion—or almost 2.4 times the level recorded over the preceding five years—even as markets in general stagnated during the COVID-19 pandemic.

Surging volumes are the result of rising interest among institutional investors drawn to the sector's resilience, long-term growth prospects, and more recently an extensive array of exit opportunities, including to DC operators, private equity funds, publicly traded real estate investment trusts (REITs), infrastructure investment trusts (InvITs), and sovereign wealth funds, among others.

However, despite this heightened interest, the notable lack of stabilized DCs available for sale in the region means the most promising opportunities for investors lie in developing new DC—a strategy that can both satisfy new demand and potentially yield higher returns.

EXHIBIT 6: GLOBAL DC TRANSACTION VOLUME – APAC (2013 TO 2023)



Source: MSCI, Real Capital Analytics, CLI PERA Research, June 2024

4. CHARTING THE COURSE THROUGH FUNDAMENTALS AND PROSPECTS

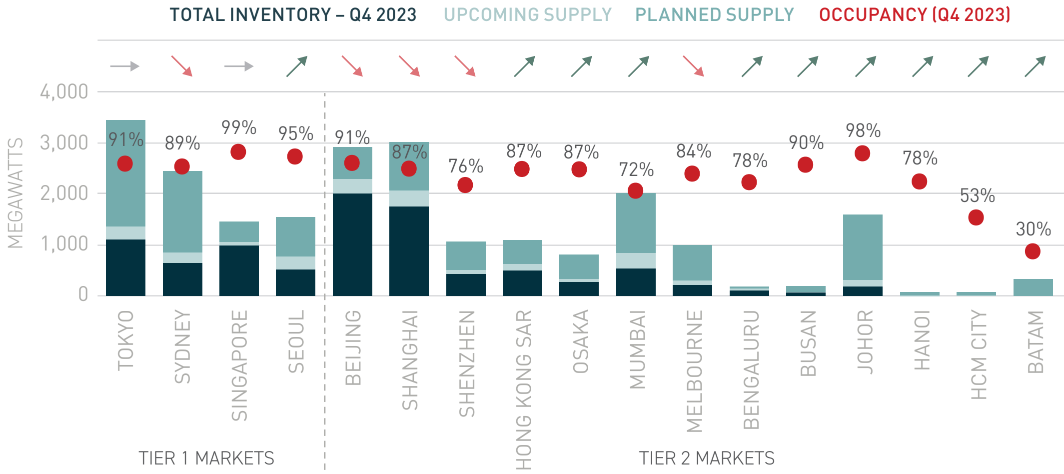
Demand-supply dynamics remain robust

Although the APAC region already boasts an outsized internet user base as well as the world's largest colocation market, its DC industry remains less mature compared to other parts of the world. This suggests robust growth potential, even before considering rising user demand.

Several APAC markets are set to double their DC inventory by 2025, primarily driven by Tier 1 cities such as Tokyo, Seoul and Sydney *(Exhibit 9)*. These cities, once dominated by domestic telecom companies and conglomerates, are now seeing an influx of international DC operators in partnership with capital providers and / or strategic investors.

In addition, expansion into selective secondary markets is also underway. Johor, Malaysia, for example, is benefitting from spillover demand in the region caused by constrained capacity due to government regulations in its neighboring market, Singapore.

EXHIBIT 7: MARKET INVENTORY, OCCUPANCY AND PRICING GROWTH BY APAC ECONOMY



Source: CBRE, Cushman & Wakefield, DC Byte, CLI PERA Research, June 2024

Major developed markets poised for future growth

A proprietary multi-criteria decision analysis of 17 key markets in the APAC region identified Singapore, Tokyo, Osaka, Seoul and Sydney as the most promising destinations.[10] Common characteristics include robust macroeconomic and business environments, a high degree of digital literacy, availability of world-class infrastructure, and healthy demand-supply conditions for new DC capacity.

Otherwise, Hanoi and Ho Chi Minh City (Vietnam), along with Batam (Indonesia), rank lower, primarily because their status as emerging markets acts as a drag on short-term upside.

In India, while Mumbai and Bengaluru are also classified as emerging markets, they decisively outperform their regional peers in the above analysis for several reasons. For one, their economies have potential for enormous growth from a low base (in part due to growing capital migration from China); in addition, they are seeing rapid adoption of digital technologies by domestic businesses and consumers.

5. STRATEGIC IMPERATIVES AND CONSIDERATIONS

Critical elements in DC location and site selection

As in other markets worldwide, access to power and land have long been important issues for DC investors. Recently, however, power availability has taken center stage as a crucial determinant for DC locations, closely followed by a growing emphasis on sustainability.

Greening strategies for DCs

In particular, the rapid expansion of the regional DC industry, together with the energy-intensive nature of AI workloads, has added further fuel to long-standing concerns over the environmental impact of DC infrastructure[11], bringing DC users and operators under increasing pressure to reduce their carbon footprints.[12]

As a result, DC users are adopting new server designs and energy-efficient hardware that ensure more effective and energy-efficient use of computing resources. In addition, operators are increasingly using advanced cooling and airflow management systems that can optimize temperature regulation and curtail energy waste, as well as renewable energy sources such as solar or wind power that reduce reliance on fossil fuels. By embracing green solutions, DC operators are able not only to mitigate their impact on the environment, but also cut operational and maintenance costs.[13]

Risks remain

Although capacity shortages and rapidly rising demand have created favourable investment conditions, the APAC DC sector is not without risks. These include:

- **Cyclical demand**: Global economic shifts or geopolitical factors represent significant threats to DC asset performance, both individually and collectively. Economic downturns, for example, can lead to reduced business IT spending, which in turn can impact take-up and occupancy rates.
- **Regulatory compliance**: Data privacy and security regulations vary widely from market to market and are subject to rapid change, with potentially serious consequences for DC infrastructure demand. Additionally, compliance with local rules is essential to secure permits and regulatory approvals and to meet environmental and safety criteria. As a result, any change in local regulatory standards during the development or operational phases may necessitate costly modifications.
- **Obsolescence**: Infrastructure must be future-proof and AI-ready. The rapid evolution of technology, regulations, and demand for new infrastructure typologies means that obsolescence risk is real. New DC infrastructure should therefore be constructed to the extent possible to allow for potential upgrades that will enable future operational efficiency, security, and cost-effectiveness.
- **Scope of occupier base**: The dominance of major cloud operators sets a limit on the available pool of large customers, especially if they opt in future to build and manage their own DC infrastructure. The market share and capacity requirements of cloud operators also give them significant pricing power that can affect negotiations with landlords and DC providers across the industry.
- **Specialized capability**: Various risks associated with the complexities and scale of DC operations, such as difficulty securing serviced sites, access to power supplies, and a range of operational, financial and regulatory concerns, underline the importance of partnering with DC developers that have a strong network and expertise in these sub-domains.

APAC IS WHERE CONNECTIVITY MEETS OPPORTUNITY

As demand for digital services continues to accelerate in the APAC region, the importance of the DC sector will only rise further. Each key market within the region has unique characteristics, offering investors a wealth of opportunities to tap into this fast-growing new economy sector. Given that DCs are a specialized asset class, it is crucial for investors to collaborate with dedicated partners who possess deep product knowledge and an intimate understanding of the markets in which they operate.

ABOUT THE AUTHORS

Michelle Lee is the Managing Director, Private Funds (Data Center), for CapitaLand Investment. Eugene Seo is the Managing Director, Data Center, for CapitaLand Investment. Wayne Teo is a Senior Executive, Private Equity Real Assets, for CapitaLand Investment.

NOTES

[1] The fifth industrial revolution, also known as “Industry 5.0,” is an emerging phase of industrialization with emphasis on key elements including automation, robotics, machine learning, Internet of Things (IoT), additive manufacturing, and quantum computing.

[2] “Finding Opportunity in Volatility Within Asia Pacific,” n.d. https://www.capitaland.com/en/about-capitaland/newsroom/Perspectives/2023/Finding_Opportunity_in_Volatility_within_Asia_Pacific.html.

[3] World Economic Forum. “The Future of Jobs Report 2023,” March 28, 2024. https://www.weforum.org/publications/the-future-of-jobs-report-2023/. More than 75% of 803 global companies surveyed will integrate big data, cloud computing, digitalization, and AI technologies by 2027.

[4] Bloomberg. “AI’s Business Impact To Extend Far Beyond Nvidia,” August 2023. Accessed August 27, 2024. https://www.bloomberg.com/professional/insights/data/ais-business-impact-to-extend-far-beyond-nvidia/. Projections indicate a 42% CAGR increase from $40 billion in 2022 to $1.3 trillion by 2032.

[5] Equinix. “Equinix 2023 Global Tech Trends Survey,” 2023. Accessed August 27, 2024. https://www.equinix.com/resources/infopapers/equinix-tech-trends-survey. In a recent poll, 80% of APAC companies surveyed indicated plans to expand into new regions, countries, and cities in the next 12 months. Of these, 46% plan to build dedicated DCs, while 36% intended to take space in colocation DCs.

[6] Equinix. “The Global Interconnection Index (GXI) 2024,” 2024. Accessed August 27, 2024. https://www.equinix.com/gxi-report.APAC interconnection bandwidth is forecast to reach 9,283 terabits per second by 2026 and reflects a CAGR of 34% between 2023 and 2026.

[7] Recent regulations include Singapore’s Personal Data Protection Act (PDPA); China’s Data Security Law (DSL) and Personal Information Protection Law (PIPL); which took effect in 2021, and Indonesia’s 2022 Personal Data Protection law (PDP law).

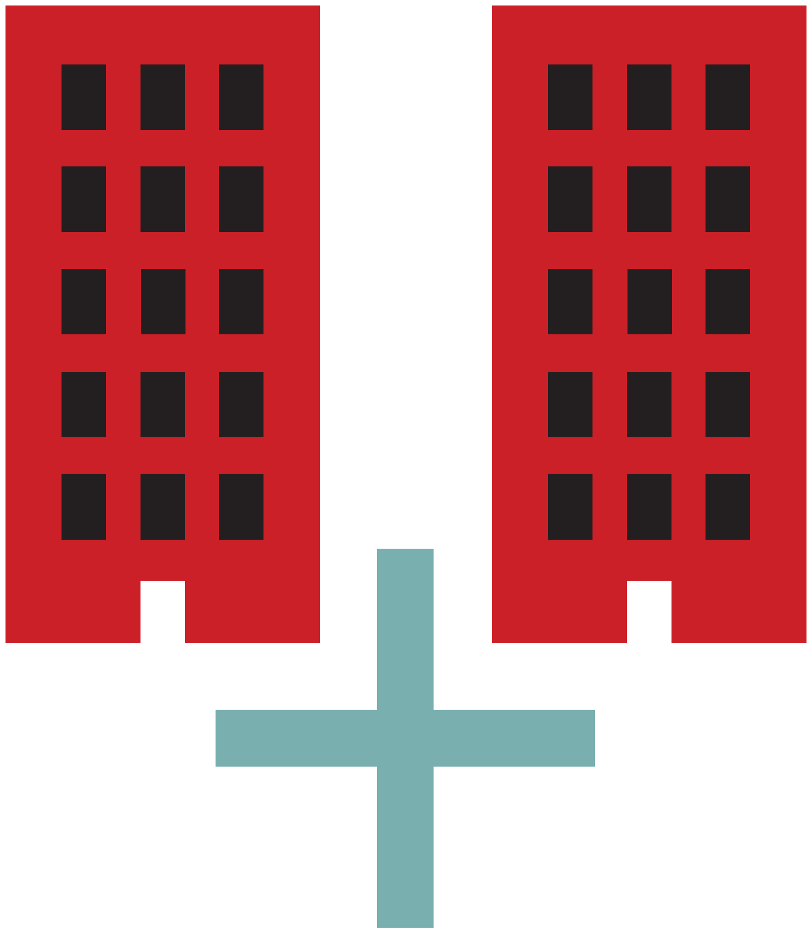
[8] Six criteria applied in the assessment included broad economic factors, inherent business frameworks and risks, state of existing and planned infrastructure, technological readiness, susceptibility to natural calamities, and prevailing conditions in the DC market. The derived rankings are calculated using a proprietary framework that includes the six broad parameters set out above. Each comprises multiple sub-parameters that are assigned a weighting and scored on a predefined scale.

[9] Boston Consulting Group. “Energy Industry Consulting & Strategy.” Accessed August 27, 2024. https://www.bcg.com/industries/energy/overview. DCs consume around 1% to 3% of global electricity usage. For example, DC electricity consumption was 2.5% of the US total (~130 TWh) in 2022 and is expected to triple to 7.5% (~390 TWh) by 2030.

[10] Among global leading DC operators, Digital Realty, Equinix, Schneider Electric, Google Cloud, EdgeConneX and CapitaLand Investment have operations in APAC that embed green solutions as part of their ecosystems.

[11] CapitaLand Investment operates five colocation DCs across Europe that procure 100% of its electricity from renewable sources.

DISTINCT VERTICALS



Daniel Carr
Co-Founder & Managing Partner
Alpaca Real Estate

Andrew Peng
Investor & Head of Research
Alpaca VC

AI's impact in real estate can be traced along two distinct verticals: In-Asset, where platforms enhance value through property performance, and Out-of-Asset, where platforms transform the workflows of the deal ecosystem.

Even as artificial intelligence (AI) has rapidly emerged as a transformative technology across various sectors, the impact of AI in commercial real estate is still nascent and emerging. Broadly, these impacts can be traced along two distinct verticals: **In-Asset**, where platforms are intended to enhance value primarily by improving property performance, and **Out-of-Asset**, where platforms enhance real estate deal ecosystem workflows, particularly within the investment and asset management teams.

It is important to note that these technologies are still early and have yet to become market norms. New platforms are being introduced every month, some with competing or contradicting value propositions. However, as quickly as these tools are being rolled out, they are also beginning to prove their value. Early adopters across either vertical can position themselves at a competitive advantage, which can lead to outsized returns for investors. This article will discuss some of the more promising tools that are already beginning to return value and discuss what the industry can look forward to as the sector continues to mature.

AI OVERVIEW

AI has been operating in the background of different operating systems for years, but the emergence of consumer-friendly AI tools, such as ChatGPT, has created an inflection point that has accelerated public familiarity with AI, prompting exploration and creativity around alternative AI use cases.

One of the logical applications of AI is integration into established business models with repeatable, often tedious tasks that rely on large datasets. Traditional, rule-based software operates based on predefined instructions and is best suited for static, repeatable tasks. On the other hand, AI is able to simulate human-like reasoning to adapt and make context-aware decisions. Within real estate, where robust data has been captured for decades, AI capabilities are finally able to transform this disparate information into actionable insights.

AI IN INVESTMENT MANAGEMENT

Investment managers frequently encounter the problem of managing an overwhelming amount of information without an effective method of synthesization. For example, McKinsey reported in 2018 that nearly 60% of predictive power in real estate comes from non-traditional variables.[1] Furthermore, organizations without centralized information storage impair their own institutional knowledge, as data is fragmented across different folder systems. AI presents various options to synthesize data and render it readily usable. Among the most promising applications are the following:

- **Deal Pipeline Management:** AI can prioritize and filter deal opportunities based on predefined criteria, ensuring that deal teams focus on the most promising prospects. This capability can enhance the efficiency of the deal sourcing process and helps identify high-quality investment opportunities more quickly.

- **Relative Value Analysis:** AI-powered platforms can easily sort, organize and analyze the vast amount of information in the "data lake" so that deals can be compared on a relative value basis with the click of a button. Understanding relative value allows the deal team to make quick, informed decisions on which deals to advance to a detailed underwriting stage.

- **Automated Reporting:** AI-powered reporting tools can automatically generate detailed performance reports, consolidating data from various sources. This automation reduces the time and effort required for report preparation, allowing deal teams to focus on strategic analysis and decision-making.

- **Performance Monitoring:** AI tools can track and analyze key performance indicators (KPIs) across different assets. This centralized database creates efficiencies in reviewing portfolio wide metrics and allows for more regular and consistent asset reviews.

- **Negotiation Efficiencies:** AI can streamline the negotiation process by providing transparent scoring for commercial loan applications and other financial assessments. This transparency facilitates quicker decision-making and enhances efficiency.

One pipeline management solution is to create bespoke platforms powered by AI to manage investment opportunities and create institutional knowledge. *Exhibit 2* shows example of this method in the pipeline management framework.

At the institutional level, real estate is already an inherently human capital-efficient industry, with lean deal teams. As a result, rather than building a platform that focuses exclusively on cost or time savings, we've found it more useful to ask: What information do we use to make us better investors, and where can automated data aggregation help us in those decisions?

As an example, Alpaca utilizes a macro-driven thematic investment process to identify two to four sectors of interest. We then focus only on those sectors and markets to generate deep focused deal flow. Therefore, the information we use to make decisions lies in relative value; which property, in the market and sector we like, has the best basis, positioning, and opportunity to outperform? Which transaction has structural alpha to set it apart from the rest?

To create this relative value format, Alpaca Real Estate (Alpaca), evaluated dozens of technology applications and worked closely with Alpaca VC to select the right partners to build a bespoke solution. The output is a thoughtfully customized platform that best fits Alpaca's investment approach and process.

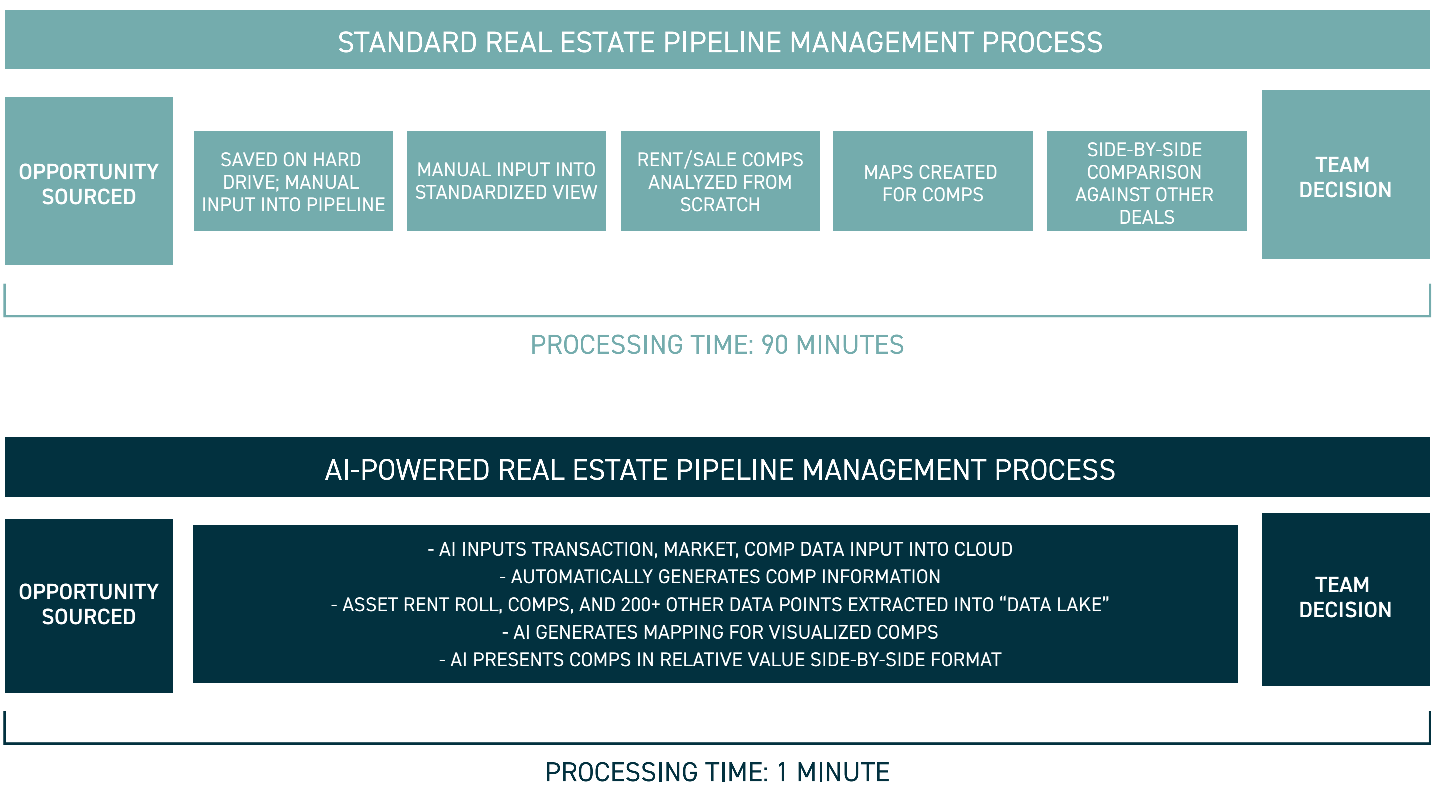
What information do we use to make us better investors, and where can automated data aggregation help us in those decisions?

Typically, pipeline data aggregation falls to the deal team. With mandates that are often time-sensitive, deal teams tend to deprioritize data input, resulting in unstable datasets that lack insights. Instead of hiring additional deal team staff to input data, Alpaca Real Estate worked extensively with Alpaca VC to identify processes and partners that enable creation of a clean data lake that can be easily queried by the deal team, thus enhancing their workflow. The human capital savings is roughly two or three analyst-level employees who would otherwise be solely dedicated to inputting up to a hundred transactions per month.

As illustrated in *Exhibit 1,* this system automates data collection from various sources, cleaning, and organizing into a standardized data lake, which has traditionally been a time-consuming task. Prior to this, in our experience, analysts would spend up to 1.5 hours manually inputting deal information into a static data pool and preparing analytic visualizations. Bespoke AI platforms can eliminate this manual task and automatically scrape more than two hundred data points per transaction, from offering memorandums and financial documents. Visualizing this data through consistent metrics and mapping in a clean interface streamlines the pipeline process, allowing for greatly improved efficiency in initial deal evaluation and data retrieval. The automated process integrates a greater number of deals into the data lake which allows the deal team to reallocate their time to analyzing trends from the amplified base of institutional knowledge. The deal team can use this foundation to understand the relative value of new opportunities with the click of a button.

As an example of this platform in action, Alpaca identified townhome rental product in Dallas, Texas as one area of interest using macro thematic research. The deal team then sourced approximately 35 townhome investment opportunities in the market, all of which were uploaded to the screening platform. One opportunity was a clear outlier: a 7% yield on cost in a highly infill location boasting household income two times the metro average and walkable to a fantastic elementary school. When queried, the average yield in the comp set was 6.25%, indicating a 75BPS yield premium for the subject transaction. Alpaca keyed in on these details and ultimately closed the investment due to the clear relative value opportunity.

EXHIBIT 1: AI ENABLED PIPELINE MANAGEMENT



Source: Alpaca Real Estate

EXHIBIT 2: AI ENABLED PIPELINE MANAGEMENT

Pipeline designed to quickly and efficiently analyze each opportunity to spend time on the deals that are most compelling

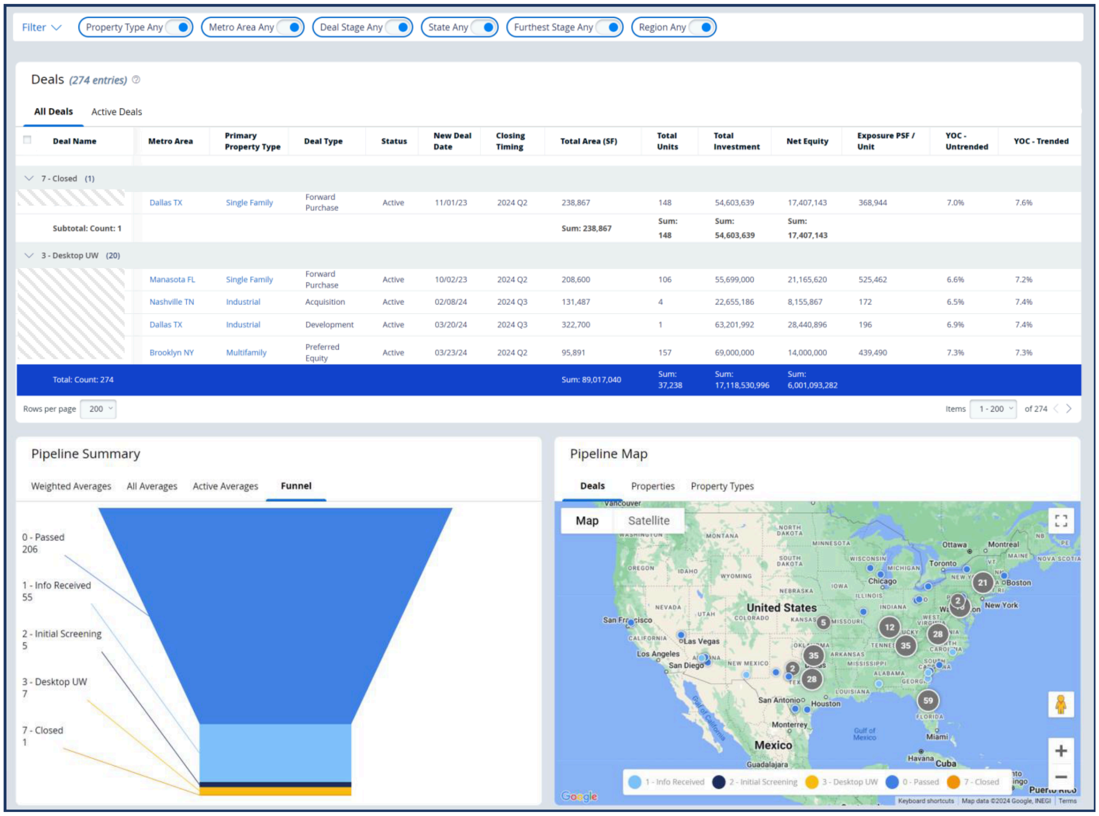
Pipeline management

1 ***Innovative filters***
Easily filter pipeline to re-organize data by property type, geography or deal stage to compare across most relevant metrics

2 ***Consistent deal metrics***
Compare opportunities across the same metrics to determine outliers and where to focus Team's time

3 ***Tracking data summaries***
Track success rate and discipline in process based on number of deals that progress through our proprietary deal stages

4 ***Advanced mapping tech***
Visually understand the depth, composition, and geographic spread of pipeline and platform distribution via interactive and intuitive interface

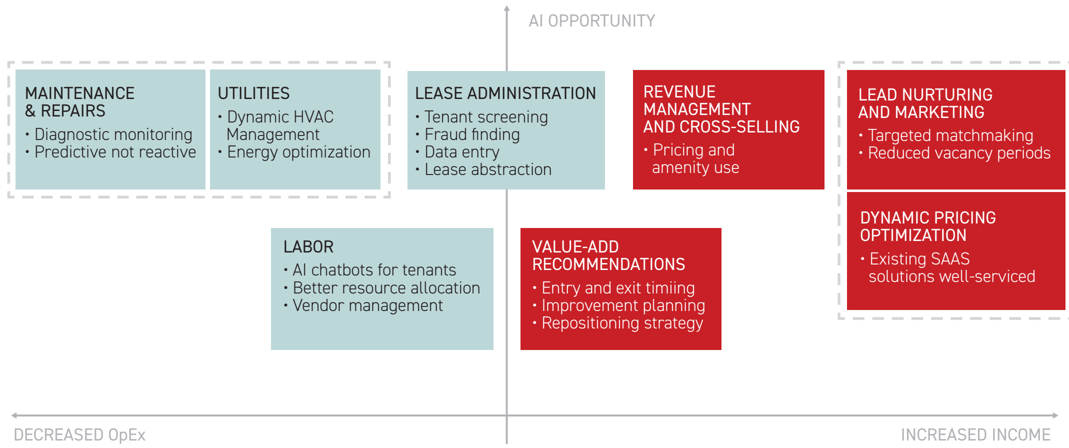


Source: Alpaca Real Estate

PROPERTY SECTOR SPECIFIC IMPLEMENTATION

In-Asset AI tools are platforms designed to enhance property performance. Ideally, the impact of these platforms can be quantitatively measured by optimizing net operating income (NOI) through various means, such as dynamic pricing, predictive maintenance, and energy management. These solutions aim to increase revenue, reduce operating expenses, and improve asset value. Potential AI implementation is more obvious within operating intensive assets but has applications within less intensive assets as well.

EXHIBIT 3: AI TOOLS AND IMPACT ON NOI



Source: Alpaca Real Estate

AI's versatility allows it to be applied across various stages of the real estate value chain. Key applications on the In-Asset side include:

- **Customized Marketing:** AI can access vast datasets to qualify prospective tenants or market specific property attributes that may appeal to an individual. This customized marketing can impact conversion ratios in hospitality and multifamily.

- **Surveillance:** AI enhances security by analyzing surveillance footage in real-time, identifying unusual activities, and alerting security personnel. This capability is particularly valuable in high-traffic areas or properties with complex security needs.

- **Energy Management:** AI-powered energy management systems can monitor and control building systems, optimizing energy use and reducing costs. These systems can also integrate with renewable energy sources, such as solar panels, to further enhance sustainability.

- **Predictive Maintenance:** AI can predict equipment failures by analyzing data from sensors and other sources. This proactive maintenance approach minimizes downtime and reduces the cost of repairs, enhancing overall operational efficiency.

- **Tenant Communication:** AI chatbots and virtual assistants can handle routine tenant inquiries, provide information about lease terms, and even assist with maintenance requests.

The versatility of AI makes it applicable across a wide range of property types, each with its own unique challenges and opportunities. As AI technologies continue to evolve, their applications in real estate will expand, offering new opportunities for efficiency gains, cost savings, and improved management practices.

Importantly, the more landlord control over the asset, the more levers there will be for tech adoption to improve asset performance. "Operating businesses" such as hospitality, multifamily, and single-family rental fall into this category. Net lease businesses on the other hand, such as office or industrial, have thus far seen relatively fewer platforms emerge. Below, we highlight a few examples per category with this distinction in mind.

EXAMPLES OF AI COMPANIES IN USE ACROSS SECTORS

Hospitality

As an operating-intensive asset class, the hospitality sector has embraced AI more than other asset class and still has the most potential to create efficiencies through AI adoption.[2,3] The high-touch and repetitive nature of hospitality creates opportunities for AI in areas like revenue management, guest services, and operational efficiency.

AI Use Case: Revenue management

Duetto is an example of an AI-powered revenue management system that uses real-time data to optimize room pricing based on factors like demand, competition, and market conditions. This dynamic pricing approach has been shown to increase revenue per available room (RevPAR) and overall profitability.[4] Our case studies with Duetto and other AI revenue management platforms exhibited up to a 20% RevPAR uplift.

AI Use Case: Guest experience

Revinate elevates the guest experience through chatbots and virtual assistants that can handle routine inquiries, provide personalized recommendations, and streamline the check-in and check-out processes. While the ROI on an improved guest experience is difficult to precisely measure, it is an important factor in product differentiation. The increased guest interaction improves the guest experience without additional strain for the existing staff.

Multifamily

The multifamily sector has similar elements of operating intensity that present opportunities for AI adoption to drive efficiencies. AI applications range from leasing and tenant management to maintenance and security.

With the many services required to effectively operate a multifamily platform, there is a risk of service redundancy and the integration of AI solutions with existing property management systems.

AI Use Case: Downtime to lease vacancies

Reffie leverages AI to prioritize and automate lead generation and follow-up, potentially reducing the time it takes to fill vacancies.

The application focuses on the prioritization and categorization of leads. The model collects metadata on prospects to prioritize leads in the funnel, paired with an automation platform that allows leasing agents to design playbooks of how they handle leads. This not only improves occupancy rates but also enhances the overall tenant experience by providing timely and personalized communication (halving average availability from 27 to 14 days, per company data).

AI Use Case: Predictive maintenance

Dwellwell is using AI-driven sensor technology to create more efficient maintenance systems. This technology can predict equipment failures and schedule preventive maintenance, which reduces downtime and repair costs. This proactive approach to maintenance not only saves money but also extends the lifespan of equipment.

As AI technologies continue to evolve, their applications in real estate will expand, offering new opportunities for efficiency gains, cost savings, and improved management practices.

Data Center

Data centers are critical infrastructure for the digital economy, and their role has become more pertinent with the increased demand for AI. This spike has led to increased energy consumption and operational complexity that requires real-time optimization of energy management and cooling systems.

AI Use Case: Energy optimization

Phaidra's AI systems continuously learn and adapt to the operational dynamics of a central utility plant, leading to significant improvements in energy efficiency. By optimizing the use of equipment like chillers, boilers, and pumps, Phaidra can reduce energy consumption and lower operational costs.

Office

The office sector is experiencing significant changes, driven by evolving work patterns and the increasing demand for flexible workspaces. AI tools can help optimize office space utilization, manage leases, and improve tenant satisfaction.

As the office sector adapts to new work models, such as remote and hybrid work, AI will play a crucial role in helping property managers and tenants navigate these changes. The ability to quickly adjust office layouts and policies in response to changing needs will be essential for maintaining tenant satisfaction and competitiveness.

AI Use Case: Office occupancy insights

VergeSense provides tenants with comprehensive occupancy insights to determine the most efficient use of space, identify underutilized areas, and suggest reconfigurations to better meet tenant needs. This space use visualization can help landlords in difficult tenant downsizing discussions by clearly articulating utilization.

AI Use Case: Lease abstraction and facility management

FYXT uses AI to digitize complex net leases, creating a streamlined workflow for commercial property operations. As a result, maintenance tracking, tenant communication, and facility management such as vendor payments can flow automatically from one platform.

Industrial

As a less operating intensive business, industrial assets still benefit from AI applications relevant to business operations. AI enhances process automation, predictive maintenance, and operational efficiency which are often central to industrial and manufacturing businesses.

AI Use Case: Logistics management

Envio has created proprietary hardware, software and location technology to improve logistical management. AI solutions for tracking and shipping packages assists in inventory management at industrial properties.

AI Use Case: Cold storage management

Sonicu utilizes an AI-based monitoring system that eliminates manual logging and improves compliance readiness. For spec cold storage in particular, flexibility of temperature zones is important as each tenant can have different specs. AI can monitor and adjust temperature settings in real-time, ensuring that products are stored at the optimal temperature and reducing energy consumption.

AI's ability to analyze vast datasets, automate complex processes, and provide predictive insights makes it an invaluable asset for real estate professionals.

ABOUT THE AUTHORS

Daniel Carr is Co-Founder & Managing Partner of Alpaca Real Estate. Andrew Peng is an Investor and Head of Research at Alpaca VC. Alpaca Real Estate (the "Firm") is a real estate private equity firm where innovation meets real assets, maximizing the potential of traditional real estate investing.

CHALLENGES AND CONSIDERATIONS

The power of AI to inform our decision—both at the property and asset management level—is undeniable. However, with the technology in its infancy, many firms are faced with questions around what tools to utilize, how to invest in the space, and what will impact their bottom line.

We advise firms to start with the end in mind. Create near-term, achievable goals that can have clear KPIs and a monitored budget. Avoid cumbersome, historical datasets and attempts to create all-encompassing solutions. Instead, focus on incremental wins that will lead to firmwide adoption and tangible ROI. Allocate human personnel with clearly defined projects, which they can in turn translate into succinct contract scope of work language with third party vendors.

As with any new technology there is no harm in sample testing. Query a vendor by utilizing a subset of an existing portfolio – get to know the output format, and how that can be translated by property or asset management staff into actionable decisions.

AI has the potential to revolutionize the real estate industry by offering powerful tools for investment management, property management, and sector-specific applications. AI's ability to analyze vast datasets, automate complex processes, and provide predictive insights makes it an invaluable asset for real estate professionals. While challenges such as data privacy, accuracy, and implementation costs remain, the potential benefits of AI in enhancing efficiency, reducing costs, and improving decision-making are significant. As AI continues to advance, its impact on the real estate sector will only grow, creating new opportunities and challenges for industry stakeholders.

NOTES

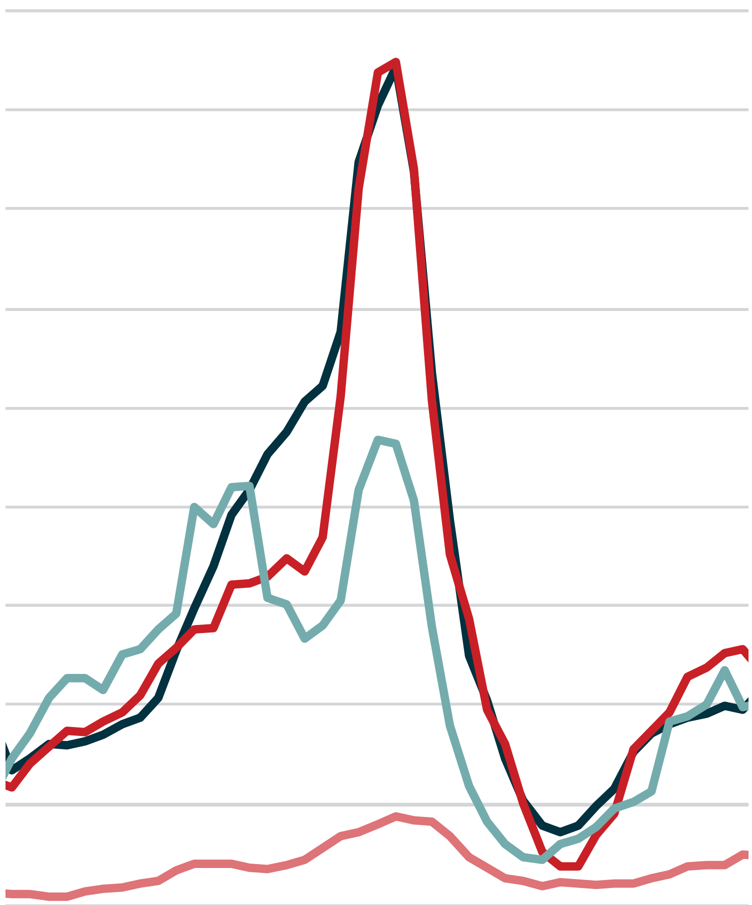
[1] " Getting Ahead of the Market: How Big Data is Transforming Real Estate," McKinsey & Company, October 2018, https://www.mckinsey.com/~/media/McKinsey/Industries/Capital%20Projects%20and%20Infrastructure/Our%20Insights/Getting%20ahead%20of%20the%20market%20How%20big%20data%20is%20transforming%20real%20estate/Getting-ahead-of-the-market-How-big-data-is-transforming-real-estate.pdf

[2] "AI's Transformative Role in the Hospitality Industry," Deloitte, February 13, 2024. https://www.deloitte.com/uk/en/Industries/consumer/blogs/embracing-the-future-ais-transformative-role-in-hospitality.html

[3] "AI in Hospitality: Use Cases, Applications, Solution, and Implementation," LeewayHertz, August 17, 2024 https://www.leewayhertz.com/ai-use-cases-in-hospitality/

[4] "Duetto Data Shows Promising Year End for Global Hotel Markets," Hotel Tech Report, July 18, 2023 https://hoteltechreport.com/news/duetto-data-shows-promising-year-end-for-global-hotel-markets

DIVERGING FORTUNES



Brian Biggs, CFA
Vice President, Research and Strategy
Grosvenor

Ashton Sein
Senior Research Analyst
Grosvenor

In the wake of the pandemic, it has become almost cliché to call office "the new retail"—but even as office has seen profound disruption, direct comparisons between the two sectors might be distracting from more clear-minded assessments.

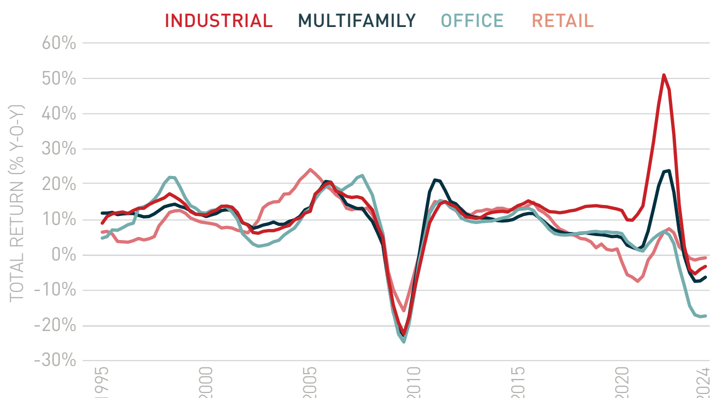
Since the start of the pandemic, it has become a common refrain in the real estate conference circuit that "office is the new retail". It is easy to see why; office has seen profound disruption from higher adoption rates of remote working, similar to the disruptive impact of e-commerce on retail.

While the comparison seems straightforward at first blush, there are some fundamental differences between the property types. To our knowledge there has been little systematic research comparing the post- GFC disruption in retail to that of office post-pandemic. This article provides a structured framework and some analytical categories to the comparison. We juxtapose retail against office for the supply response post-disruption, experience with the disruptive trend, capital flows, property performance by location, and changes in relationships with key economic variables post-disruption. In doing so, we hope to shed light on how instructive the comparison between property types is and offer a guide to where office might go next.

THE CURRENT STATE OF PLAY: RETAIL UP, OFFICE DOWN

The contrast between office and retail is particularly stark today because of their recently diverging fortunes. After years of combatting oversupply, a narrative that brick-and-mortar retail was dead, and the unrelenting growth of online shopping, retail is having its day in the sun again *(Exhibit 1)*.

EXHIBIT 1: REAL ESTATE TOTAL RETURNS BY REAL ESTATE PROPERTY TYPE



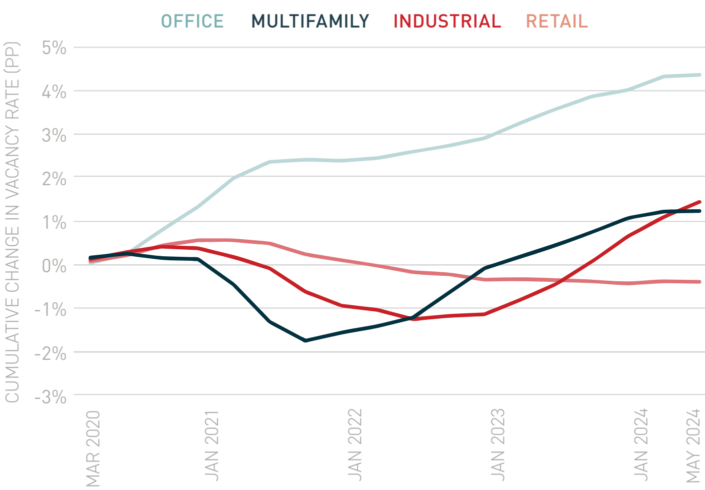
Source: NCREIF, Grosvenor Research

Total returns for all major property types dipped into the negative over the last year, driven lower by a combination of higher interest rates, rising vacancy, and changes in supply. While retail total returns have been marginally negative over the last year at around -1% year-over-year, it remains the best performing major real estate property type. In fact, the last year has been the longest stretch of retail total return outperformance since the GFC, when retail proved to be quite defensive in the downturn. Office, by contrast, has seen a sharp fall, with total returns averaging -17% year-over-year.

Retail's relative outperformance is also apparent when looking at vacancy. *Exhibit 2* shows the cumulative change in the vacancy rate across major commercial real estate property types. Retail saw a modest rise in vacancy at the beginning of the pandemic, but to date it is the only major property type in which vacancy today is lower than it was at the start of 2020. Office vacancy, by contrast, has steadily increased over that period, by over four percentage points. Even multifamily and industrial have seen some rise in vacancy due to the development boom over the course of the pandemic.

Retail is the only major property type in which vacancy today is lower than it was at the start of 2020.

EXHIBIT 2: CUMULATIVE CHANGE IN VACANCY RATE BY REAL ESTATE PROPERTY TYPE



Source: CoStar, Grosvenor Research

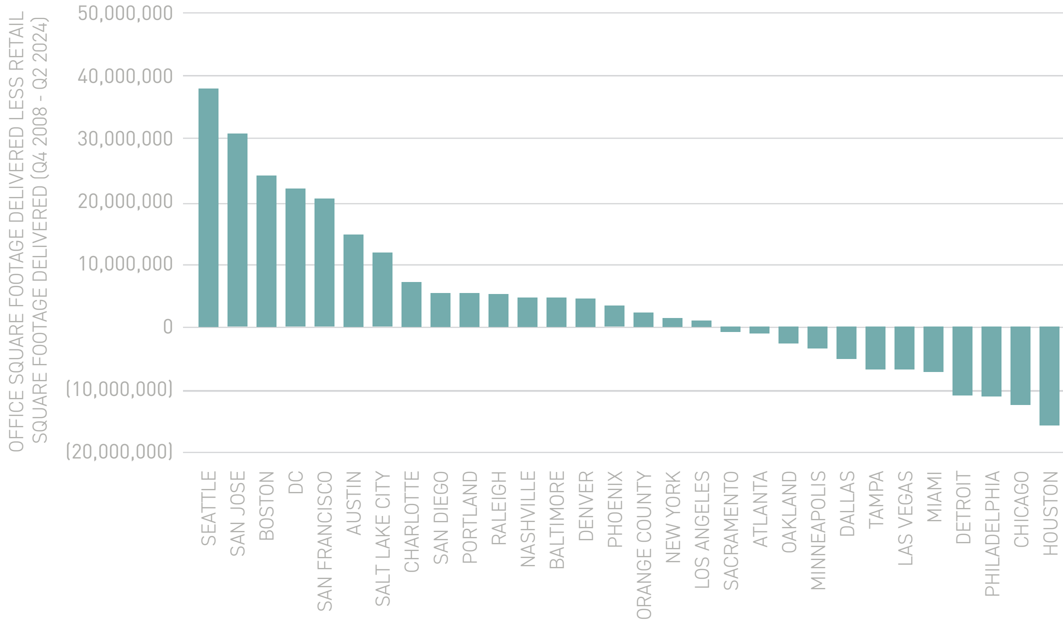
SUPPLY: RETAIL AND OFFICE ADJUSTMENTS IN THE 2010'S

Retail started oversupplied post-GFC, and the increase of available space per capita, in conjunction with the move to online shopping, eroded returns in the sector. Indeed, by global standards the US had one of the largest retail-space-per-capita footprints globally. But following the GFC, total retail inventory grew 0.6% per annum, as did office. The US population grew 0.7% per annum over that same period, so inventory per capita in both retail and office shrank. Furthermore, retail and office space grew much slower than multifamily (1.8% per annum) and industrial (1.1% per annum).

It is helpful to zoom in on major urban metros, since these markets tend to be more liquid with more institutional-grade stock than the US as a whole. We examined a sample of thirty major US markets[1] to highlight urban retail trends. In these markets, retail stock grew only 0.6% per annum from 2008 to 2023 while office inventory grew 0.9% per annum over the same period. For context, population growth was 1.0% p.a. during this time. The divergence of retail and office inventory did not occur immediately following the GFC. It only began in the mid-2010s, when office development grew but retail development stagnated by comparison. This has continued through to today, although the gap has narrowed post-pandemic.

That is not to say that office space grew faster than retail space everywhere. Since 2008 in this thirty-market set, developers delivered 125 million more square feet of office than retail. But some markets, ranging from Chicago to Miami to Minneapolis, saw more retail space deliver than office *(Exhibit 3)*.

EXHIBIT 3: OFFICE SQUARE FOOTAGE DELIVERED LESS RETAIL SQUARE FOOTAGE DELIVERED SINCE 2008

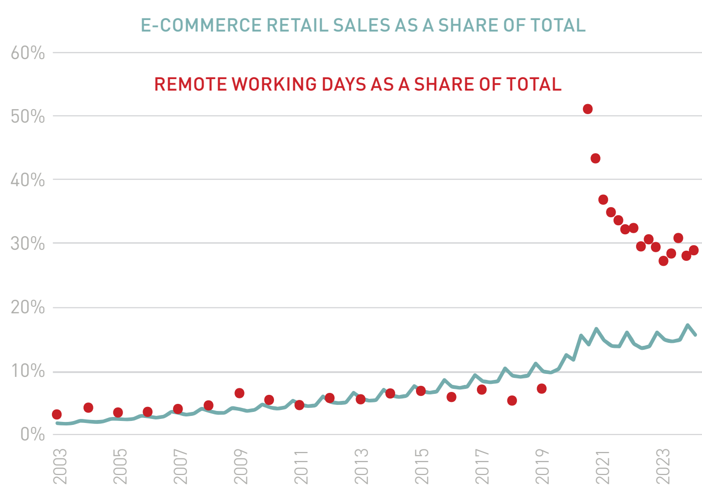


Source: CoStar, Grosvenor Research

DISRUPTED FAST AND SLOW

The divergence of office and retail development in major urban metros appears to be a function of, and response to the major disruptive events the product types experienced. The disruption of retail by e-commerce happened slowly but steadily *(Exhibit 4)*. At the beginning of 2003, e-commerce sales were 1.7% of total retail sales. Remote working incidence was near double that, comprising 3% of total working days. In 2009, during the GFC, both trends had more than doubled with e-commerce sales representing 3.9% of total sales and remote working representing 6.4% of total working days.

EXHIBIT 4: E-COMMERCE SALES AS A SHARE OF TOTAL RETAIL SALES AND REMOTE WORKING DAYS AS A SHARE OF TOTAL WORKING DAYS



Source: WFH Research, Federal Reserve, Bureau of Labor Statistics, Grosvenor Research

In 2019, a decade later and the last full year before the pandemic, retail sales had again grown significantly to around 10.5% of total sales. By contrast, remote work adoption had grown very little to 7.2% of total working days. The pandemic significantly reshaped e-commerce and remote work in dramatically short order. E-commerce sales went from 12.4% at the end of 2019 to 16.6% a year later. More dramatically, remote working climbed to 51% of total working days in the summer of 2020 and has settled around 28% today.

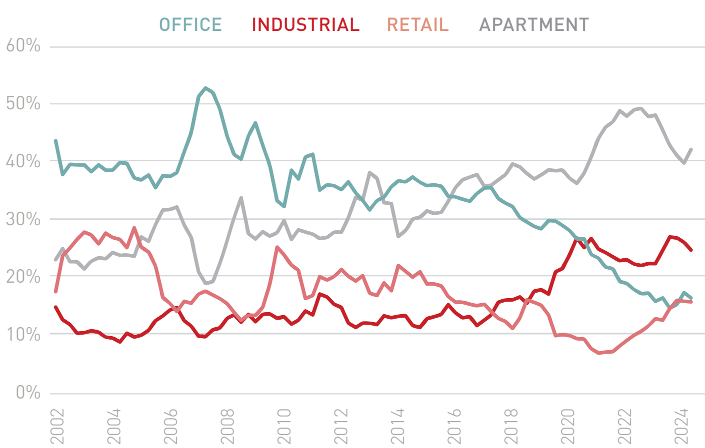
E-commerce disrupted retail in a slow and steady fashion. The fact that new retail construction, total returns, and capital flows did not noticeably slow until the mid-2010s suggests that it took time for investors to adjust to the impact of e-commerce on bricks-and-mortar as the key real estate play linked to domestic consumption.

To contrast, office has been disrupted in an instantaneous and dramatic fashion. Decades of remote work adoption and development of the technologies advanced seemingly overnight. As a result, the market response to disruption in office has been far more immediate.

FOLLOW THE MONEY

The mid-2010s slowdown in retail is also apparent in capital flows data. *Exhibit 5* shows capital flows among major real estate property types as a share of total real estate capital flows. In the early 2000's, office was the most popular property type among institutional investors, followed by retail and multifamily. After the GFC, both retail and office's share of total retail transactions trended downward. There was no significant difference in their path of travel, just their relative magnitude. That near-parallel movement changed in 2021, where retail enjoyed a resurgence among investors, representing 7% of total transactions in early 2021 compared to 16% today. Office moved in the other direction with its decline accelerating. Remarkably, the level of office transactions has dropped and is on par with retail for the first time on record.

EXHIBIT 5: REAL ESTATE CAPITAL FLOWS BY PROPERTY TYPE, SHARE OF TOTAL

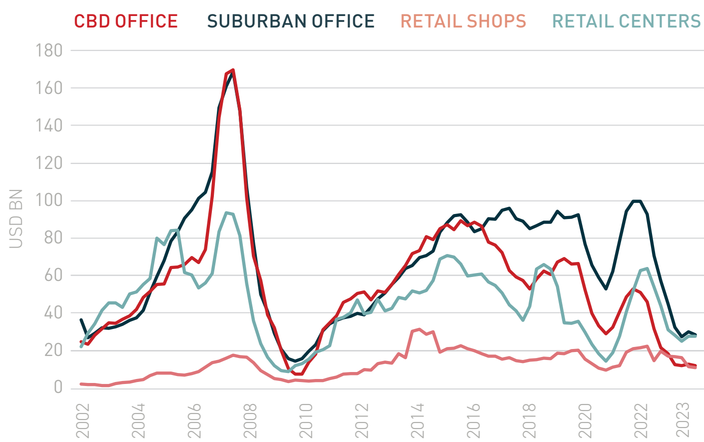


Source: MSCI RCA, Grosvenor Research

E-commerce sales went from 12.4% at the end of 2019 to 16.6% a year later. More dramatically, remote working climbed to 51% of total working days in the summer of 2020 and has settled around 28% today.

Breaking down transactions into major subcategories *(Exhibit 6)*, two things become clear. First, the slowdown in office transactions starting in the mid-2010s was exclusively in CBD office locations, with suburban office transactions holding up relatively well. Second, suburban office transactions followed urban office declines post-pandemic to the point where the value of total suburban office transactions are nearly the same as retail centers. Urban office transactions have declined so precipitously as to be comparable with the historically smaller retail shops segment.

EXHIBIT 6: REAL ESTATE CAPITAL FLOWS BY OFFICE AND RETAIL PROPERTY SUBTYPE



Note: Per source shops are "usually occupied by a single tenant and/or under 30K square feet/2,787 square meters" while centers feature "multiple tenants and 30K square feet/2,787 square meters or more".

Source: MSCI RCA, Grosvenor Research

LOCATION, LOCATION, LOCATION

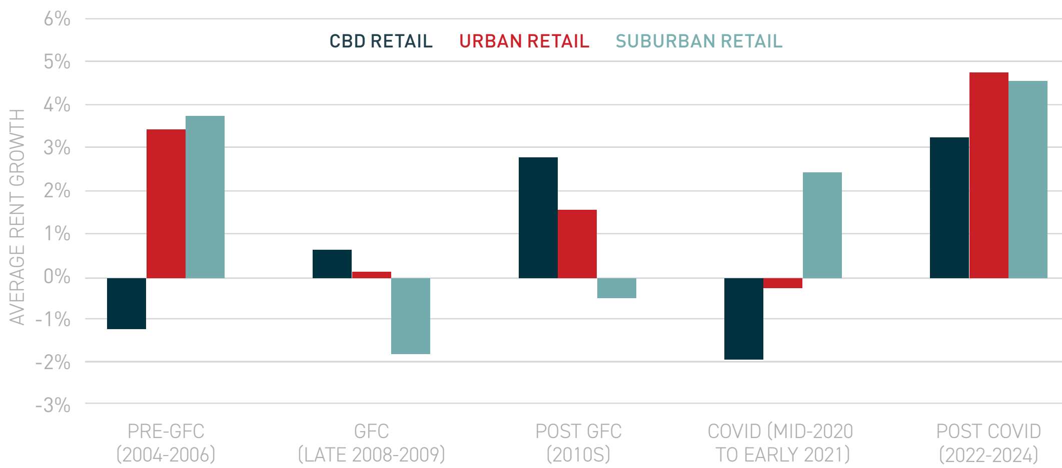
How did retail perform by location, and should we expect office to perform similarly?

Exhibit 7 shows the average national retail rent growth over the last two decades by location from pre-GFC to post-pandemic. The last time suburban retail experienced growth was the pre-GFC era, just as e-commerce was on the rise. It would not be until the pandemic and the emergence of remote work when suburban retail would outperform with rent growth averaging 4% p.a. This differs from CBD retail, which outperformed during the post-GFC era.

Exhibit 8 shows office rental growth over the same time periods. With remote work stabilizing around 28% of working days, suburban offices nearer to residential areas are now outperforming. Demand for office space followed as workers fled to the suburbs during the pandemic while CBD's have seen little to no growth. The only time CBD office outperformed was in the pre-GFC period.

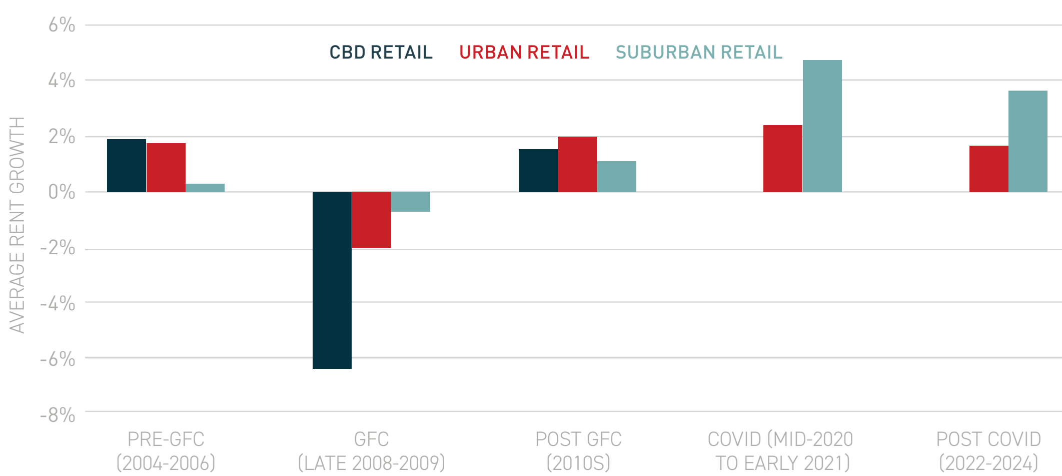
Both suburban office and retail property types have benefited from the rise of suburbs which is a structural, not cyclical, shift.

EXHIBIT 7: AVERAGE RETAIL RENT GROWTH BY CYCLICAL PERIOD



Source: CoStar, Grosvenor Research

EXHIBIT 8: AVERAGE OFFICE RENT GROWTH BY CYCLICAL PERIOD



Source: CoStar, Grosvenor Research

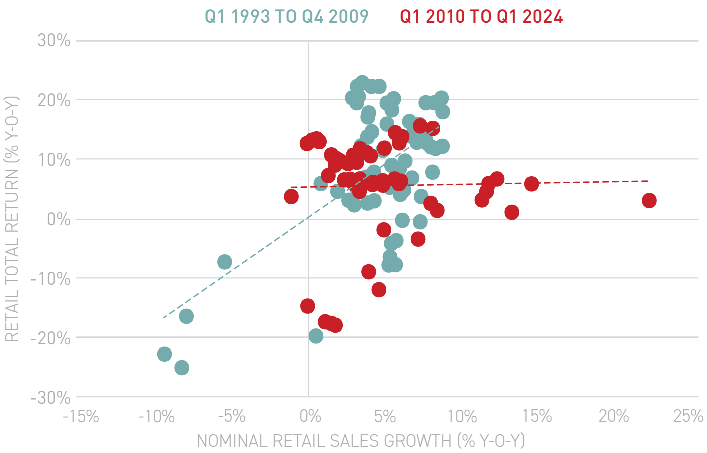
BREAKDOWN OF HISTORIC RELATIONSHIPS

Traditional indictors of future returns may not be as reliable as they once were. *Exhibit 9* shows a scatter plot of retail total returns and retail sales growth from the early 1990s to early 2024. The green dots cover the pre-GFC period, and the purple dots cover the post-GFC period.

Traditionally, there was a clear causal relationship between sales growth and total return as robust sales allowed for rental growth and, in the case of turnover leases, higher NOI. This relationship remained until the rise of e-commerce. The purple dots show the era of e-commerce with a much weaker correlation. Consumers increasingly began shopping online so while sales growth increased, this did not directly translate into more demand for retail space.

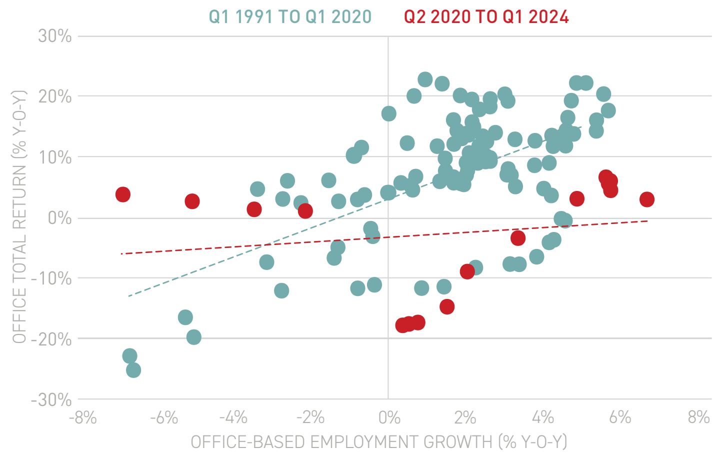
As more firms adopt hybrid working models, we expect office employment growth to have a weaker relationship with office total returns.

EXHIBIT 9: NOMINAL RETAIL SALES AND RETAIL TOTAL RETURN BY TIME PERIOD



Source: CoStar, Oxford Economics, Grosvenor Research

EXHIBIT 10: OFFICE-BASED EMPLOYMENT GROWTH AND OFFICE TOTAL RETURN BY TIME PERIOD



Source: CoStar, Oxford Economics, Grosvenor Research

A similar situation arises in the relationship between office using employment and total returns, shown in *Exhibit 10*. Here, the green dots show the pre-pandemic period, and the purple dots show the post-pandemic period. Job growth in office-using sectors would lead to higher returns as more workers translated to office space demand. This was the prevailing relationship from the early 1990s up until the pandemic. After the pandemic, this relationship appears to have weakened, although it is hard to draw a firm conclusion with so few data points. As more firms adopt hybrid working models, we expect office employment growth to have a weaker relationship with office total returns.

ABANDONING THE MISCONCEPTION

"Office is the new retail" is ultimately an imperfect comparison. We expect new office development to slow in response to changes in demand, as retail development did in the mid-2010s. For now, capital flows into office have dried up and historic relationships with key bellwether indicators in the sector, such as office-using employment growth, appear to have changed. This rhymes with the post-GFC retail experience, when investor interest in the sector started to waver and retail real estate's relationship with retail sales weakened as more sales shifted online.

Other factors are different. Retail saw urban property outperform following the GFC, but urban office is in a challenging spot with such high vacancy that it is difficult to see urban office outperformance on the horizon. Locational relationships seem to be less about cyclical experiences and more about the structural shift towards remote work adoption—settling around five times higher than it was before the pandemic. And because the disruption of office has been sudden and tumultuous, compared with retail's gradual and steady disruption, there's still a material amount of uncertainty over how the right-sizing process in office will play out.

Because office's disruption has been sudden and tumultuous, compared with retail's gradual and steady disruption, there's still a material amount of uncertainty over how the right-sizing process in office will play out.

Just as retail is enjoying a bounce back in investor interest and performing at the top of the total return league table, office will eventually have its time again. The low-growth right-sizing process will be tricky to navigate and its anyone's guess as to how long the process will take.

Retail is a good guide in some regards, but a poor guide in others. As ever, pithy but half-baked analogies are no substitute for proper analysis.

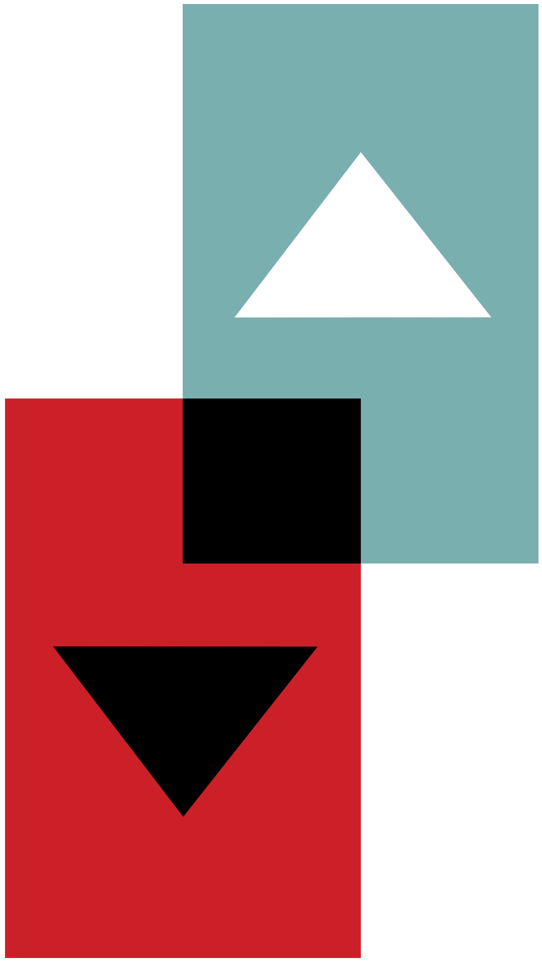
ABOUT THE AUTHORS

Brian Biggs, CFA is Vice President of Research and Strategy for Grosvenor. Ashton Sein is a Senior Research Analyst for Grosvenor.

NOTES

[1] These metros are Atlanta, Austin, Baltimore, Boston, Charlotte, Chicago, Dallas, Denver, Detroit, Houston, Las Vegas, Los Angeles, Miami, Minneapolis, Nashville, New York, Orange County, Philadelphia, Phoenix, Portland, Raleigh, Sacramento, Salt Lake City, San Diego, San Francisco, San Jose, Seattle, Tampa, and Washington DC.

OCCUPYING FORCE



Nolan Eyre
Research Analyst
RCLCO Fund Advisors

Scot Bommarito
Senior Research Associate
RCLCO Fund Advisors

William Maher
Director, Strategy & Research
RCLCO Fund Advisors

The NCREIF Open End Diversified Core Equity Fund Index can offer a critical glimpse into which types of office properties—and which markets—have suffered the most in terms of leasing occupancy, and where the market might go next.

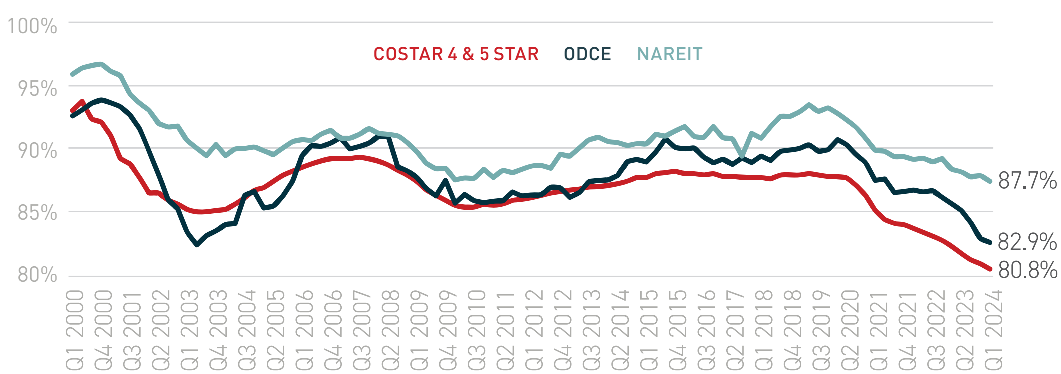
The US office market has been in the news for the last few years due to the large decline in office usage following the COVID-19 shut-downs. More recently, focus has shifted to the financial distress being felt by property owners and the cities that rely on office tax revenues.

This article explores which types of office properties and which markets have suffered the most in terms of leasing occupancy. We focus on so-called institutional properties that are part of the NCREIF Open End Diversified Core Equity Fund Index (NFI-ODCE), a $280 billion index pool whose investors mainly consist of pension funds.[1]

For all US office buildings that are tracked by CoStar, occupancy has fallen to 86.3% as of Q1 2024 from an average of 90.7% in 2019. Over the same timeframe, ODCE office occupancy fell from 90.3% to 82.9%; a steeper decline of 7.4PPTS.[2] Additionally, as of June 2024, there are nineteen office REITs with a combined market value of $64 billion.[3] REIT office occupancy fared somewhat better than ODCE properties, falling 5.7PPTS from 93.4% in 2019 to 87.7% in Q1 2024.[4]

The steep decline in ODCE office occupancy is particularly notable, given that the index consists of stabilized properties in open-ended real estate funds that deploy lower-risk investment strategies. Four- and five-star office buildings, as defined by CoStar, experienced a similar drop in occupancy, and both performed worse than the overall office sector and REITs. While recent trends, including remote work, have negatively impacted the overall sector, ODCE office properties appear to be particularly struggling. Despite the overall downward trend, occupancy rates for ODCE office vary by office subtype, building vintage, and geography, suggesting a differentiated outlook on the state of the office market.

EXHIBIT 1: OFFICE OCCUPANCY RATES



Source: NCREIF; Nareit; CoStar

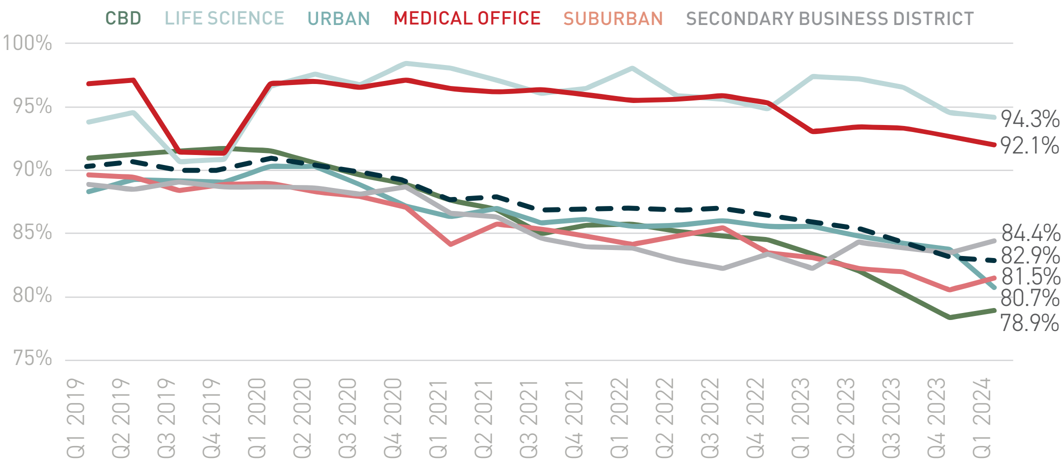
MAJOR OFFICE CATEGORIES

NCREIF and other market data collectors have broken out the office sector into several subtypes, including some that have been introduced quite recently. Central business districts (CBDs), the largest office subtype in the ODCE index, have registered the greatest occupancy declines. In 2019, CBD occupancy averaged 91.4%; the highest of the traditional office subtypes. Since then, CBD occupancy rates have dropped by 12.5PPTS to 78.9%; the lowest of all subtypes.

Urban and suburban office occupancy rates declined less dramatically, falling 8.3PPTS and 7.6PPTS, respectively. Secondary business districts (SBD), the smallest office subtype, registered the highest occupancy rates and the smallest declines of the four traditional office subtypes, with Q1 occupancy at 84.4%, 4.4PPTS down from 2019 averages. Except for SBDs, traditional office occupancies have fallen below their GFC-era lows, underscoring the unique headwinds facing the sector today, particularly in CBDs.

The alternative office subtypes, life science and medical office, have historically enjoyed higher occupancies than traditional office subtypes. Life science is the second largest ODCE office subtype and had the highest occupancy rate in Q1 2024 at 94.3%. It is the only subtype to record an occupancy increase since 2019, up 1.7PPTS. Medical office recorded the second highest occupancy rate of 92.1%, down 2.2PPTS.

EXHIBIT 2: ODCE OFFICE OCCUPANCY BY SUB-TYPE



Source: NCREIF, as of 1Q 2024

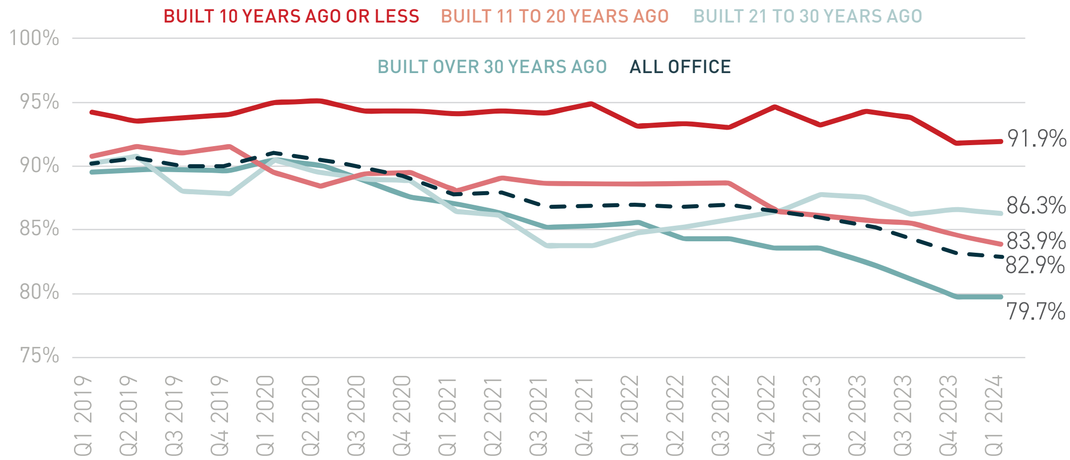
OCCUPANCY BY YEAR BUILT

ODCE office occupancy also varies by when it was constructed (vintage). Not surprisingly, office buildings constructed in the past ten years, sometimes referred to as "Next Generation" or "Next Gen" office, have maintained the highest occupancies. In Q1 2024, Next Gen office occupancy was 91.9%, well above the sector's overall occupancy but down 2.0PPTS from its 2019 average. Office buildings built eleven to twenty years ago have also fared moderately well with occupancies averaging 86.3%, despite falling 2.9PPTS. This vintage fell to a low occupancy of 83.7% at the end of 2021 before recovering to its current rate. Occupancy in offices built 21 to 30 years ago is down by a larger margin of 7.4PPTS from 2019 but remains slightly above the overall sector average at 83.9%. Much of the occupancy decline in this vintage started in late 2022.

Older office (built more than thirty years ago) has recorded the worst performance across vintages. Occupancies have declined steadily for the last five years, falling a cumulative 10.1PPTS to 79.7% in Q1 2024. This vintage makes up over half of ODCE office, significantly dragging down overall occupancy.

The gap between the best and worst performing office vintages has widened considerably in the wake of the pandemic. In 2019, occupancy in the best performing vintage was 4.7PPTS higher than in the worst performing vintage. In Q1 2024, that spread widened to 12.3PPTS. This trend suggests a continued bifurcation in the office sector as tenants' "flight to quality" boosts performance in newer office buildings at the expense of older buildings.

EXHIBIT 3: ODCE OFFICE OCCUPANCY BY VINTAGE



Note: *NCREIF does not require ODCE members to share when offices were built; therefore, the sum of the above vintages' share of ODCE market value amounts to only 90.0%.

Source: NCREIF, as of 1Q 2024

OCCUPANCY BY REGION AND METRO

Office performance varies widely across markets consistent with data and reports about actual office utilization.[5] Gateway markets have been particularly hard hit by declining office occupancy rates. Between 2019 and Q1 2024, gateway market NPI office occupancy fell 7.8PPTS from 90.2% to 82.5%, below the overall NPI office occupancy rate of 86.6%. In contrast, Sunbelt markets experienced only a slight drop of 0.9PPTS over the past five years, and occupancy currently stands at 87.9%. The divergence of the two market groupings is notable as gateway markets had higher occupancy rates than Sunbelt markets in 2019. Other markets, encompassing markets in various regions, also saw a significant drop, with occupancy falling from 90.9% in 2019 to 84.3% in Q1 2024; a decrease of 6.6PPTS.

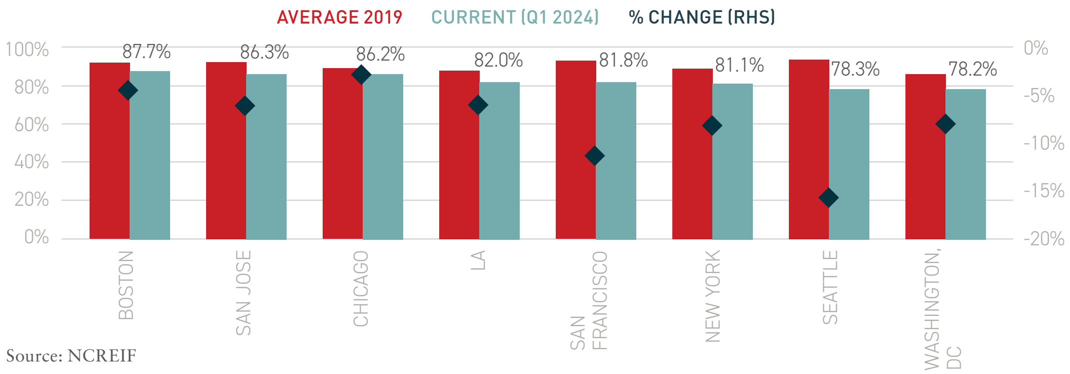
EXHIBIT 4: NPI OFFICE OCCUPANCY BY MARKET SEGMENT

NPI OFFICE OCCUPANCY	GATEWAY MARKETS	SUNBELT MARKETS	OTHER MARKETS	NPI
AVERAGE 2019	90.2%	88.8%	90.9%	90.4%
CURRENT (1Q24)	82.5%	87.9%	84.3%	86.6%
% CHANGE	-7.8%	-0.9%	-6.6%	-3.8%

Source: NCREIF

Among gateway markets, the sharpest occupancy declines were in Seattle (15.7PPTS) and San Francisco (11.3PPTS). New York and Washington, DC also experienced meaningful drops in occupancy, with declines of 8.1 and 8.0PPTS, respectively. Among gateway markets, Washington, DC recorded the lowest office occupancy in Q1 2024 at 78.2%, partly due to the federal government's lenient work from home policies. Boston posted the highest occupancy at 87.7%, with a modest five-year decline of 4.5PPTS, partly due to its strong life science sector. Chicago experienced the smallest drop in office occupancy among gateway markets, falling just 2.9 percentage points, and it maintained a relatively high occupancy rate of 86.2%. Los Angeles and San Jose also reported more modest declines in occupancy.

EXHIBIT 5: NPI OFFICE OCCUPANCY IN GATEWAY MARKETS



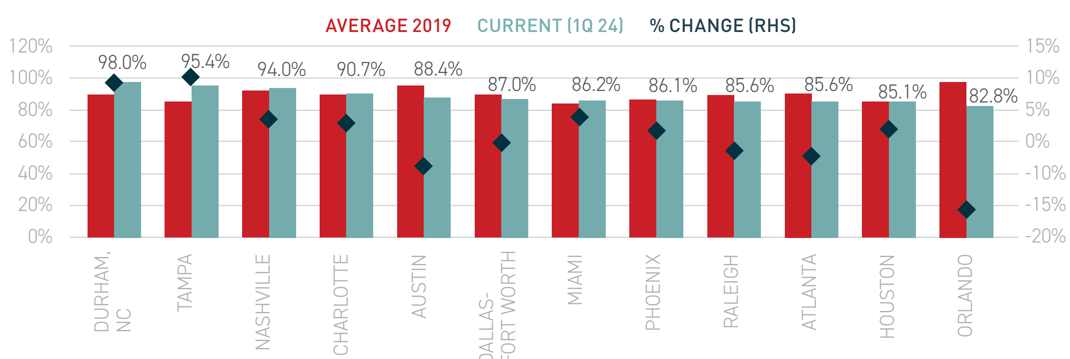
Source: NCREIF

Office occupancies were more favorable in most Sunbelt markets relative to their gateway market peers. NPI office occupancy was highest in Durham at 98.0%, although the market is home to only nine NPI office properties. Tampa and Nashville stand out as particularly strong office markets with Q1 2024 occupancy rates at 95.4% and 94.0%, respectively. Over the past five years, Tampa recorded the largest occupancy increase of 9.4PPTS.

Performance in Dallas, the largest Sunbelt NPI office market, was comparable to Chicago among the gateway markets; occupancy fell 2.6PPTS to 87.0%. Orlando and Austin had the largest declines in occupancy rates since 2019, down 15.0PPTS and 6.9PPTS, respectively. Austin occupancy remained well above the overall average at 88.4%, but Orlando occupancy fell to 82.8%, the lowest of all Sunbelt markets. Orlando's dramatic decrease suggests that a few office buildings in the market may be either particularly troubled or in lease-up.

Tenants increasingly opt for newer, best-in-class offices, with large tenants particularly drawn to Next Gen buildings.

EXHIBIT 6: NPI OFFICE OCCUPANCY IN SUNBELT MARKETS

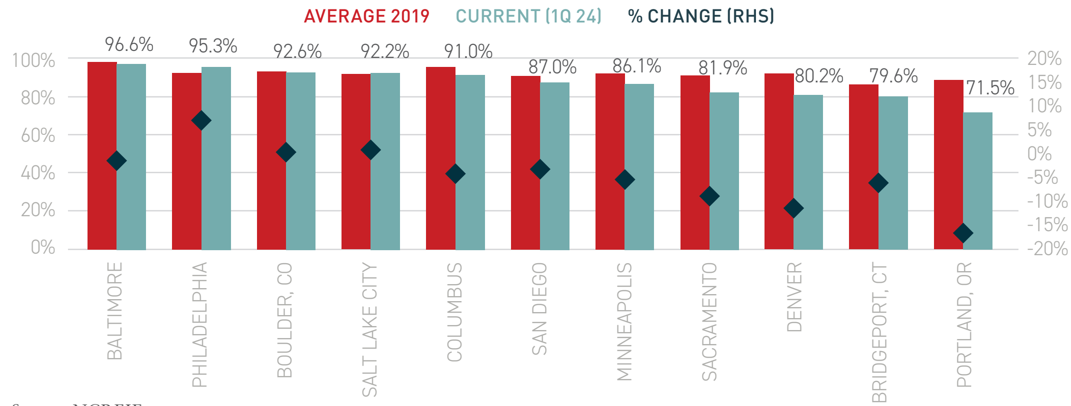


Source: NCREIF

Performance was mixed across other non-gateway, non-Sunbelt markets. Baltimore recorded the highest occupancy rate in Q1 2024 at 96.6% despite falling 1.4PPTS from 2019. Philadelphia followed at 95.3%, driven by a significant increase of 6.8PPTS above its 2019 rate. The Western markets of Boulder, Colorado and Salt Lake City also saw slight increases in occupancy and enjoyed rates above 92%.

In the Midwest, Columbus and Minneapolis recorded occupancy declines but maintained rates above the overall average in Q1 2024. Occupancies declined by the largest margins in Portland (16.8PPTS), Denver (11.4PPTS), and Sacramento (8.8PPTS). Portland recorded the lowest occupancy rate of all markets analyzed at just 71.5% in Q1 2024.

EXHIBIT 7: NPI OFFICE OCCUPANCY IN OTHER MARKETS



Source: NCREIF

FUNDAMENTALS TO WATCH

Office fundamentals remain challenged amid shifting work trends, and occupancy rates reflect these sectoral headwinds both in private and public real estate. ODCE office has been particularly hard hit compared to the broader sector and REITs. Despite the overall downturn in the sector, a closer analysis reveals variation within the office space.

In the ODCE index, CBD, the largest subtype, has been the hardest hit, with sharp occupancy declines since 2019. Non-traditional office subtypes have fared better, particularly medical office and life science. The performance of life science is driven by strong demand drivers, including robust biotech employment growth, investment in new drugs and biologicals, and a high number of clinical trials underway for new drugs. Life science fundamentals remain much stronger than the overall office sector, although they have recently moderated due to elevated supply pipelines. Medical office also benefits from several strong demand drivers, including a rise in the elderly population and the continued shift to outpatient care.

Newer office buildings have also outperformed older vintages, with the occupancy gap between them widening significantly in recent years. Tenants increasingly opt for newer, best-in-class offices, with large tenants particularly drawn to Next Gen buildings. Older vintages have in turn suffered from low demand. Occupancy is lowest among buildings built over 30 years ago, which constitute over half of ODCE office, and these older buildings are largely responsible for the fall in occupancy over the past 5 years.

Although opportunities to renovate older buildings exist, structural deficiencies and restrictive floorplates make them difficult. A dilemma for the office market is that tenants prefer newer buildings, but overall sector weakness will make new construction generally uneconomic.

Geographically, the once-dominant gateway markets have registered notable occupancy declines and have been overtaken by several Sunbelt markets. The impacts of remote work may be partly responsible for low occupancy in gateway markets where the model is popular, including in the Bay Area and Washington, DC. It is unclear if Sunbelt office markets will continue to outperform their gateway peers, but population trends, especially migration of young residents and workers, will likely bolster Sunbelt real estate fundamentals across the board.

The broad trend of declining office performance looks unlikely to subside in the near term. However, not all segments of the sector will suffer equally, and investors may find attractive opportunities in select sub-sectors.

ABOUT THE AUTHORS

Bill Maher leads RCLCO Fund Advisors’ research efforts and investment strategy for institutional clients. He brings a wealth of knowledge and perspective from his decades-long experience as a respected economist and thought-leader in the real estate industry. Scot Bommarito researches real estate and economic trends to develop RCLCO Fund Advisors’ points of view on the economy, capital markets, and property markets. Nolan Eyre supports RCLCO Fund Advisors’ Strategy and Research team, focusing on economic issues affecting the real estate industry.

NOTES

[1] NFI-ODCE is a capitalization-weighted, gross of fee, time-weighted return index of open end real estate funds that utilize lower risk investment strategies utilizing low leverage and are generally represented by equity ownership positions in stable US operating properties diversified across regions and property type.

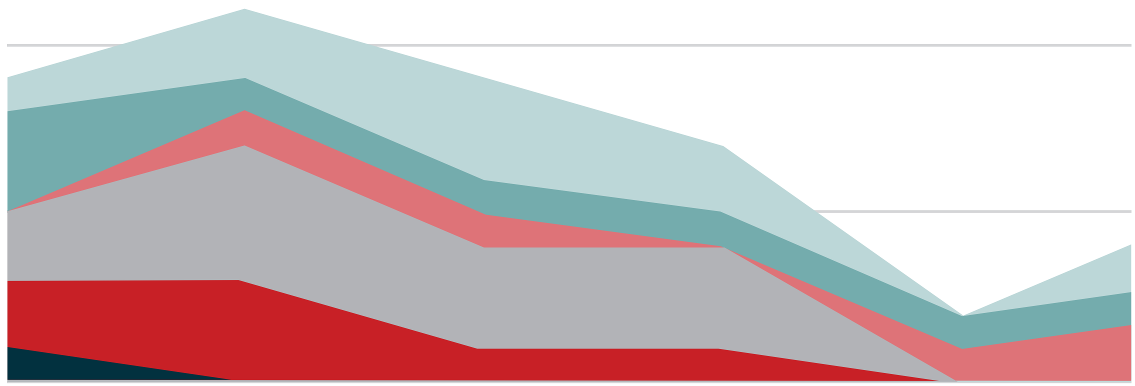
[2] Source: NCREIF. NCREIF ODCE figures in this article differ from those in the Nareit market commentary because they are based on NCREIF’s new property type definitions for ODCE, whereas Nareit used the legacy definitions.

[3] Source: Nareit REITWatch, June 2024.

[4] Pierzak, Edward F. “REIT Prowess: Occupancy Rates Showcase REIT Asset Selection and Management.” Reit.com, Nareit, 14 June 2024, https://www.reit.com/news/blog/market-commentary/reit-prowess-occupancy-rates-showcase-reit-asset-selection-and. Accessed 1 July 2024.

[5] Due to data limitations, NPI data were utilized for an analysis of office occupancy by market instead of ODCE data.

VALUE-ADD VS. CORE



Yizhuo (Wilson) Ding
Development Associate
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Jacques Gordon, PhD
Executive in Residence and Lecturer
MIT Center for Real Estate

Deep analysis of core versus non-core performance has been difficult, historically, because non-core data has been difficult to obtain. Now, for the first, time core and non-core performance can be tracked at the property level, providing a pathway to new strategies.

Investors in US real estate often assume that value-add and opportunistic strategies out-perform core strategies. However, fund-level data shows that non-core strategies can have a wide variety of outcomes.

Some academic studies suggest that highly leveraged core strategies may provide consistently superior risk-adjusted returns to value-add and opportunistic strategies. However, deep analysis of core versus non-core performance has been difficult to do, because non-core data has been difficult to obtain. Now, for the first, time core and non-core performance can be tracked at the property level with the MSCI database.[1]

FRAMING THE COMPARISON

In the wake of the COVID-19 pandemic, amidst higher inflation and elevated interest rates, real estate capital markets quickly shifted from hyper-active to moribund in many Western countries. At the same time, secular trends created massive demand shifts for commercial and residential properties.

These seismic movements occurred just as new research questioned the alignment of investors and fund managers in core and non-core funds.[2] These studies compared unlevered and levered returns in public and private markets[3], analyzed the after-fee return on value-add/opportunistic strategies[4] and the overall underperformance of private equity real estate funds compared to other investment products.[5]

With the MSCI dataset, investors can observe the performance of private equity real estate investment amidst changing capital market cycles over the last two decades. The non-core data points to a strong correlation between growth markets and value-add real estate returns.

Specifically, the data highlights the superior performance of "development strategies" in the Sunbelt and Southwest regions. However, it also reveals uneven performance of "rehabilitation/repositioning" strategies, especially in west coast markets. Finally, the review of twenty years of performance data underscores the importance of aligning investment strategies with thematic investment trends, in both the core and non-core segments.

EXPLORING THE MSCI PROPERTY INDEX DATABASE

Core and non-core are often treated as different investment strategies in real estate investment, each with distinct characteristics and benchmarks. Core strategies focus on stabilized (more than 80% leased), income-producing assets, generating returns primarily from income with low (less than 50%) leverage.

As investors ascend the risk spectrum, non-core strategies, such as repositioning/redevelopment and new development, expose investors to a different set of factors than fully leased properties. They rely more on capital appreciation earned at the residual end of the cash flow model, than steady income earned during the holding period.

The MSCI data series contains more than 2,000 non-core properties, whose returns are reported at the property level. Given the inherent characteristics of real estate as a relatively illiquid and diverse asset class, with most individual properties changing hands only once every 5-10 years, tracking non-core investment return data at the property level can be challenging.

The MSCI database contains twenty-three years of property level returns for open-end funds, separate accounts, and closed-end funds across different property life-cycle stages and geographic locations. Many core vehicles have different sleeves that allow them to pursue non-core strategies up to a prescribed limit.

Capturing and comparing non-core and core performance at the property level gives investors a rare look at how different risk-return strategies behave over time. As of year-end 2023, the MSCI US Database contained total capital value of $502 billion, which include 111 portfolios and 7,317 properties in the US that are held in open-end vehicles, separate accounts, and closed-end vehicles by professional real estate investment management entities.[6]

In this study, the authors used a unique database that provided both total time-weighted return indices and dis-aggregated, masked returns. Property-level style categories were based on purchase strategies, allowing for tracking non-core assets through value-add or development phases. The database also segmented returns by market/sector and geographic location, offering new insights into core vs. non-core comparisons.[7]

Core strategies focus on stabilized (more than 80% leased), income-producing assets, generating returns primarily from income with low (less than 50%) leverage.

WHAT DOES THE NON-CORE DATA SHOW?

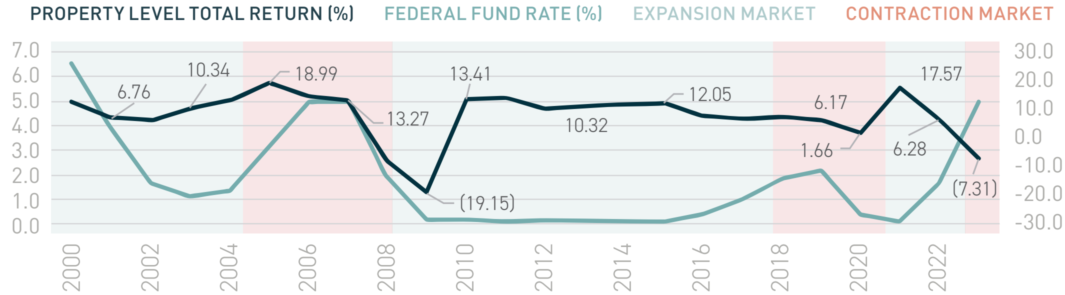
Since 1999, there have been multiple shifts in interest rate regimes, including three periods of decreasing interest rates and three periods of increasing interest rates. These interest rate shifts affect investment strategies differently.

Core real estate does very well when interest rates fall. In fact, NCREIF and MSCI data shows that it does so well, that it exceeds many of the targets set by value-add (10% to 15%) and opportunistic funds (18%+). During periods of falling interest rates, economic fundamentals are often in danger of stalling and the Federal Reserve responds with multiple stimulus strategies at once.

For instance, the Fed has become a major buyer of mortgage-backed securities to help support the real estate market and to keep interest rates low several times in the past twenty years (Capital Expansion Markets). Conversely, during periods of increasing interest rates, the capital markets typically experience a tightening of both equity and debt availability (Capital Contraction Markets). This phase is often accompanied by reduced liquidity and the implementation of quantitative tightening in monetary policies, aimed at restraining inflation or cooling down an overheated asset markets. The MSCI Property Index's total return, as shown in *Exhibit 1,* traces big swings in the performance of private equity real estate investment over a span of years from 2000 to 2023.

The database was assembled by aggregating both core and non-core properties included in 111 portfolios owned by open-end funds, separate accounts and closed-end funds.

EXHIBIT 1: FEDERAL FUND RATE CREATES EXPANSION AND CONTRACTION MARKET CYCLES (2000-2023)



Source: MSCI all-property return and FRED

EXHIBIT 2: MSCI PROPERTY INDEX CLASSIFICATION, VALUE AND RETURN

	PROPERTIES	CAPITAL VALUE	AVG. ANNUALIZED RETURN 2013–22	AVG. ANNUALIZED RETURN 2013–23	2021 RETURN	2022 RETURN	2023 RETURN
ALL	7,317	$501,883,641,103	8.83%	7.37%	17.57%	6.28%	-7.31%
STABILIZED	5,138	$341,094,731,121	8.34%	6.83%	15.96%	5.41%	-8.21%
DEVELOPMENT	1,824	$132,426,050,223	11.22%	9.78%	23.77%	9.31%	-4.69%
REDEVELOPMENT	74	$6,612,246,413	8.50%	7.28%	19.32%	3.97%	-4.90%
REHAB/ REPOSITION	50	$5,098,709,169	6.71%	4.91%	11.89%	1.65%	-13.14%
LEASING	216	$15,231,407,056	9.04%	7.58%	20.08%	7.52%	-7.02%
		Dev-Sta Spread	*289 bps*	*294 bps*	*781 bps*	*391 bps*	*352 bps*

Source: MSCI Property Level Database

The database was assembled by aggregating both core and non-core properties included in 111 portfolios owned by open-end funds, separate accounts and closed-end funds. However, users should move cautiously to form high-conviction conclusions about the performance of non-core investing with this data. Among the caveats to consider:

- Several categories of non-core performance are based on much smaller sample sizes than the core, stabilized returns.
- Leverage levels vary across both the core and non-core sample. To put the data on a like-for-like basis all returns shown here are unleveraged and shown on a pre-fee basis.
- A large portion of properties included in the database are bought and managed by "core" managers and their portfolio teams. Their non-core skills may not be as well-honed as managers who focus on value-add or opportunistic investment styles. Nevertheless, the large sample sizes shown in *Exhibit 2* suggest that many core managers are well along in the process of acquiring the operating skills needed to excel at non-core investing.
- Return metrics are self-reported by managers and are not subject to full audits. This is true of nearly all private equity real estate performance data in the US. Different valuation methodologies are sometimes used for non-core properties.[8]

Taking into account the multiple shifts in interest rate policies over the last twenty years, what does the MSCI data show happened to core and non-core returns? When institutional real estate data is aggregated by investment style, instead of blending core and non-core properties together, (as is done in fund-level reporting), five distinct patterns emerge:

PATTERN 1: DEVELOPMENT STRATEGIES AND RELATIVE PERFORMANCE

The clear "winner" among non-core strategies is the "development" category.[9] Particularly noteworthy is the emergence of this strategy as the preeminent approach post-GFC, consistently outperforming both core and non-core counterparts from 2013 onwards. This strategy yielded an average annual return of 11.22% between 2013 and 2022, compared to the stabilized strategy's average annual return of 8.34% over this same time period.

Deal volume also increased substantially over this same time period. When interest rates rose in 2022-23, all strategies suffered, but average development returns held up better than other strategies. Out-performance vs core held up reasonably well as shown in *Exhibit 2*, as the multi-year average expanded from 289BPS to 294BPS of out-performance even as values fell overall. The peak for the development strategy occurred in 2021, with a total return of 23.8%, compared to the Stabilized strategy's total return of 15.9% in the same year, attributable to the confluence of the rapid recovery of business activities from the pandemic and a favorable capital environment with record-low interest rates, despite COVID restrictions.

However, the outperformance of development has not been uniform across different geographic locations *(Exhibit 3)*. According to the market segmentation data from the MSCI dataset, there is a discernible shift in the geographic component of the strategy's overall return. Initially, the primary markets—major urban centers like New York, Los Angeles, and Chicago—were the main contributors to strong performance (2014–15). Later, out-performance shifted to secondary markets, which include smaller but growing cities like Austin and Nashville, from 2016 to 2022.

Further analysis of Development strategy performance pinpoints several top-performing cities. Metros highlighted in *Exhibit 3*, such as Phoenix and Orlando, have consistently been among the highest-return cities for development strategies in the past 5 years. Notably, four of these five cities are classified as secondary markets, with three in the Sunbelt region, one on the West Coast, and one in the Northeast. In 2021, six out of the eight top-performing cities for development returns were located in the Sunbelt and Southwest regions.

EXHIBIT 3: DEVELOPMENT RETURNS BY LOCATION ACROSS SECTORS (2014-2023)[10]

		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
ALL		12.35%	14.68%	9.87%	8.43%	9.69%	8.44%	4.66%	23.77%	9.31%	-4.69%
ALL PRIMARY		13.06%	14.85%	9.66%	8.19%	9.36%	7.95%	3.98%	21.96%	8.43%	-5.30%
ALL SECONDARY		10.35%	14.11%	11.33%	9.22%	11.50%	10.83%	6.33%	31.53%	12.77%	-3.75%
ALL OTHER		8.02%	13.58%	9.52%	10.03%	10.37%	10.04%	9.59%	29.49%	11.21%	-2.12%
PRIMARY MARKETS											
ATLANTA	SOUTHEAST	12.57%	23.15%	15.71%	13.01%	9.57%	13.90%	8.42%	29.09%	6.36%	-5.31%
BOSTON	NORTHEAST	15.94%	17.49%	10.10%	6.81%	10.27%	10.34%	3.98%	15.56%	5.18%	-5.03%
CHICAGO	MIDWEST	13.06%	16.40%	8.13%	6.05%	5.38%	5.13%	1.06%	10.44%	1.86%	-8.89%
DALLAS/FT. WORTH	SOUTHWEST	10.25%	14.57%	13.70%	13.30%	9.69%	5.48%	5.13%	20.55%	11.98%	-0.03%
DENVER	MIDWEST	21.47%	20.57%	8.66%	11.02%	12.45%	7.82%	1.92%	23.35%	3.29%	-8.76%
HOUSTON	SOUTHWEST	15.95%	9.90%	4.76%	5.24%	7.60%	8.41%	2.59%	16.88%	7.12%	1.97%
LA/OC/RIVERSIDE*	WEST COAST	12.56%	15.66%	11.51%	9.54%	12.05%	11.99%	7.43%	42.46%	18.00%	-3.60%
NY/NJ	NORTHEAST	11.61%	14.37%	8.86%	5.28%	8.23%	6.00%	3.52%	19.40%	6.63%	-3.05%
SAN DIEGO	SOUTHWEST	/	/	/	/	/	/	/	23.85%	12.78%	-8.86%
SEATTLE	WEST COAST	17.27%	15.94%	8.98%	12.03%	13.98%	9.40%	7.37%	16.97%	5.80%	-6.85%
BAY AREA	WEST COAST	23.39%	22.75%	13.66%	11.27%	11.47%	9.24%	3.20%	12.47%	0.75%	-12.73%
SOUTH FLORIDA	SOUTHEAST	14.71%	13.18%	11.09%	4.99%	4.44%	4.73%	1.88%	25.14%	12.88%	-2.33%
WASHINGTON DC	NORTHEAST	/	/	/	/	/	/	/	/	/	/
SECONDARY MARKETS											
AUSTIN	SOUTHWEST	/	/	/	/	/	/	/	28.64%	13.36%	-4.06%
BALTIMORE	NORTHEAST	/	/	/	5.06%	7.38%	5.84%	1.01%	14.58%	6.00%	2.74%
CHARLOTTE	SOUTHEAST	/	/	/	/	8.70%	/	7.15%	35.83%	13.09%	-3.45%
MINNEAPOLIS/ST. PAUL	MIDWEST	/	/	/	/	/	/	/	/	/	/
ORLANDO*	SUNBELT	10.18%	15.79%	12.06%	10.60%	14.09%	12.59%	5.13%	31.95%	13.94%	-2.19%
PHILADELPHIA	NORTHEAST	/	/	/	/	/	21.89%	15.34%	57.00%	15.03%	-3.21%
PHOENIX*	SUNBELT	10.81%	5.53%	9.65%	6.46%	/	19.37%	15.35%	47.77%	21.20%	-4.77%
PORTLAND	WEST COAST	9.89%	19.06%	19.51%	14.29%	14.68%	8.25%	0.79%	17.90%	3.25%	-11.01%
TAMPA*	SUNBELT	/	/	/	/	/	/	7.36%	44.71%	22.70%	8.41%
NASHVILLE	SOUTHEAST	/	/	/	/	/	/	/	30.84%	/	-4.45%
RALEIGH	SOUTHEAST	/	/	/	/	/	/	/	19.78%	13.12%	-1.18%

Source: MSCI Property Level Database

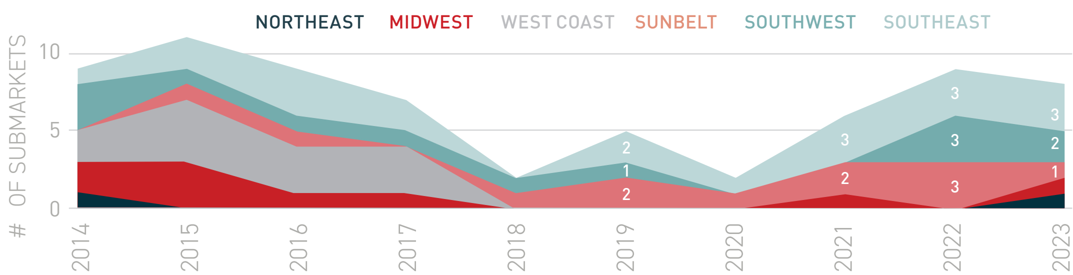
The Sunbelt area is increasingly popular with institutional investors, thanks to rapid population growth and historically lower levels of capital investment leading to lower prices. The demand for residential properties, including single-family and multi-family rentals, condominiums, and retirement communities, has been especially strong in these Sunbelt markets.

In 2021 and 2022, 83% and 100% of sunbelt markets achieved development returns above the MSCI development return average *(Exhibit 4)*. In addition to the thriving residential category, the hospitality sector, featuring resorts and vacation rentals, is also gaining traction in the Sunbelt and Southwest area, catering to tourists and "snowbirds."

The industrial/logistics sector has also earned consistently higher overall returns. However, the biggest contributors shifted over the study period, from the West Coast and Southeast to the Northeast and Sunbelt areas. The Northeast and Sunbelt have been the only two areas that has been outperforming others since 2019, with their peak average return at 47% and 44% in 2022, respectively *(Exhibit 5)*. In those areas, growth in the stock of logistics properties through development provided great supply-chain and transportation support for cities with sizable population or rapid growth.

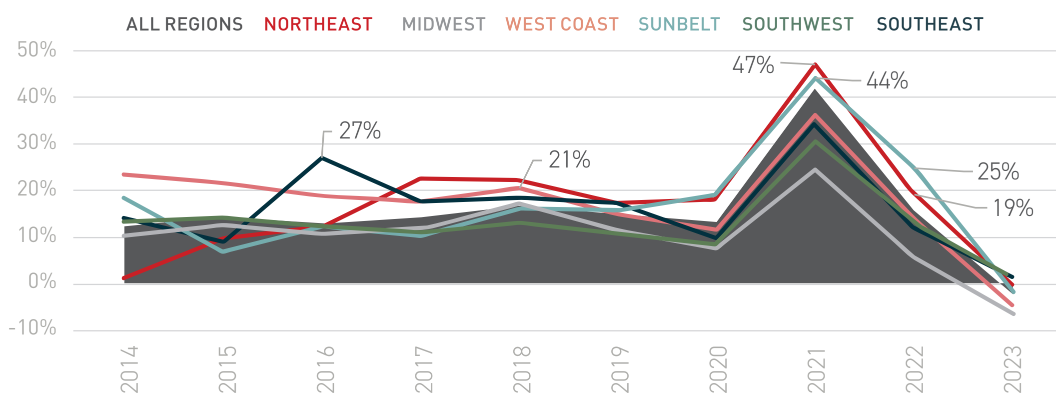
The robust performance of development strategies, therefore, can be attributed to this heightened demand for residential in the Sunbelt (Southwest and Southeast) and industrial properties in the Sunbelt and Northeast, all of which were sought-after property types among large-scale institutional investors, and many pursued a "build" versus "buy" strategy to increase their exposure.

EXHIBIT 4: CITIES WITH APARTMENT DEVELOPMENT RETURNS HIGHER THAN OVERALL ALL PROPERTY RETURN (2014-2023)[11]



Source: MSCI property-level database

EXHIBIT 5: INDUSTRIAL DEVELOPMENT RETURNS BY SUB-MARKETS VS. ALL REGIONS AVERAGE (2014-2023)[12]



Source: MSCI property-level database

PATTERN 2: LEASING STRATEGIES BENEFITED FROM IMPROVING MARKET AND OCCUPANCY

The returns of leasing strategies from 2004 to 2023 reveal that performance is closely linked to broader market conditions, with significant variation corresponding to economic cycles. During the years leading up to the GFC, leasing strategies experienced steady growth, peaking in 2006 with a return of 13.9%. This period of growth, characterized by favorable market conditions and high demand for leased properties, demonstrates the strategy's responsiveness to a robust economic environment.

Compared to a typical core, stabilized strategy, a higher magnitude of losses during the GFC highlights the relatively higher risk associated with leasing strategies during the time of decreased demand and potential tenant defaults; notably, the post-GFC period showcases the resilience and recovery potential of leasing.

The years following the crisis saw a notable rebound, with leasing being the highest return strategy in 2011 and 2012, indicating a rapid recovery as market conditions improved and leasing activity increased. In 2021, the strategy witnessed a significant upturn with a return of 20.1%, which made leasing the second highest return strategy, likely benefiting from a post-pandemic recovery where demand for leased properties surged.

This performance further supports the premise that leasing strategies are indeed sensitive to recoveries from weak fundamentals in a market. The data from 2022, with a return of 7.49%, suggests a normalization of the market as it adapts to the post-pandemic economic landscape, but still made Leasing the second highest return in that year. In 2023, leasing strategies' return was at -7.0%, compared to -8.2% for core/stabilized and -4.7% for development.

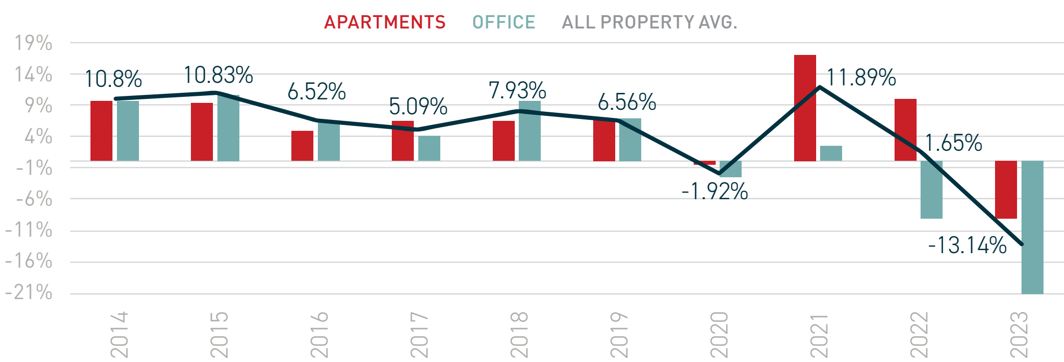
PATTERN 3: REHABILITATION AND REPOSITIONING STRATEGIES HAVE BEEN DISAPPOINTING IN THE NEAR-TERM

Redevelopment and rehabilitation/repositioning strategies reached their zenith in 2005, recording total returns of 20.51% and 25.00%, respectively. These figures could be attributed to the robust housing market and vigorous economic expansion during that period, which bolstered the profitability of extensive renovations and strategic property enhancements. Post-GFC, the strategies still realized commendable returns in 2011 and 2012; however, a downward trend began to emerge in 2015. At that time, primary markets were still yielding strong returns from rehabilitation/repositioning investments, but this began to wane the following year, setting off a trend of diminishing returns in these markets *(Exhibit 6)*.

By examining the four-year period from 2020 to 2023, underperformance of these major renovation strategies becomes apparent, particularly in primary markets on the West Coast, such as San Francisco, Los Angeles, and San Diego. The reasons for this downturn could be manifold, but one plausible explanation is the substantial transformation in the office sector's structural demand. As work formats have become increasingly flexible, the demand for traditional office space has recalibrated, impacting the viability of older, less adaptable office buildings.

The changing landscape of work, characterized by remote and hybrid models, has diminished the appeal of older office spaces that were once steady performers in primary markets. This shift has created a competitive disadvantage for aged, outdated, or underperforming office buildings, which struggle to compete against modern, newly constructed properties that cater to contemporary needs and preferences. Consequently, the lackluster performance of the rehabilitation/repositioning strategy in recent years could be symptomatic of the urban rehabilitation sector's struggle to keep pace with these rapid changes.[14,15]

EXHIBIT 6: REHAB/REPOSITIONING RETURNS BY SECTORS (2014-2023)[13]



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
ALL	10.08%	10.83%	6.52%	5.09%	7.93%	6.56%	-1.92%	11.89%	1.65%	-13.14%
APARTMENTS	9.58%	9.27%	4.89%	6.38%	6.45%	6.59%	-0.51%	17.02%	9.92%	-9.08%
OFFICE	9.61%	10.66%	6.68%	4.15%	9.58%	6.75%	-2.54%	2.39%	-9.06%	-22.08%
APT/OFF SPREAD	*-3BPS*	*-139BPS*	*-179BPS*	*223BPS*	*-313BPS*	*-16BPS*	*203BPS*	*1463BPS*	*1899BPS*	*1300BPS*

Source: MSCI Property Level Database

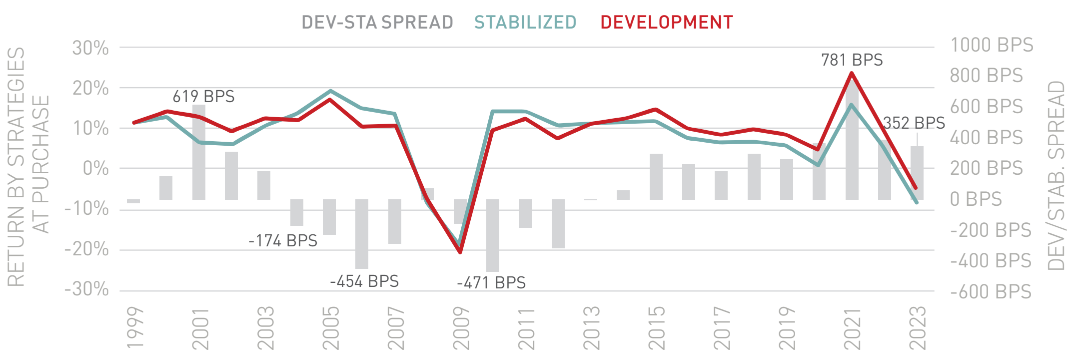
PATTERN 4: STRONG, POSITIVE RETURNS EARNED BY CORE STRATEGIES WERE DRIVEN BY FALLING INTEREST RATES

In the aftermath of the GFC from 2009 to 2014, the recovery of real estate values significantly influenced the trajectory of returns. Stabilized assets emerged as the top-performing strategy in the immediate post-crisis years of 2009 and 2010. This trend underscores the tendency for more secure, core strategies to first regain their footing as the market begins to stabilize and interest rates fell. As the recovery took hold and the fundamental market showed gradual improvement, Leasing strategies rose to prominence in 2010 and 2011, indicating their sensitivity to improvements in market conditions and occupancy rates.

Subsequently, redevelopment took the lead in 2012, suggesting the market's shift in focus towards strategies involving significant asset enhancement and potential for substantial value addition. Beginning in 2015, development strategies started to dominate in terms of returns, reflecting a fully recovered market that had shifted from a state of recuperation to one of growth and expansion. This period marked the transition from a market characterized by value recovery to one driven by value creation. Non-core strategies, known for their potential for larger value appreciation, began to be recognized by the market, underscoring the investor" confidence in the economic upturn and their willingness to engage with higher-risk, higher-reward investments *(Exhibits 7 and 8)*.

The changing landscape of work, characterized by remote and hybrid models, has diminished the appeal of older office spaces that were once steady performers in primary markets.

EXHIBIT 7: DEVELOPMENT-STABILIZED RETURN SPREAD (1999-2023)



Source: Author

EXHIBIT 8: 20 YEAR CORE (STABILIZED) VS. ALL NON-CORE STRATEGIES RETURN (2004-2023) TOP PERFORMANCE IS HIGHLIGHTED IN GREEN

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
ALL	13.08%	18.99%	14.55%	13.27%	-7.94%	-19.15%	13.41%	13.89%	10.32%	11.16%
STABILIZED	13.63%	19.30%	14.86%	13.67%	-8.07%	-18.82%	14.12%	14.12%	10.71%	11.08%
DEVELOPMENT	11.89%	17.00%	10.32%	10.79%	-7.33%	-20.41%	9.41%	12.28%	7.53%	11.03%
REDEVELOPMENT	3.93%	20.51%	21.74%	13.20%	-5.07%	-22.38%	13.56%	9.00%	7.70%	14.48%
REHAB/REPOSITIONING	14.88%	25.00%	11.81%	13.19%	-7.57%	-24.16%	7.35%	15.05%	9.35%	8.46%
LEASING	10.30%	11.10%	13.93%	8.69%	-8.90%	-20.61%	13.61%	16.82%	13.52%	13.94%
TOP STRATEGY/ STAB SPREAD	*125BPS*	*569BPS*	*688BPS*	/	*300BPS*	/	/	*269BPS*	*281BPS*	*340BPS*

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
ALL	11.73%	12.05%	7.79%	6.78%	7.14%	6.17%	1.66%	17.57%	6.28%	-7.31%
STABILIZED	11.72%	11.68%	7.54%	6.58%	6.68%	5.77%	0.95%	15.96%	5.41%	-8.21%
DEVELOPMENT	12.35%	14.68%	9.87%	8.43%	9.69%	8.44%	4.66%	23.77%	9.31%	-4.69%
REDEVELOPMENT	9.67%	9.77%	7.67%	7.57%	6.59%	2.78%	3.17%	19.32%	3.97%	-4.90%
REHAB/REPOSITIONING	10.08%	10.83%	6.52%	5.09%	7.93%	6.56%	-1.92%	11.89%	1.65%	-13.14%
LEASING	11.42%	12.47%	6.09%	4.92%	5.77%	5.36%	2.82%	20.08%	7.52%	-7.02%
TOP STRATEGY/ STAB SPREAD	*63BPS*	*300BPS*	*233BPS*	*185BPS*	*301BPS*	*266BPS*	*371BPS*	*781BPS*	*391BPS*	*352BPS*

Source: MSCI Property Level Database

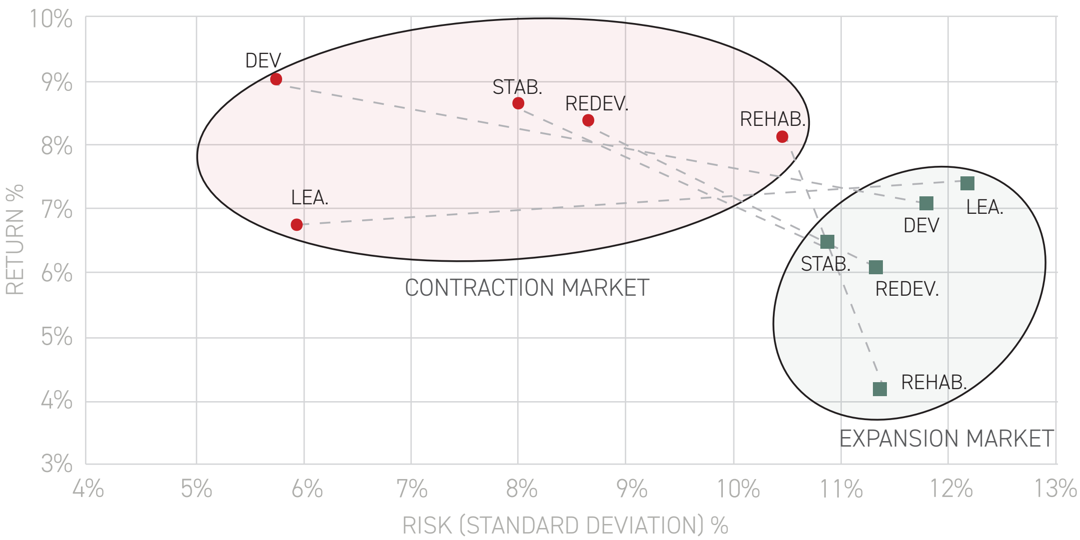
PATTERN 5: CAPITAL MARKET CONDITIONS DOMINATE PERFORMANCE OUTCOMES FOR ALL STRATEGIES

Returns for all styles were generally higher during the contraction (falling interest rate) periods. They also exhibited lower volatility. Additionally, *Exhibit 6* suggests that development strategies yielded a relatively higher risk-adjusted return in both contraction and expansion capital market periods. In contrast, the rehab strategy (value-add) experienced the most significant return variation across the periods. The leasing (core-plus) strategy maintained a relatively similar risk-return profile, while the stabilized (core) strategy was the lowest beta option, offering a reasonable, steady return throughout the periods.

A potential explanation for these patterns could be that value changes due to cap rate contraction occur in a smoother fashion, while returns in a rising cap rate period are more haphazard. The dispersion of returns widens as NOI eventually face lease expirations and leased properties are subject to a wider dispersion of valuation adjustments. It is worth noting that development and leasing properties achieved the strongest Sharpe ratios in the capital contraction market. The lower interest rate environment in the last ten years provided development and leasing with the "double dip" of cap rate compression and step-wise improvements in NOI.

As investors and banks become more risk-adverse and cautious post GFC and post-COVID, build-to-suit, forward commitments, and pre-leasing become more common ways to earn a development premium. This reduced the risk exposure for some of the properties under development strategy.[16]

EXHIBIT 9: TIME-WEIGHTED AVERAGE RETURN AND RISK BY MARKET PERIODS (2004-2023)



Strategy at Purchase	All	Stab.	Dev.	Redev.	Rehab.	Leasing
All Year Avg. Return	7.57%	7.43%	7.95%	7.11%	5.94%	7.09%
All Year Sd.	9.43%	9.52%	9.39%	10.03%	10.88%	9.65%
Strategy at Purchase	All	Stab.	Dev.	Redev.	Rehab.	Leasing
Expansion Market Return	6.59%	6.45%	7.08%	6.08%	4.17%	7.39%
Expansion Market Sd.	11.00%	10.88%	11.79%	11.34%	11.38%	12.18%
Strategy at Purchase	All	Stab.	Dev.	Redev.	Rehab.	Leasing
Contraction Market Return	8.77%	8.63%	9.02%	8.38%	8.11%	6.73%
Contraction Market Sd.	7.54%	8.01%	5.77%	8.66%	10.46%	5.95%

Source: MSCI Property Level Database

INSIGHTS FROM NON-CORE RETURNS

The MSCI Property Index database illustrates that development and leasing were both accretive strategies throughout the cycle. Even in 2023, where all strategies dipped into negative return territory, these two non-core strategies out-performed on a risk-adjusted basis. This is likely because secular trends, such as the growth of housing and industrial demand in the Sunbelt/Southwest, eclipsed cyclical and secular downturns in office and retail. Investing in the right thematic trend became as, or more, important than choosing specific assets.

A well-performing asset with great tenants and leases could falter if its foundation of demand declined. Development properties also "future-proof" investors and protect them from rapid obsolescence or the many uncertainties that go along with re-positioning or redeveloping older properties.

Another notable conclusion of this analysis is that the selection of investment style (core or non-core) makes a significant difference in return and volatility across different market regimes (contraction or expansion). The out-performance of development distinguishes this strategy from other non-core strategies such as leasing, rehab/renovation, and re-positioning. So, the exact type of non-core strategy matters. Finally, a metro/regional analysis of development performance suggests that thematic trends such as the growth of the warehouse sector or the rise of secondary sunbelt residential markets can out-perform traditional stabilized assets—especially in the development and leasing categories.

Core fund managers would potentially benefit if their decision making expands beyond the consideration of the return and volatility differences when choosing between non-core strategies, to include predictions of thematic, macro factors. These are often more important than the core vs non-core decision, or the type of non-core strategy to pursue. The key take-away is that core fund managers ultimately decide what kind of non-core deals to pursue to get an edge in the competitive world of open-end funds. The outcomes shown in this study indicate that these choices have been an important way to produce both positive and negative Alpha for US core funds.

The key take-away is that core fund managers ultimately decide what kind of non-core deals to pursue. These choices have been an important way to produce both positive and negative Alpha.

ABOUT THE AUTHORS

Yizhuo (Wilson) Ding is a Development Associate at Related Midwest/Related Companies and a former AFIRE Mentorship Fellow. He holds a MsRED from MIT and BBA from UW Madison.

NOTES

[1] Special thanks to Elizabeth Francis and Jim Costello from MSCI for generously providing essential data critical to this research.

[2] A recent study examined the correlation between superior performance and the capital market environment, including but not limited to the factors such as the prevailing interest rate environment, level of leverage, and accessibility to capital. In addition, other recent studies look at the potential for "manipulation" in real estate fund's interim return reporting and the consequences of appraisal smoothing that shape the decision making in private equity real estate investment, such as lower volatility and risk diversification. In short, the last decade provided a very interesting backdrop for this core vs non-core comparison. See also: Thomas R. Arnold Jr., David C. Ling, and Andy Naranjo, "Private Equity Real Estate Funds: Returns, Risk Exposures, and Persistence," Journal of Portfolio Management, May 1, 2019, https://www.reri.org/research/files/2018_arnold-ling-naranjo.pdf. Shilling, James D. and Wurtzebach, Charles, Is Value-Added and Opportunistic Real Estate Investing Beneficial? If So, Why ?. Journal of Real Estate Research, Vol. 34, No. 4, 2012, Available at SSRN: https://ssrn.com/abstract=2205191; Jackson, Blake and Ling, David C. and Naranjo, Andy, Catering and Return Manipulation in Private Equity (October 11, 2022). Available at SSRN: https://ssrn.com/abstract=4244467 or http://dx.doi.org/10.2139/ssrn.4244467; Riddiough, Timothy J., Pension Funds and Private Equity Real Estate: History, Performance, Pathologies, Risks (August 27, 2020). Available at SSRN: https://ssrn.com/abstract=3682113 or http://dx.doi.org/10.2139/ssrn.3682113.

[3] Ling, David & Naranjo, Andy. (2015). Returns and Information Transmission Dynamics in Public and Private Real Estate Markets. Real Estate Economics. 43. n/a-n/a. 10.1111/1540-6229.12069.

[4] Bollinger, Mitchell & Pagliari, Joseph. (2020). Practical Applications of Another Look at Private Real Estate Returns by Strategy. Practical Applications. 8. 1.11-6. 10.3905/pa.8.1.384.

[5] Riddiough, Timothy J. and Li, Da, Persistently Poor Performance in Private Equity Real Estate (May 3, 2023). Available at SSRN: https://ssrn.com/abstract=4437519 or http://dx.doi.org/10.2139/ssrn.4437519

[6] 75.1% were from the primary market, 12.3% were from the secondary market, and 12.6% were from the rest of the country. Geographically, 25% were from the Northeast, 10% were from the Southwest, 3% were from the Sunbelt Area, 8% were from the Midwest, 31% were from the Westcoast, 10% were from the Southeast, and 13% were from other locations.

[7] The risk-return style is defined as the "strategy at purchase." There are five different choices: 1) Stabilized: more than 80% occupied; 2) Leasing: standing investment purchased in the pre-leasing or lease-up phase; 3) Rehabilitation/Repositioning: standing investment purchased with the intention to undertake modest improvements using less than 25% of the purchase price; 4) Redevelopment: standing investment purchased with the intention to invest more than 25% of the purchase price to overhaul the property; 5) Development: direct funding of development. A property retains its "strategy at purchase" status until it is "sold" out of the index.

[8] For instance, development or repositioning properties may be held at cost, before transitioning to the DCF (discounted cash flow) methodology of valuation once they reach stabilization.

[9] The "development" category includes a wide variety of risk-return combinations including: Build to suit (fully pre-leased); projects with some pre-leasing; speculative projects with no pre-leasing; and a variety of construction risk mitigation strategies that may or may not include G-MAX construction contracts; and off-site improvement requirements by local jurisdictions. Yet, taken together, the out-performance of the development strategy is striking. Moreover, development returns are "net" of routine fees earned by the developer, but they may not include incentive fees paid to a developer for exceeding agreed-upon return targets or leasing milestones.

[10] Submarkets with property count less than ten have been shown as "N/A" to minimize small sample bias.

[11] Submarkets with property count less than ten have not been included in this calculation.

[12] Submarkets with property count less than ten have not been included in this calculation.

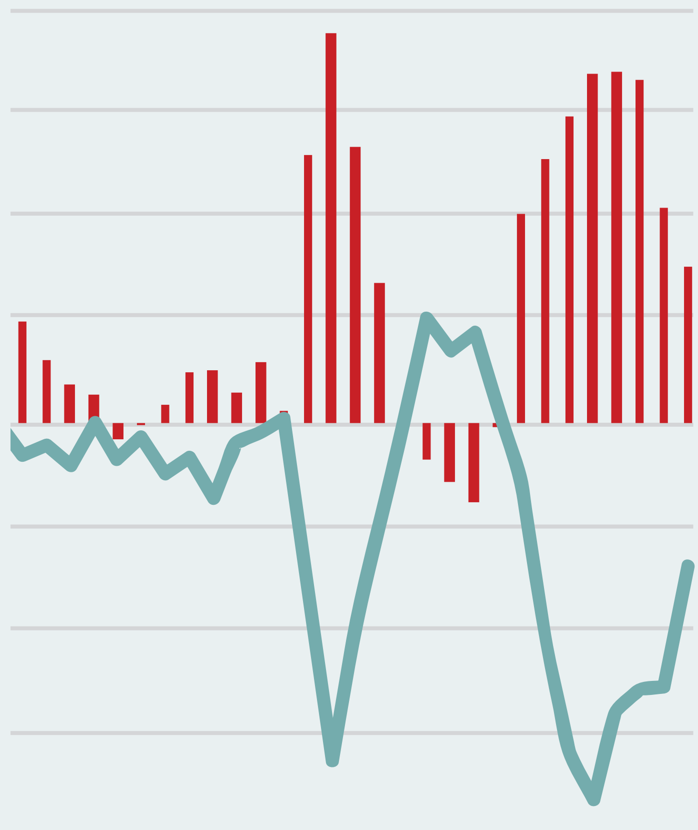
[13] Retail, industrial, or other sectors were omitted due to sample size less than ten.

[14] It is also essential to consider the potential limitations of the sample size in representing the broader market. The dataset may have a smaller proportion of buildings that have undergone rehabilitation/repositioning strategies, leading to a sample size that may not fully capture the strategy's returns across all private real estate investments.

[15] Other possible explanations: In a tight labor market, rehab skills are harder to find than ground-up construction skills, so costs could be higher. Also, rehab and repositioning are notoriously trickier to underwrite than ground-up construction, due to the uncertainty associated with building conditions and customized approaches to retrofitting vs new construction.

[16] The strategy at purchase in the database is static, which means the strategy identifier does not change along the property's life cycle. As a result, leasing strategies enjoy most of their value improvement early in the holding period when occupancy improvements occur. Stabilized strategies are exposed to occupancy changes at all times; this asymmetry may result in lower average total returns for stabilized properties.

FAVORABLE CONDITIONS



Mark Fitzgerald, CFA, CAIA
Head of North American Research
Affinius Capital

Jeff Fastov
Co-Head of Credit Strategies
Affinius Capital

A confluence of factors is creating one of the best lending environments since the post-GFC era, but changes in the competitive structure of the market will have a more dramatic impact over time.

Favorable lending conditions for nonbank commercial real estate lenders have emerged from a confluence of cyclical and structural tailwinds:

- Changes in risk-based capital (RBC) rules for banks are creating two primary impacts:
    1. **Reducing CRE debt appetite in general**, due to higher capital requirements, particularly for high volatility commercial real estate (HVCRE)
    2. **Motivating banks to make loans to nonbank lenders**, rather than directly to borrowers. This strategy can be profitable, even at tighter credit spreads, due to favorable RBC treatment.
- Nonbank lenders bridge the gap between debt and equity markets, offering a distinct advantage in offering more innovative structuring of the capital stack and the asset management skills that position them to optimize returns.
- A volatile economic cycle resulted in the Federal Reserve raising short-term interest rates at the fastest pace in the last forty years. Increased borrowing costs are creating pressure throughout the capital stack, particularly for floating-rate loans and loans with near-term maturities. In addition, lower property sales activity slowed the volume of loan payoffs and restricted new lending capacity.

This confluence of factors is creating what we believe is one of the best lending environments since the post-GFC era, which generated some of the highest risk-adjusted returns in real estate. That said, changes to the competitive structure of the market (e.g., the rise in market share and sustainability of nonbank lenders) will have a more dramatic impact over time.

REGULATORY IMPACTS

Since 2010, RBC rules for banks have undergone significant changes, primarily driven by the Basel III regulatory framework and additional measures introduced in response to the GFC. The key changes were higher capital requirements[1] and stricter risk weighting for certain asset classes.

One of the most impacted asset classes was HVCRE; this category was introduced with Basel III and includes loans that finance the acquisition, development, or construction of commercial real estate.[2] While standard capital treatment of CRE loans is 100% risk weight, for HVCRE this can be increased to 150% or more, particularly for loans on properties under development or construction that do not have pre-leased or pre-sold commitments.[3]

On the other hand, loans to nonbank lenders, including debt funds, are assigned a risk weight based on the creditworthiness of their borrower (e.g., the debt fund) as well as the underlying assets they are financing. These loans can have a lower risk weight if the nonbank lender has a strong credit profile. For example, A- rated borrowers (or stronger) often have risk weights of 50% or below, and unrated borrowers are generally assigned a 100% risk weight. Thus, for banks, capital treatment is often more favorable to lend to a nonbank lender rather than direct CRE lending, particularly for HVCRE loans.

Increased capital requirements for banks are detrimental in that they reduce the bank's available capital for other lending or investment opportunities, and increased provisions for losses affect profitability, which in turn influences the amount of capital generated internally through retained earnings. In addition to higher capital requirements, other factors have made lending to nonbank lenders more attractive than direct CRE lending at this point in the cycle:

- **Asset management:** Banks actively manage their direct loans, monitoring borrower performance and adjusting their risk assessments as necessary. This may involve more hands-on involvement in asset management, including stepping into the shoes of the borrower in the case of a loan default. In addition to higher risk-based capital charges associated with real estate owned, banks don't have the ownership skills to effectively take title.
- **Enhanced scrutiny:** A higher rate of loan defaults may lead to increased scrutiny from regulators, and additional capital requirements.

Overall, these regulatory changes have made it more expensive for banks to hold certain types of riskier assets, like HVCRE, and have encouraged banks to be more selective and conservative in their lending practices. This has created opportunities for nonbank lenders to fill the gap left by traditional banks.

Overall, these regulatory changes have made it more expensive for banks to hold certain types of riskier assets, like HVCRE, and have encouraged banks to be more selective and conservative in their lending practices.

MARKET ENVIRONMENT

The combination of a global pandemic, geopolitical conflict, and the highest inflation in forty years has created seismic shifts in fiscal and monetary policy since early-2020. *Exhibit 1* summarizes the swings in the capital markets, relative to the pre-pandemic baseline.

The Federal Reserve veered from historically accommodative monetary policy during the pandemic to raising rates at its quickest pace since the early 1980s while letting nearly $1.8 trillion run off the balance sheet in an attempt to battle elevated inflation.

CRE borrowing costs have more than doubled from their lows at the end of 2021, and a challenging financing environment, combined with discount rate uncertainty, led to CRE transaction volumes declining over 80% from their cyclical peak, the largest drop since the GFC.

CRE transaction volumes have declined over 80% from their cyclical peak, the largest drop since the GFC.

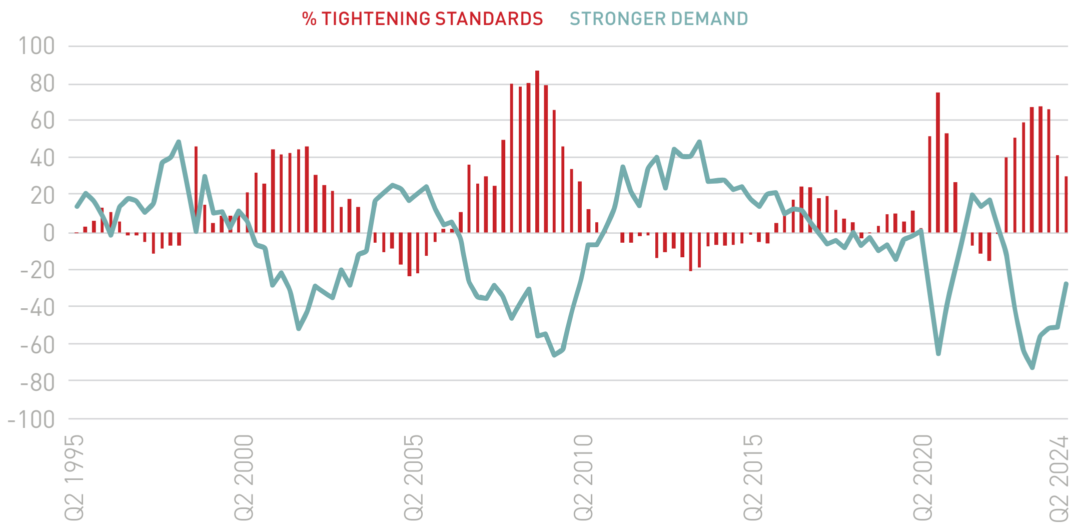
Uncertainty regarding the economy and interest rate policy has exacerbated the issue. Since early 2022, lending standards have tightened significantly, with banks showing caution similar to GFC levels. This tightening has widened the capital gap, creating opportunities for non-traditional lenders.

EXHIBIT 1: KEY CAPITAL MARKETS INDICATORS

	AVG. 2016–19	Q1 2022	JUNE 2024
FEDERAL FUNDS RATE	1.3%	0.2%	5.3%
FEDERAL RESERVE TOTAL ASSETS (TN)	$ 4.3	$ 8.9	$ 7.2
CRE DEBT COST	4.0%	3.5%	6.6%
TRAILING 12-MONTH TRANSACTION VOLUME (BN)	$ 529	$ 923	$ 350

Source: Federal Reserve Bank of St. Louis, Commercial Mortgage Alert, RCA, Affinius Capital Research. CRE debt cost represents a 50-59% LTV whole loan with 10-year term.

EXHIBIT 2: NET PERCENTAGE OF US BANKS REPORTING TIGHTENING LENDING STANDARDS AND STRONGER DEMAND

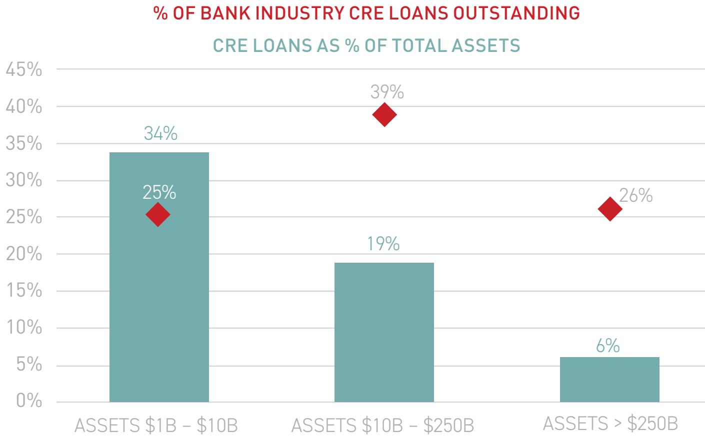


Source: Federal Reserve Senior Loan Officer Survey, Affinius Capital Research

In addition to the challenges posed in underwriting a commercial real estate credit investment in the current environment, banks have retrenched due to balance sheet issues, including:

- **Unrealized losses on investment securities.** As of Q1 2024, unrealized losses on investment securities were $517 billion, having spiked following the collapse of Silicon Valley Bank in March 2023. Because of the mismatch in the duration of assets and liabilities—long-term investments, including treasury securities—declined in value with rising rates while the withdrawal or repricing of short-term funding comprised of deposits led to the evaporation of net interest margins and/or a liquidity squeeze. For context, unrealized losses are approximately seven times their previous highs since 2007.[4]
- **Elevated CRE loan exposure.** As shown in *Exhibit 3*, regional banks have higher exposure to real estate than the money center banks, and hold 39% of all bank CRE loans outstanding.[5] CRE exposure played a role in the failures of Signature Bank and First Republic Bank in the first half of 2023; both were in the top ten of absolute CRE loan exposure.[6] As banks sort out portfolio issues, particularly related to office lending, and experience a lack of portfolio run off, they have drawn in their horns.

EXHIBIT 3: CRE LOAN EXPOSURE BY BANK SIZE



Source: FDIC, Affinius Capital Research

Non-traditional lenders are increasingly being relied upon to meet the borrowing needs of developers.

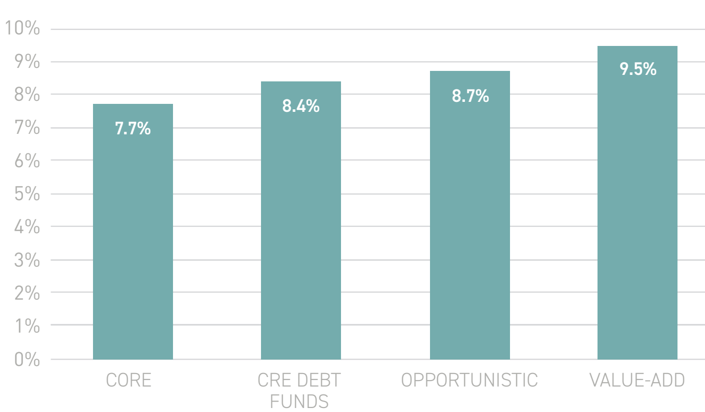
The pullback in debt capital availability has not been limited to the banking sector:

- CMBS origination volumes were $39.3 billion in 2023, down 64% from $110.6 billion in 2021.[7]
- Life insurer commitments of $47.9 billion in 2023 were down 32% from the cyclical peak of $70 billion in 2021.[8]
- GSE originations in 2023 were down 37% from their 2020 peak, and 27% from their average over the previous five years.[9]

RELATIVE VALUE

Debt funds were able to take advantage of the post-GFC dearth of credit availability and increased lending standards to produce some of the best absolute and relative performance in real estate. As shown in *Exhibit 4*, over the past decade, total returns for CRE debt funds have compared favorably versus other types of CRE fund investment.

EXHIBIT 4: CRE AVERAGE ANNUAL TOTAL RETURNS, PREVIOUS 10 YEARS[10]



Source: NFI-ODCE, Preqin, Affinius Capital Research

While debt fund performance is generally strong over the long run, there are also cyclical factors to consider that might make relative debt fund performance more appealing in the near-term:

- In the immediate post-GFC recovery period (2010 to 2012), debt fund cumulative total returns were 38.2% (versus 31.7% for opportunistic funds) and 20.5% for value-add funds.[11]
- Lending spreads widen when debt capital is scarce. Since 2001, transaction volumes and lending spreads have a strong negative correlation (-0.62).[12]
- According to Green Street, CRE valuations are down 20% overall since early-2022, though value decreases vary by property type. Tighter lending standards provide more attractive attachment and detachment points for gap financing. The combination of lower asset values and more conservative attachment points significantly reduce the lender's basis in the capital stack.

We expect that demand for nonbank construction lending will accelerate in 2025 as fundamentals for new product remain in favor for best-in-class assets. Non-traditional lenders are increasingly being relied upon to meet the borrowing needs of developers. Development capital needs may face additional tailwinds from the pandemic, as tenant demand is shifting across sectors and demand for certain types of new product (e.g., data centers) remains strong.

The current opportunity in debt investing is borne out by the historical relationship between NPI-implied cap rates,[13] lending rates, and the relative performance of the NPI vs. debt. Higher positive leverage is strongly associated with outperformance of CRE equity over the subsequent five years, whereas negative leverage is associated with debt outperformance. The relationship is robust, with an r-squared of 0.69, as shown in *Exhibit 5*. Today's spread falls between the GFC vintage and SNL crisis and suggests an elevated likelihood of outperformance of debt funds over the next few years.[14]

EXHIBIT 5: CAP RATE SPREAD TO LENDING COSTS AND RELATIVE PERFORMANCE OF CRE DEBT VS. EQUITY

Source: NCREIF, Giliberto-Levy, ACLI, Affinius Capital Research, Q3 1988 – Q1 2024

LOOKING AT THE CURRENT ENVIRONMENT

The current lending environment for nonbank CRE lenders is highly favorable. Changes in RBC rules for banks are reducing their appetite for CRE debt, particularly in high volatility areas, and incentivizing them to lend to nonbank lenders instead. Nonbank lenders, with their unique ability to bridge the debt and equity markets, are well-positioned to capitalize on these opportunities by offering creative financing solutions. Tightening lending standards among traditional lenders and increased borrowing costs have further exacerbated the capital gap, leaving ample room for non-traditional lenders to fill the void. With over $1.6 trillion of CRE loans maturing in the next three years and a significant portion of floating-rate loans requiring restructuring, the demand for alternative capital solutions is expected to surge.

Together, these dynamics are creating what we believe is one of the most advantageous lending environments since the post-GFC era, with nonbank lenders poised to gain significant market share and the ability to deliver strong risk-adjusted returns over time.

ABOUT THE AUTHORS

Mark Fitzgerald, CFA, CAIA, is Head of North American Research for Affinius Capital. Jeff Fastov is Co-Head of Credit Strategies for Affinius Capital.

NOTES

[1] Including holding more equity Tier 1 (CET1) capital as a percentage of risk-weighted assets, as well as capital conservation and countercyclical buffers.

[2] Bank for International Settlements. "Basel III: International Regulatory Framework for Banks." Last modified April 7, 2024. https://www.bis.org/bcbs/basel3.htm.

[3] Based on a minimum total capital requirement of 8% under Basel III.

[4] Federal Deposit Insurance Corporation; as of Q3 2023.

[5] Federal Deposit Insurance Corporation; as of Q3 2023.

[6] Trepp, "Q1 2023 Regional Bank Earnings: First Republic, The Cross, & Other Takeaways for CRE," last modified May 1, 2023, https://www.trepp.com/trepptalk/q1-2023-regional-bank-earnings-first-republic-the-cross-other-takeaways-for-cre.

[7] Green Street, "Commercial Mortgage Alert," accessed August 27, 2024, https://www.greenstreet.com/news/commercial-mortgage-alert.

[8] American Council of Life Insurers, "American Council of Life Insurers," accessed August 27, 2024, https://www.acli.com/.

[9] Mortgage Bankers Association, "Quarterly Commercial/Multifamily Mortgage Bankers Originations Index," accessed August 27, 2024, https://www.mba.org/news-and-research/research-and-economics/commercial-multifamily-research/quarterly-commercial-multifamily-mortgage-bankers-originations-index.

[10] Period is ten years ending Q1 2024. Core returns are NFI-ODCE net total returns. CRE debt funds, CRE value-add, and CRE opportunistic are from Preqin Private Capital Quarterly Index.

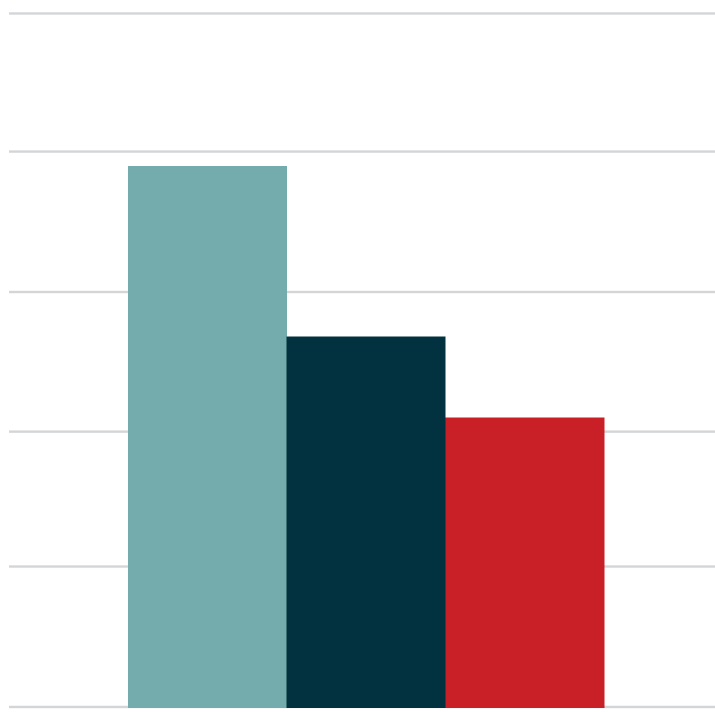
[11] Preqin, "Preqin Benchmark Indices," accessed August 27, 2024, https://www.preqin.com/data/preqin-benchmark-indices.

[12] Using correlation of CRE transaction volumes from MSCI/Real Capital Analytics and lending spreads on first mortgages from ACLI.

[13] NPI is NCREIF Property Index, one of the primary benchmarks for US private real estate, and calculates cap rates based on NOI and appraisals of contributed properties to the index on a quarterly basis.

[14] Note there are potentially some lagged effects with the analysis as implied cap rates and fund returns are appraisal-based, but we believe the analysis to be directionally correct.

INFRASTRUCTURE VIEWPOINT



Tania Tsoneva
Head of Infrastructure Research
CBRE Investment Management

Anticipated moves on interest rates at central banks could unlock capital and support the closing of a strong pipeline of infrastructure investments.

Mixed economic data in the first quarter of 2024 meant the financial markets remained volatile and the much-expected rate relief was delayed—at least for now.

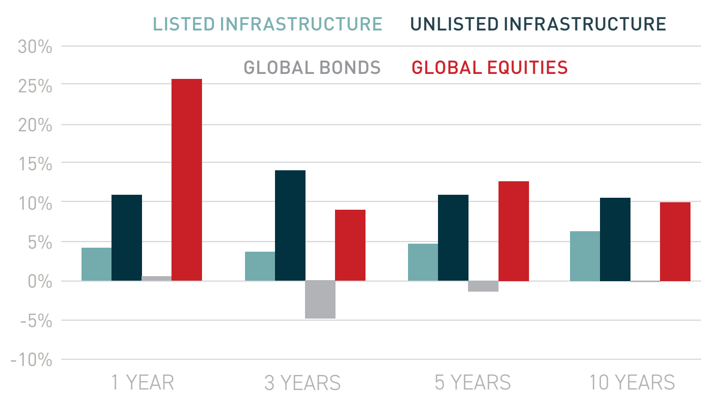
Inflation has proved to be much stickier—especially in the US — and geopolitical turmoil keeps the downside risk elevated. Inflation is generally expected to moderate, but remain at the target levels for central banks uplifted by the costs of deglobalization and the energy transition. In a structurally high inflationary environment, there is a potential for strong earnings growth and recurrent dividend yield for most infrastructure sectors.

The fragile outlook calls for balanced and diversified infrastructure portfolios with a preference for themes benefitting from structural tailwinds, such as power utilities and data centers, considering the upswing in power demand to fuel power-intensive AI applications. Renewable power is another sector which should benefit from data center owners and tenants seeking contracts for green electricity.

DIMINISHING PRESSURE ON VALUATIONS

In Q1 2024, financial markets priced in slower and more delayed interest rate cuts compared to the more positive expectations at the end of last year. There is still consensus that we have reached peak rates and central banks in Europe and the United States will start easing their monetary stance abating the pressure on capital values from rising discount rates. Combined with recurrent income yield, total unlisted infrastructure returns remain firmly in positive territory *(Exhibit 1)*.

EXHIBIT 1: INFRASTRUCTURE, BONDS AND EQUITIES ANNUALIZED TOTAL RETURNS (LISTED AND UNLISTED INFRASTRUCTURE, BONDS AND EQUITIES AS OF Q1 2024)



By sector, transport and network utilities contributed the most to Q1 returns, according to EDHECinfra.[1] This is likely attributed to resilient transport volumes and the gradual re-adjustment of regulated earnings to higher funding costs and inflation.

In Europe, power prices declined significantly as gas inventories were above seasonal levels. With lower power prices, unlisted merchant infrastructure has started to crest after several abnormally high quarters. Contracted infrastructure—with availability-based, mostly CPI-based revenues, and regulated infrastructure—have remained more stable over time *(Exhibit 2)*.

EXHIBIT 2: UNLISTED INFRASTRUCTURE ANNUALIZED RETURN BY BUSINESS MODEL (%)

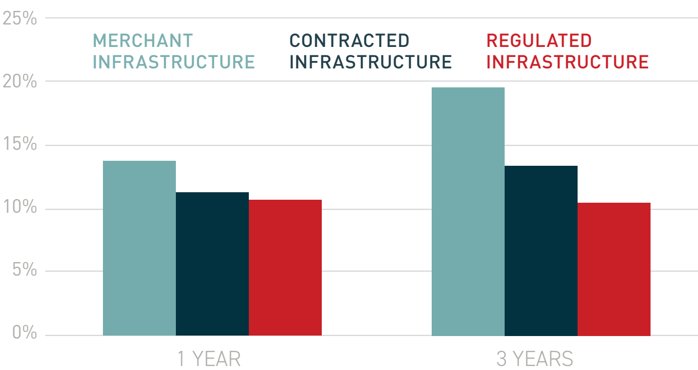
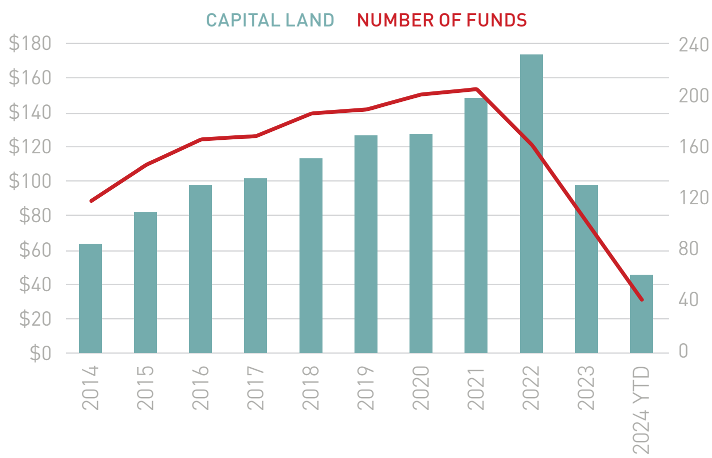


EXHIBIT 3: HISTORICAL INFRASTRUCTURE FUNDRAISING, VALUE ($ BILLIONS) AND NUMBER OF FUNDS (RHS)



The recovery of listed infrastructure that started in Q4 2023 continues, though at a slower pace. The defensive characteristics of listed infrastructure were tested extensively by macroeconomic headwinds over the preceding two years. A sense of calm is prevailing now. Moderating inflation and stabilizing interest rates are positive for infrastructure stock prices.

The rebound in listed infrastructure indices was more broad-based by sector and region in comparison with the public equity markets which continued to be dominated by gains in US-concentrated Big Tech stocks. The need-for-power story improved market sentiment for power and integrated utilities. A commodity price rally and solid earnings supported listed midstream companies.

A DRAG ON INFRASTRUCTURE FUNDRAISING

Infrastructure funds raised just over $40 billion to date in 2024 as the slowdown in fundraising continued almost halfway through the year *(Exhibit 3)*, according to Preqin. High interest rates and challenges in selling assets have affected fundraising activity.

More certainty on asset valuations is needed for investment activity to rebound and unlock liquidity by institutional investors for the rest of the year. According to Infralogic, the second quarter of 2024 looks promising with forty-six strategies looking to raise $72 billion by the end of June.

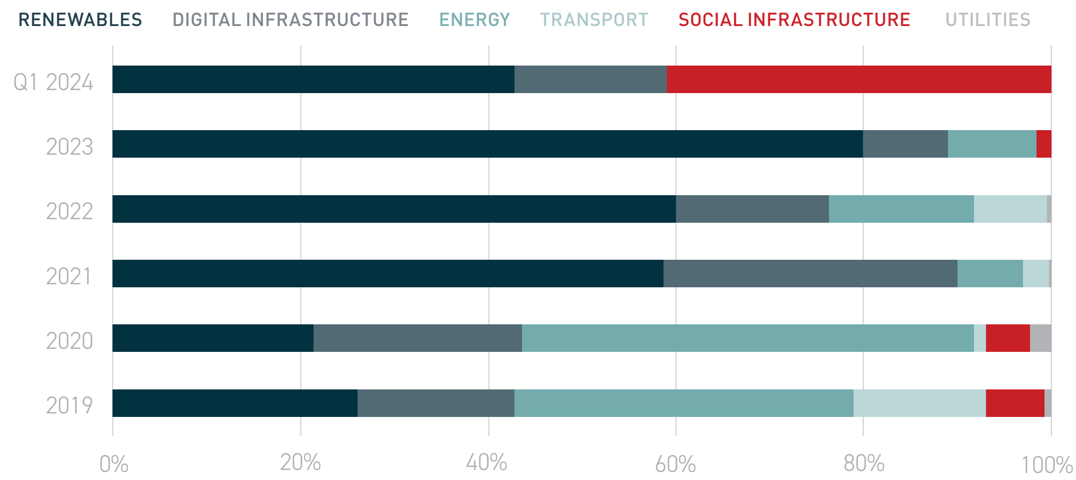
Consolidation and ever-rising fund sizes continue to be major themes in the asset class. The top ten funds in the market account for 34% of all capital being sought in the Infastructure assest class. The buyout of infrastructure managers is on an upswing. The race to the top for the major players continues and at the same time, multi-asset or private equity managers seek exposure to the relatively stable infrastructure industry.

For independent asset managers, the buyout route is a way to gain access to larger distribution channels and tap high net-worth and affluent investors as the private market universe expands with new long-term investment formats.

Structural tailwinds and geopolitical tensions explain the sectoral and geographic preferences in infrastructure fundraising. Analyzing capital raised for sector-specific strategies *(Exhibit 4)*, renewable energy and energy transition funds dominate with several of them in the mid- and small-market. Digital infrastructure is now a distant second, which is surprising given the ongoing sizable investment activity in data centers.

Most generalist funds in the market list digital infrastructure as one of their target areas. Multi-region funds continue to be the norm. An interesting development in Q1 2024 is the close of several APAC strategies which accounted for 36% of all capital raised, according to Infrastructure Investor.[2]

EXHIBIT 4: SECTOR BREAKDOWN (% OF TOTAL SECTOR-SPECIFIC CAPITAL RAISED)



The top ten funds in the market account for 34% of all capital being sought in Infastructure assest class.

DEAL PIPELINES

Similar to fundraising, the number of closed infrastructure deals in Q1 2024 stalled to their lowest level in five years *(Exhibit 5)*. This reflects the significant gap between buyers' and sellers' expectations over the preceding quarters. While more clarity on central banks' next moves is still desired, the investment pipeline shows signs of revival. Since the start of 2024, Infralogic's database lists more than seven hundred infrastructure transactions that moved forward in the investment process; out of them, more than three hundred deals are M&A transactions worth $91 billion.

EXHIBIT 5A: PRIVATE INFRASTRUCTURE DEALMAKING, VALUES BY DEAL TYPE ($ BILLIONS)

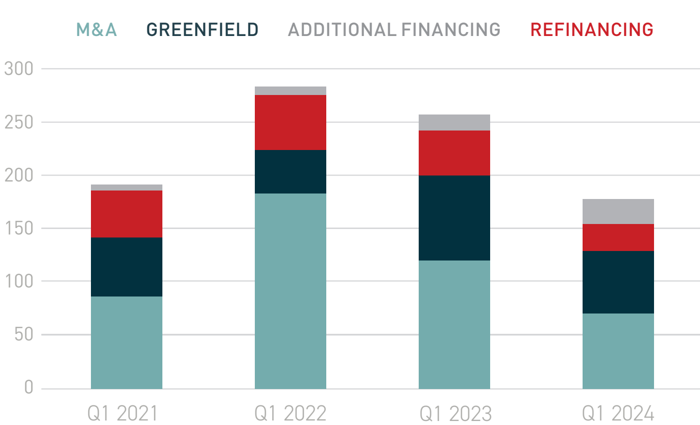
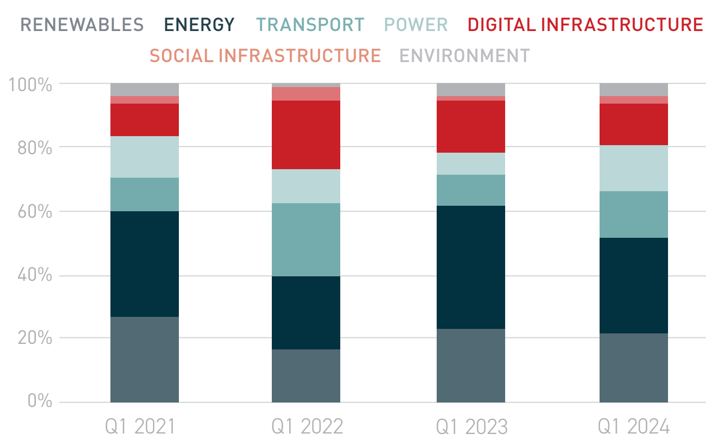


EXHIBIT 5B: PRIVATE INFRASTRUCTURE DEALMAKING, MARKET SHARE BY SECTOR (%)



Investors are watching large-ticket deals in the digital infrastructure space, such as the sale of Global Switch's Australian data center portfolio or the potential disposal of the AUD 15 billion Australian data center business AirTrunk.

The lure to gain data center exposure is attracting a wide range of investors, boosted by reports of the bulging generative artificial intelligence (GenAI) demand. In less than two quarters in 2024, greenfield activity in data centers equaled the total annual activity in 2022.

In the first quarter of 2024, there were several closed or announced deals in European airports. French toll road conglomerate Vinci acquired a 50% stake in the Edinburgh Airport for an estimated EV/EBITDA multiple of just over 20x. Except for Sydney Airport, there has been very little M&A activity in airports since the pandemic. The new deals—including an announced sale of a stake in Italian 2i Aeroporti—could help price discovery.

In terms of the number of transactions, solar photovoltaics (PVs) ranked first, followed by onshore wind and data centers. Battery storage is also picking up momentum with larger project sizes lining up financing.[3]

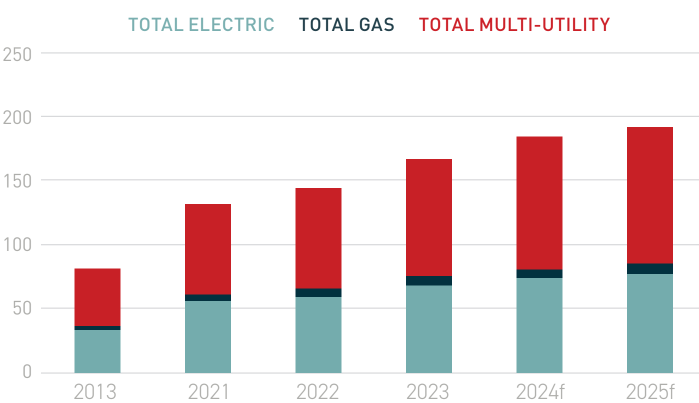
The lure to gain data center exposure is attracting a wide range of investors, boosted by reports of the bulging generative artificial intelligence (GenAI) demand.

POWER AND UTILITIES

Required CapEx on power infrastructure is hitting records across the globe, driven by rising electricity demand; the need to connect clean energy generation; electric vehicles adoption; and domestic manufacturing growth.

Data centers and GenAI are becoming a rapidly growing source of power loads. Regulatory Research Associates (a subsidiary of S&P Global Commodity Insights) estimates 11% higher spending levels in 2024 compared to the previous year for a sample of large, publicly listed US energy utility companies *(Exhibit 6)*.[4] The European Union's Action Plan on Grids considers a 60% increase in power demand by 2030 and outlined approximately €584 billion of required grid investments this decade.

EXHIBIT 6: HISTORICAL AND FORECAST UTILITY CAPEX ($ BILLIONS)



Infrastructure companies are also investing to increase resilience to physical climate risks. In the US, the National Oceanic and Atmospheric Administration (NOAA) released its outlook for the 2024 Atlantic hurricane season, predicting higher-than-normal hurricane activity.

NOAA forecasts a range of seventeen to twenty-five total named storms, which might incur direct costs to utilities and power plants in high-risk areas. Key in the assessment of utilities is the regulatory recovery mechanisms and whether they allow full or near-full recovery of storm-related costs.

In Europe, power prices have fallen rapidly materially changing the short-term outlook. As the penetration of renewables increases, so does day-hour power price volatility and the need for flexible generation, providing structural support for battery energy storage (BESS). Governments and grid utilities increasingly recognize the crucial role of energy storage and incorporate targets in their National Energy and Climate plans. The business models that are emerging contain a high degree of market-sensitive trading and ancillary revenues; however, proposals in Europe suggest the introduction of more predictable capacity market auctions and offtake contracts.

RENEWABLES

Worldwide policy stimuli are giving boost to renewable capacity. According to the Lawrence Berkeley National Laboratory, over 1,200 gigawatts (GW) of solar, storage, and wind capacity have requested interconnection in the US following the passage of the Inflation Reduction Act.

The additional tax incentives are leading to increased developer interest in clean energy. The wait times, however, are increasing. The typical project built in 2023 took nearly five years from the request to connect to reach commercial operation. US regional utilities have a hard task as the interconnection queues are expanding and currently stand at twice the installed power plant capacity nationwide *(Exhibit 7)*. This will prompt regulatory agencies to improve data transparency, coordinate interconnection and transmission planning as well as ease permitting requirements.

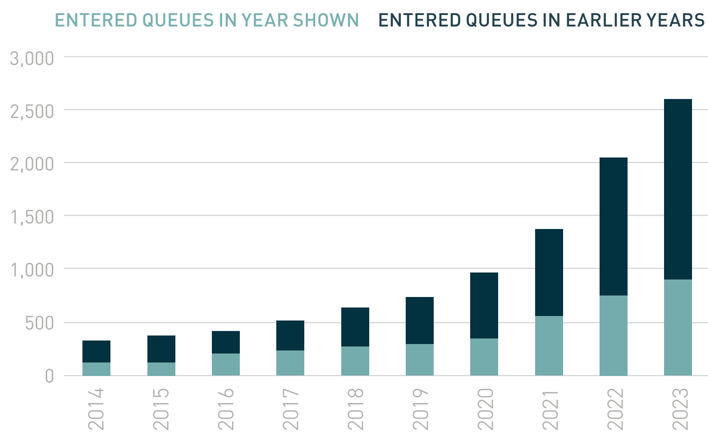
Market demand is a strong factor as well. Big Tech's drive for zero emission power is gaining speed. Talen Energy sold its hyperscale data center campus to Amazon Web Services while simultaneously entering into a long-term power purchase agreement (PPA) to supply the data center with nuclear energy from one of Talen's power plants. In another example, Microsoft signed a framework agreement with Brookfield Renewable Partners for 10.5 GW of renewable power. This improves the market sentiment for renewable development and the project economics as hyperscale off-takers often agree to premium PPA prices.

Climate policies are front and center in election campaigns and 2024 as a major election year will test the energy transition ambitions. The European Union is voting for members of the European Parliament in June 2024 and the US general elections are scheduled for November.

Climate policies such as the EU Green Deal and the US Inflation Reduction Act are being implemented at a time of rising energy costs, a war in Ukraine, concerns about a cost-of-living crisis and the efforts of governments to bring clean energy manufacturing home. A recent trade ban on Chinese solar panels by the US is an example of the latter. While protecting local manufacturers, the ban is exacerbating the oversupply of solar components in Europe.

The typical clean energy project built in 2023 took nearly five years from the request to connect to reach commercial operation.

EXHIBIT 7: TOTAL ACTIVE CAPACITY IN INTERCONNECTION QUEUES IN THE UNITED STATES (2014-2023 IN GIGAWATTS)



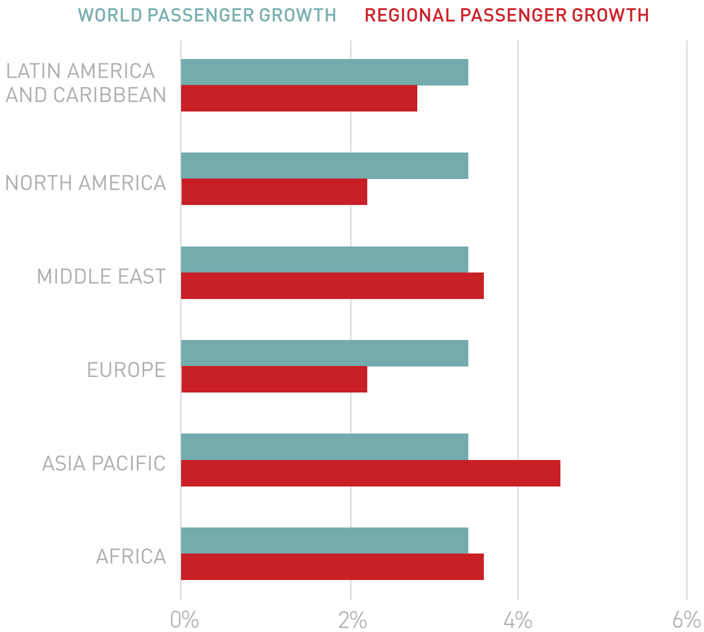
TRANSPORT

Transport volumes are holding up despite the adverse macroeconomic impacts on consumer disposable incomes. Travel demand is being driven by leisure and in aviation, the opening of China's international routes.

According to the International Air Transport Association (IATA), air passenger growth will continue to increase albeit at a slower rate compared to the years of pandemic recovery.[5] The agency expects that passenger journeys will double from the 2019 level to 7.8 billion by 2040 *(Exhibit 8)*.

APAC is leading the growth, and India in particular, is forecasted to achieve a growth rate of 6% over the next twenty years. The short-term uncertainties revolve around the passenger demand if jet fuel becomes more costly, or sticky inflation and mortgage rates pressure disposable income. In the longer term, the carbon footprint and related costs of aviation could cool consumer demand. IATA expects the industry to increase the use of sustainable aviation fuels (SAF) and use more carbon emissions offsets.

EXHIBIT 8: AIR PASSENGER FORECAST SUMMARY, COMBINED ANNUAL GROWTH RATE (2019–2040)



Ports are facing a slowdown in world trade (as measured by the ratio of world exports to GDP) and a change in trade patterns due to geopolitical conflicts. The onshoring of supply chains and trade disruptions are slowing world trade while friendshoring—manufacturing and sourcing from countries that are geopolitical allies—is affecting regional port dynamics. Energy flows that were originally aimed for Europe are now redistributed to BRIC countries and trans-shipment hubs in the Red Sea are still disrupted due to the conflict in the Middle East.

The investment outlook for transport is positive given the urgent need to decarbonize; transport accounts for nearly one-quarter of global energy related carbon emissions, according to the International Energy Agency.[6] The major contributor of emissions is road travel and in particular medium and heavy vehicles. The electrification of transport is proceeding at a rapid pace; battery prices continue to decline and improve the parity with internal combustion engines. In March 2024, the Transport for London (TfL) launched a concession to upgrade the EV charging infrastructure which will support its operational fleet of approximately 1,000 zero emission vehicles.[7]

The decarbonization of transport will need to look beyond electrification as there are segments such as maritime shipping that are hard-to-abate. A number of transition fuels are being explored, from green hydrogen to renewable gas but they are in different stages of technological readiness, efficiency and production cost. In May 2024, the Portuguese government launched an auction for green hydrogen and biomethane to incentivize their production by purchasing €14 million over a period of ten years (Infralogic).

> According to CBRE, the six fastest-growing data center markets in North America have doubled in capacity since 2019 while the vacancy rates are sub-par to market with very low speculative build.

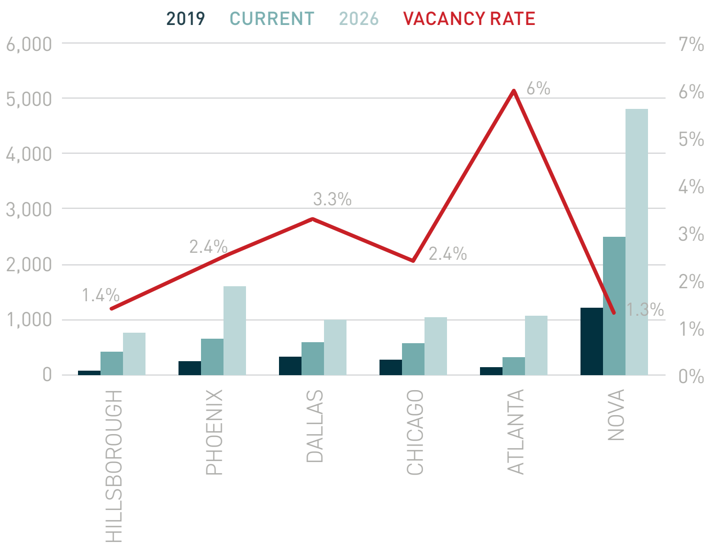
DIGITAL INFRASTRUCTURE

Data centers remain thematically well positioned and command strong investor demand. According to CBRE, the six fastest-growing data center markets in North America have doubled in capacity since 2019 while the vacancy rates are sub-par to market with very low speculative build *(Exhibit 9)*.

Colocation capacity is driven by the hypsercale cloud, AI, and enterprises using multi-cloud providers. GenAI requires larger facilities in size—50MW to 100MW—and more complex design in terms of hybrid cooling and reliability. At the same time, the latency (closeness to the client) is less important for training large language models (LLMs) and, therefore, secondary and emerging markets are becoming more appealing if they offer powered land and electricity at attractive prices.

With power-hungry AI applications, the attention has turned to the quantity and type of power used by data centers. Google recently said that they are matching 64% of their data center power consumption against hourly carbon-free energy; this compares to their target of 90% matching by 2030. Machine learning can increase efficiency by optimizing the servers' adaptability to different operating scenarios. GenAI workloads are variable with higher peaks than traditional loads. Intelligent systems and software can dynamically adjust the power supply to different racks or zones in a data center as well as shift power loads to times with lower carbon intensity.

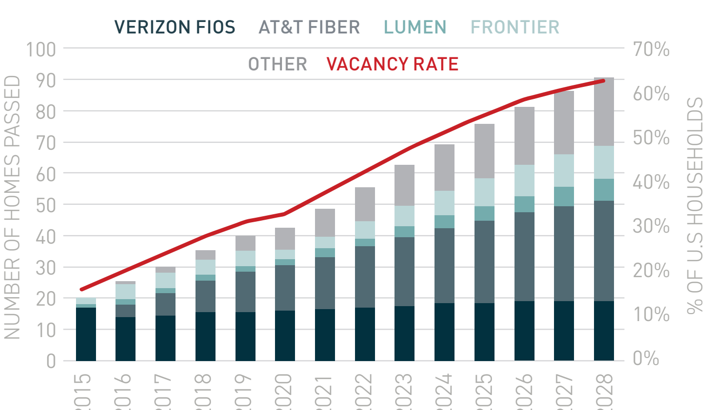
EXHIBIT 9: SIX FASTEST DATA CENTER MARKETS IN NORTH AMERICA, CAPACITY (MW)



Fiber-to-the-home (FTTH) has entered a late stage with slowing penetration and increased competition in urban areas. The fragmentation in many markets, the challenging business environment and inadequate project economics might usher in sector consolidation. The rate of FTTH growth will moderate as it becomes more costly to build in less densely populated markets, especially when considering labor shortages and the elevated cost of equipment.

FTTH penetration in the US has reached almost 50% *(Exhibit 10)* and is expected to plateau at about 60% by 2028, according to S&P Ratings. The traditional broadband operators (cable, telecom, and satellite) face elevated competition from fixed wireless access (FWA) which has gained strong traction in the US over the past two years. FWA offers speeds that are typically faster than copper wireline and a marginal cost advantage.

EXHIBIT 10: FTTH (FIBER-TO-THE-HOME) PENETRATION IN THE US (MILLION HOMES, LHS) AND % OF US HOUSEHOLDS (%, RHS)



CHANGES COMING

In the first quarter of 2024, policy rate uncertainty was still a drag on risk sentiment and dealmaking in private markets, including infrastructure. We are on the cusp of central banks making their next moves on interest rates which we believe will unlock capital and support the closing of a strong pipeline of infrastructure investments.

Despite the atypically low investment volumes in Q1 2024, infrastructure sectors such as energy transition and data centers continued to attract high levels of funding from diverse investors. The strong currents of digitalization are spilling over into the power infrastructure sector and driving the need for grid capacity and emissions-free power sources.

ABOUT THE AUTHOR

Tania Tsoneva is Head of Infrastructure Research for CBRE Investment Management.

NOTES

[1] EDHEC Infra & Private Assets. “EDHEC Infra & Private Assets.” EDHEC Infra & Private Assets - the Quants of Private Markets, August 21, 2024. https://scientificinfra.com/.

[2] Bentley, Zak. “Infrastructure Investor | Global Infrastructure Deals and News.” Infrastructure Investor, July 4, 2024. https://www.infrastructureinvestor.com/.

[3] All values are based on Infralogic data.

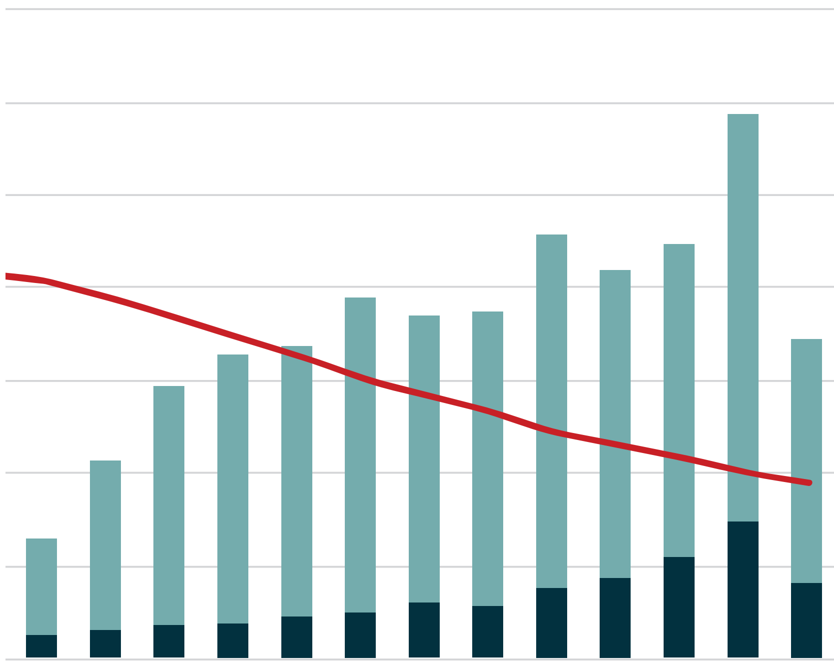
[4] SNL Financial LC. “Regulatory Research Associates (RRA) | SNL Financial LC,” n.d. https://www.capitaliq.spglobal.com/Sectors/Energy/RRA.aspx.

[5] International Air Transport Association. “International Air Transport Association.” Accessed August 27, 2024. https://www.iata.org/.

[6] “IEA – International Energy Agency,” n.d. https://www.iea.org/.

[7] Matters, Transport for London | Every Journey. “Keeping London Moving.” Transport for London, n.d. https://tfl.gov.uk/.

MISSING MIDDLE



Jack Robinson, PhD
Managing Director, Chief Economist and Head of Research
Bridge Investment Group

Morgan Zollinger
Director, Head of Market Research
Bridge Investment Group

In recent years, workforce and affordable rental housing in the US has emerged as a meaningful, demographic-driven opportunity for real estate investors. But the US has a significant housing affordability challenge, which could potentially be alleviated through private sector strategies.

In recent years, workforce and affordable rental housing in the US has emerged as a meaningful, demographic-driven opportunity for real estate investors, both domestic and international. Workforce and affordable housing is a crucially-needed product for the US housing market, and we have seen demographic and economic conditions amplify this need in recent years.

For instance, as of the most recent US Census Bureau data, there has been tremendous demand for rental housing with more than one million new renter households formed. Shockingly, four out of five of those new households were rent-burdened, meaning that they paid more than 30% of income on rent. This illustrates the significant housing affordability challenge we have in the US—one that we believe can be addressed through private sector strategies.[1]

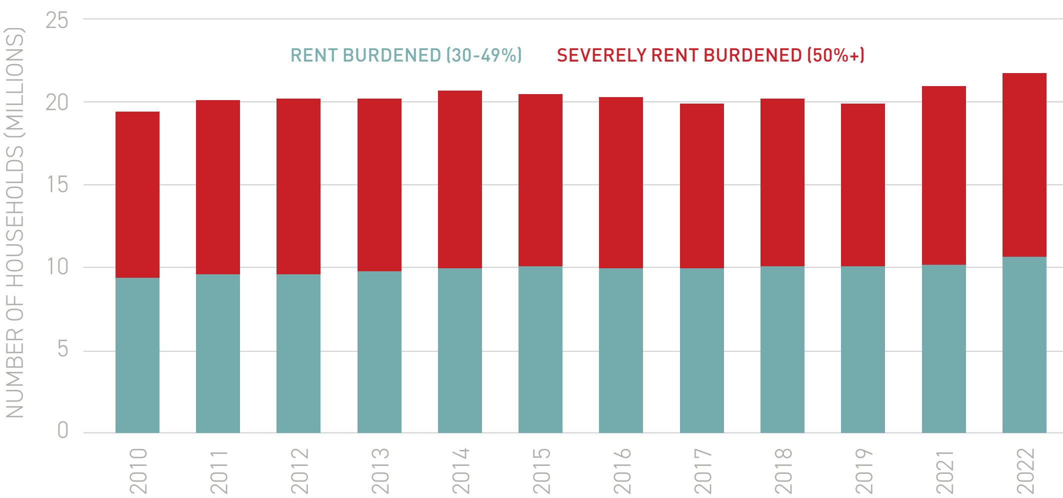
The lack of affordable and workforce housing is not a new problem in this country—but it is persistent and becoming more acute. While there are many nuances to how we got here, stated most simply, this is fundamentally a result of decades of an undersupply of attainable housing amid growing demand by moderate income households. These entrenched housing fundamentals were further exacerbated as pandemic-driven shocks throughout the housing market resulted in rapid rent growth, pushing the share of cost-burdened households higher over the course of the past three years.

The US model of workforce and affordable rental housing is unique relative to international affordable housing models, which are often deeply subsidized by public funds and targeted towards the lowest-income households, in that the US system serves a broad range of income levels. In addition to the deeply affordable segments most often associated with affordable housing, this sector addresses the housing needs of middle-income earners, including teachers, healthcare workers, and service professionals, who are essential to the fabric of thriving communities but are increasingly priced out of market-rate rental housing and the homeownership market.

It is clear why the segment of housing targeting moderate incomes has been largely absent from development pipelines: rising construction costs, particularly for land and labor, have made it financially unfeasible to build anything other than high-end Class A luxury housing. Historically, developers' abilities to increase affordable housing units in the US has been limited to federally subsidized options like low-income housing tax credits (LIHTC);[2] similarly, Section 8[3] vouchers have helped to provide households with access to existing multifamily units. However, both programs primarily target households earning less than 60% of the area median income (AMI),[4] often prioritizing those earning below 30% to 50% of AMI. While these programs are vital for low-income families, they fall short of addressing the needs of the "missing middle," leading to a significant increase in the number of renters who are cost-burdened or severely cost-burdened *(Exhibit 1)*.[5]

We believe that there is an opportunity to preserve and rehabilitate existing multifamily housing that is affordable to households earning less than 80% of area median income—the largest segment of US renters in the country.

EXHIBIT 1: NUMBER OF RENT BURDENED RENTER HOUSEHOLDS



Source: US Census Bureau, American Community Survey 1-Yr. Estimate, 2010-2022.

In our view, private sector solutions that preserve, rehabilitate, and develop high-quality workforce and affordable housing are not only much needed but also are highly attractive for private investment. We believe that there is an opportunity to preserve and rehabilitate existing multifamily housing that is affordable to households earning less than 80% of area median income—the largest segment of US renters in the country. In our view, differentiated strategies seek to not only address residents' physical needs for high-quality affordable housing, but also provide life-enhancing, on-site programs that advance social and economic mobility for residents and communities.

ASSET PROFILE: IDENTIFYING NATURALLY OCCURRING AFFORDABLE HOUSING

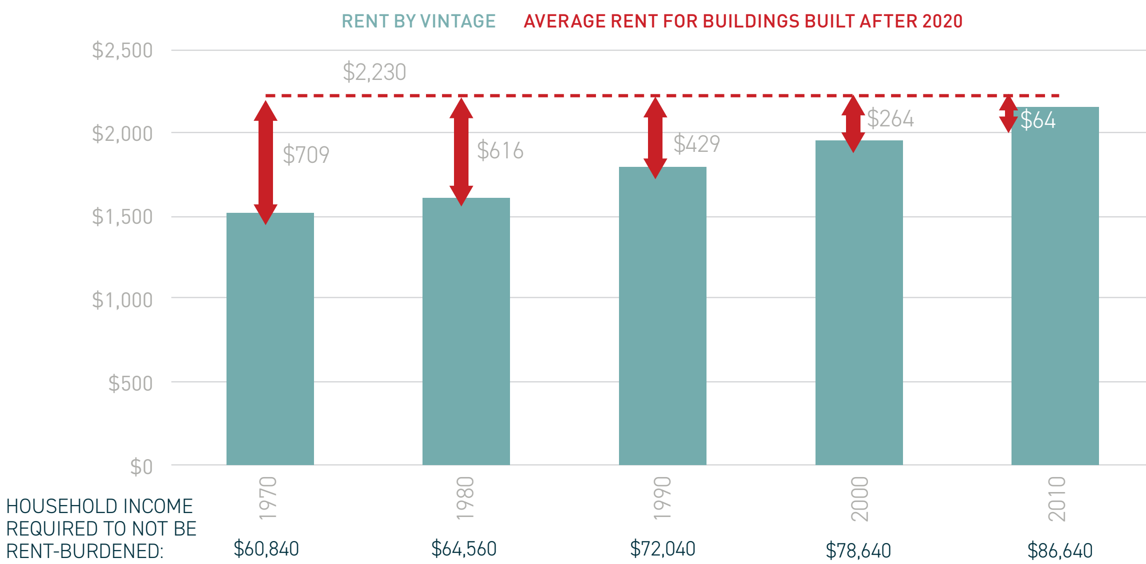
Traditionally, naturally occurring affordable housing (NOAH) has been identified through a rudimentary method of comparing individual property rents with market rents and applying a discount to determine relative affordability. This approach, while straightforward, typically leads to the identification of older asset vintages that offer meaningful discounts relative to market rents. However, older properties frequently come with trade-offs, including dated amenities that do not meet current resident expectations and deferred maintenance issues that, if unaddressed, can pose significant risks to both asset longevity and resident safety.

From a sheer volume perspective, there are thousands of assets for sale each year that are sub-optimally or inefficiently managed, and these assets can thrive with a hands-on operational touch. A well-crafted preservation and rehabilitation strategy increases the longevity, safety, and attractiveness of old or out-of-date exteriors and unit interiors while maintaining affordable rents.

In recent years, the limitations of a discount-to-market-rent-only approach to identifying NOAH workforce and affordable properties has become increasingly apparent. Beginning in 2020, pandemic-related disruptions have led to a sharp increase in rents, significantly raising the proportion of cost-burdened households over the past several years, especially as Class B housing supply has remained constrained. This has caused affordability pressures to extend into markets—and assets–that were once considered relatively affordable.

With significant rent increases across many markets, it has become clear that many renters' incomes have not kept pace with rent growth. As a result, the traditional rent comparison method may fail to accurately reflect the true affordability of a property. Properties that appear affordable based on a simple discount-to-market rent may still be financially out of reach for many households when considering income levels.

EXHIBIT 2: RENTS MORE AFFORDABLE IN OLDER VINTAGES THAN IN NEW CONSTRUCTION[6]



Source: RealPage, as of Q2 2024.

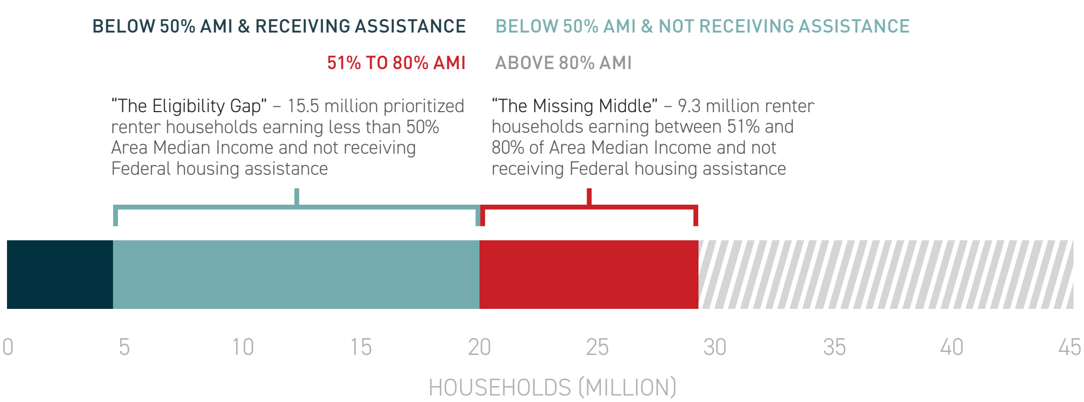
Given these dynamics, a rent-to-income approach is now seen as a more appropriate method for determining affordability within the workforce and affordable sector. By assessing rents in relation to tenants' incomes, this approach provides a more accurate measure of what is truly attainable for households. Furthermore, we can enhance our ability to identify NOAH properties by comparing rent levels to AMI, helping to pinpoint for which income segments of the population these properties are best suited. This methodology ensures that NOAH workforce properties are aligned with the needs of households that are most at risk of becoming cost-burdened, thereby mitigating financial strain and promoting housing stability.

THE "MISSING MIDDLE" RENTER COHORT

Workforce and affordable housing is critical to serving the needs of "missing middle" renters who qualify for federal housing assistance but do not receive it. Nationwide, less than one in six renters earning less than 80% of AMI actually receive support, whether in the form of federally subsidized housing, vouchers, or other local government assistance. This shortfall has left a staggering 24.8 million in-need households on the outside looking in.[7]

This chronically underserved middle market is overwhelmingly made up of people who are actively engaged in the workforce,[8] many in essential occupations such as teachers, police, firefighters, healthcare professionals, and municipal workers. From both an education and age demographics perspective, renters in the missing middle do not differ markedly from higher-income renters, and approximately one out of every three of these households includes children under the age of 18.[9] Without a full range of affordable housing options, many metros in the US risk losing residents and families that are vital to the social, cultural, and economic fabric of a city.

EXHIBIT 3: RENTER HOUSEHOLDS BY PERCENT INCOME-TO-AREA MEDIAN INCOME (AMI)

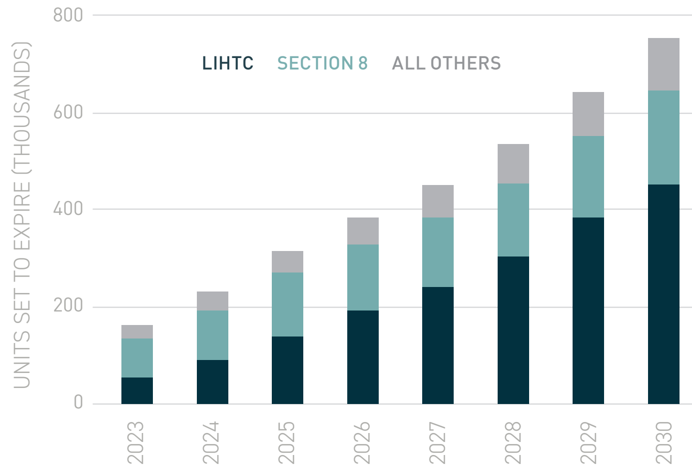


Source: US Census Bureau & Department of Housing & Urban Development, American Housing Survey, 2021.

HOLLOWING OUT THE BOTTOM: THE EROSION OF EXISTING SUBSIDIZED HOUSING

A key reason that missing middle renters face constrained housing options is that the market is operating against a backdrop of eroding supply of affordable homes, further underscoring the need for private sector measures to preserve low-cost housing. An estimated 640,000 affordable rental units could revert to market-rate status by 2030 as federal rent caps reach the end of mandates, to say nothing of potential losses related to the expiration of state and local restrictions.[10] Overall, we believe that the decreasing protections for subsidized housing will only compound affordability challenges for workforce and attainable housing as there will likely be not only a loss of affordable housing, but these properties are likely to revert to market rate housing and increase average market rent levels as well.

EXHIBIT 4: INCREASING NUMBER OF PUBLICLY SUPPORTED HOMES WITH AFFORDABILITY RESTRICTIONS ARE SET TO EXPIRE BY 2031



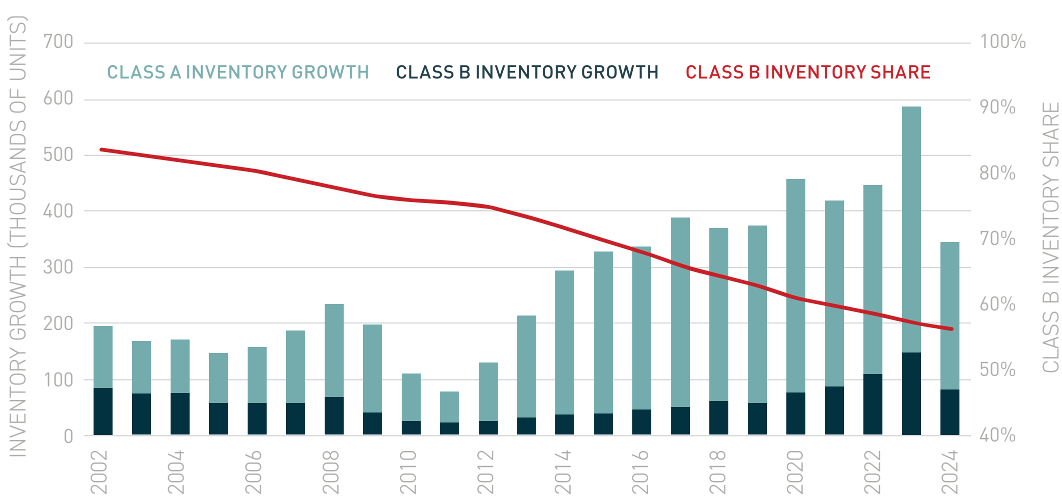
Source: National Housing Preservation Database, Picture of Preservation, 2021.

The Class B share of total multifamily inventory has continuously dropped over the past two decades, which combined with a broader lack of affordability has resulted in pent-up demand and a substantial supply gap.

CHALLENGES IN ADDING NEW STOCK, ESPECIALLY AFFORDABLE OPTIONS

Missing middle renters must also contend with the fact that new multifamily development in recent years has overwhelmingly targeted luxury product offered at unattainable price points, while the stock of workforce and affordable housing has been stagnant. Despite recent increases in the number of Class B units delivered each year, the Class B share of total multifamily inventory has continuously dropped over the past two decades,[11] which combined with a broader lack of affordability has resulted in pent-up demand and a substantial supply gap.

EXHIBIT 5: THE CLASS B SHARE OF MULTIFAMILY INVENTORY HAS STEADILY ERODED



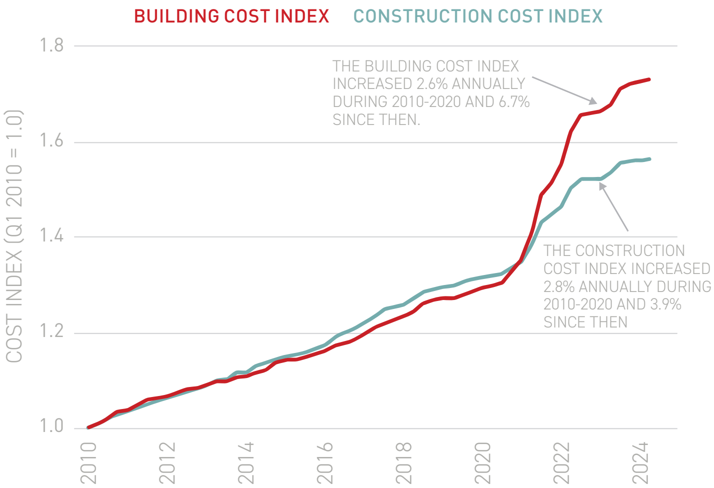
Source: CoStar, as of Q2 2024.

Since 2000, rising construction costs, particularly for land and labor, have made it financially unfeasible to build anything other than high-end Class A luxury housing. According to a widely respected cost index, overall construction costs have increased by 3.9% annually and building costs by 6.7% annually since 2020, exacerbating these financial challenges.[12] These escalating costs have placed significant pressure on developers, and as a result, many have shifted their focus toward luxury developments, where higher rent premiums are necessary to achieve acceptable returns on investment. While LIHTC has proven effective on the margins in incentivizing new development of affordable housing with 100,000 units rehabbed or built in a typical year, the program is unlikely to shake loose enough affordable homes without greatly expanded funding.[13]

The limited pace of development for Class B housing emphasizes the need for preservation and rehabilitation strategies of existing and aging US multifamily, a significant portion of which was built in the 1970s and 1980s. In our experience, this is a very stable asset class from an occupancy and turnover perspective, but without sufficient capital directed at preservation strategies, we will see increasing levels of functional obsolescence that further erodes the stock of affordable rentals.

According to a widely respected cost index, overall construction costs have increased by 3.9% annually and building costs by 6.7% annually since 2020, exacerbating the financial challenges.

EXHIBIT 6: CONSTRUCTION COSTS RISING AT PROHIBITIVE RATES



Source: Engineering News-Record via Moody's Analytics, Baseline Scenario, as of Q2 2024.

Economic pressures, including rising housing costs and stagnating wage growth, have only amplified the need for affordable rental options.

PRIVATE MARKET STRATEGIES A CRITICAL COMPONENT OF HOUSING STABILITY

The US housing market presents a unique landscape where the private sector plays a crucial role in providing and preserving affordable housing. Workforce and affordable rental housing serve as a vital component in addressing the "missing middle"—those households that earn too much to qualify for traditional subsidized housing yet struggle to afford market-rate rents.

In our view, it is crucially important for a stable and sustainable US housing market to have rental housing accessible to a broad swath of the population that is integral to the workforce. Furthermore, from a private sector perspective, we believe that the ability to address missing middle strategies should be a key focus for private investors, not only from the perspective of addressing a systemic shortfall in US multifamily production, but also for desirable investment characteristics.

We view strong demand and stable returns as the hallmarks of private-sector, investment-grade workforce and affordable strategies. One of the defining features that make workforce and affordable rental housing an attractive asset class is the persistent and growing demand for such housing. Economic pressures, including rising housing costs and stagnating wage growth, have only amplified the need for affordable rental options. This demand creates a stable tenant base, reducing vacancy risk and contributing to consistent rental income streams for investors.

Moreover, the performance of workforce and affordable rental housing has proven resilient across economic cycles. During economic downturns, demand often remains robust, as households seek more affordable housing options. This countercyclical nature provides a buffer against broader market volatility, contributing to the asset class's attractiveness.

For international investors accustomed to deeply subsidized affordable housing models, the US workforce and affordable rental housing sector presents a distinct but equally compelling investment opportunity. Its combination of strong demand and supportive public policies positions it as a robust asset class. As global housing challenges continue to evolve, this sector offers a strategic avenue for investors seeking to target both financial returns and social impact.

For international investors accustomed to deeply subsidized affordable housing models, the US workforce and affordable rental housing sector presents a distinct but equally compelling investment opportunity.

ABOUT THE AUTHORS

Jack Robinson, PhD, is Managing Director, Chief Economist and Head of Research; and Morgan Zollinger is Director, Head of Market Research, for Bridge Investment Group.

NOTES

[1] US Census Bureau. "2022 ACS 1-year Estimates." Census.gov, October 26, 2023. https://www.census.gov/programs-surveys/acs/technical-documentation/table-and-geography-changes/2022/1-year.html.

[2] Low-Income Housing Tax Credits (LIHTC) are a US federal program that incentivizes private developers to create or rehabilitate affordable rental housing for low-income households by providing them with tax credits.

[3] Section 8 is a US federal housing assistance program that provides rental subsidies to low-income households, either through vouchers or project-based assistance.

[4] AMI determines the thresholds for eligibility to receive housing assistance and can vary widely by market.

[5] US Census Bureau. "2022 ACS 1-year Estimates." Census.gov, October 26, 2023. https://www.census.gov/programs-surveys/acs/technical-documentation/table-and-geography-changes/2022/1-year.html.

[6] Real Page; as of Q2 2024. Minimum income based on industry standard that rends should spend no more than 30% of monthly income on housing costs.

[7] US Census Bureau and the Department of Housing and Urban Development, "American Housing Survey (AHS)." Census.gov, February 14, 2024. https://www.census.gov/programs-surveys/ahs.html. Housing Costs - Renter-occupied Units, created by the AHS Table Creator.

[8] US Census Bureau and the Department of Housing and Urban Development, "American Housing Survey (AHS)." Census.gov, February 14, 2024. https://www.census.gov/programs-surveys/ahs.html. Housing Costs - Renter-occupied Units, created by the AHS Table Creator.

[9] US Census Bureau and the Department of Housing and Urban Development, "American Housing Survey (AHS)." Census.gov, February 14, 2024. https://www.census.gov/programs-surveys/ahs.html. Housing Costs - Renter-occupied Units, created by the AHS Table Creator.

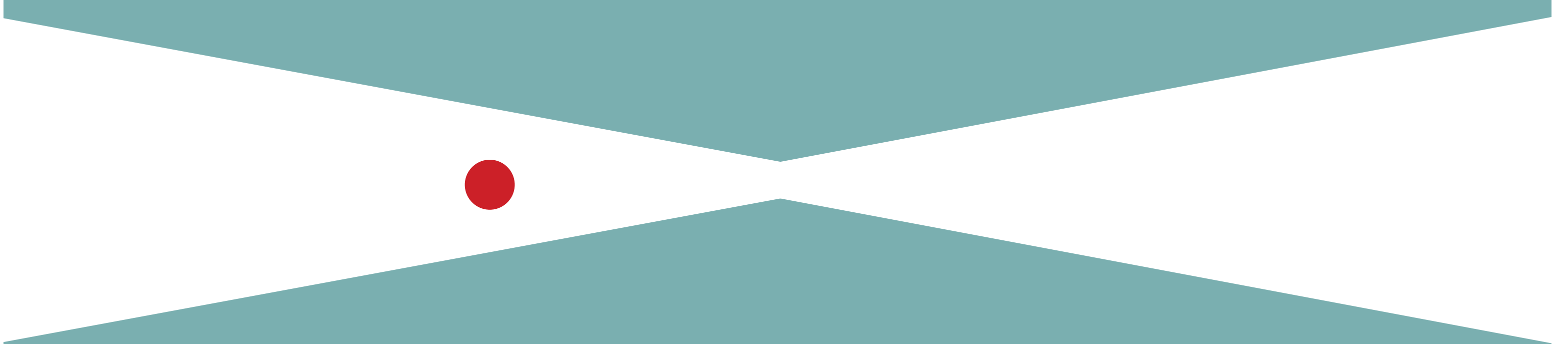
[10] National Housing Preservation Database (NHPD). "Picture of Preservation," May 20, 2024. https://preservationdatabase.org/reports/picture-of-preservation/.

[11] CoStar; as of Q2 2024.

[12] Engineering News-Record via Moody's Analytics, Baseline Scenario; as of Q2 2024.

[13] Will Fischer et al., "Low-Income Housing Tax Credit Could Do More to Expand Opportunity for Poor Families," report, August 2018. https://www.cbpp.org/sites/default/files/atoms/files/8-28-18hous.pdf

NARROW SPACES



Stewart Rubin
Senior Director, Head of Strategy and Research
New York Life Real Estate Investors

Dakota Firenze
Senior Associate
New York Life Real Estate Investors

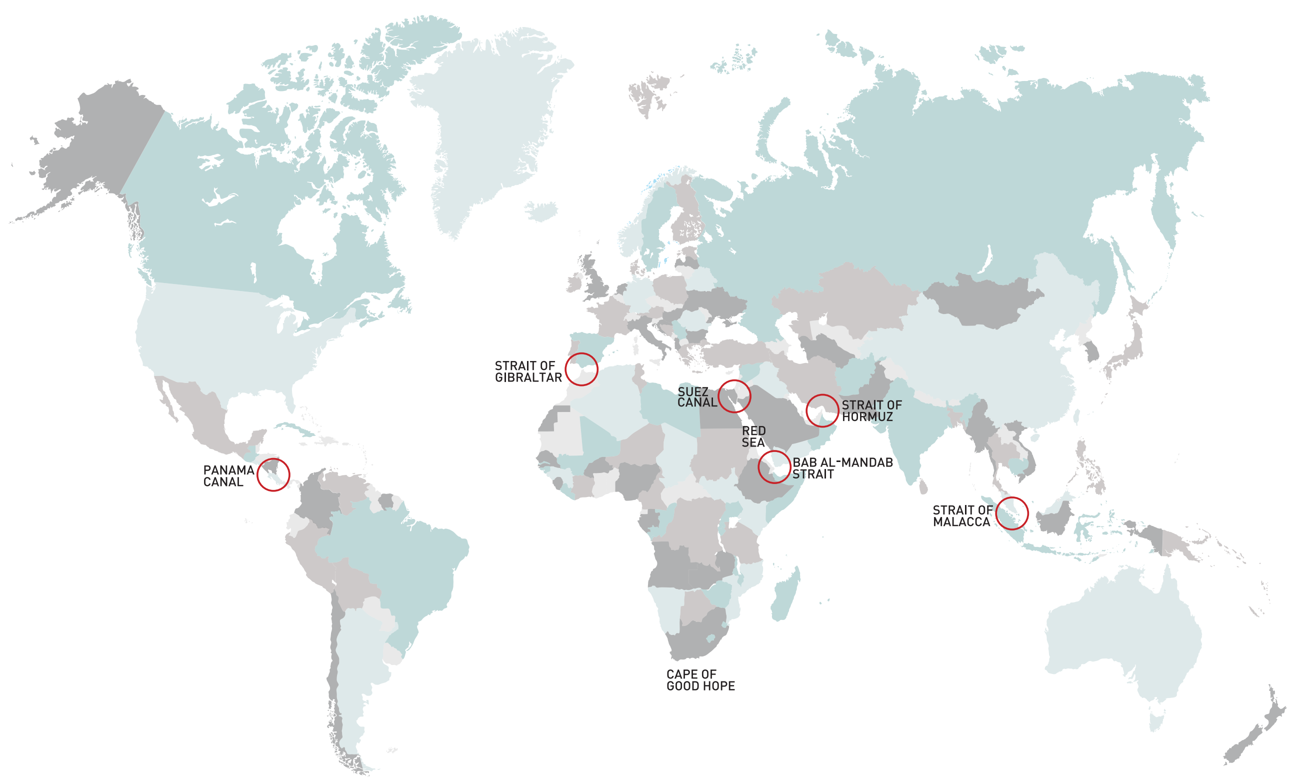
Several of the world's major shipping choke points are challenged, and heightened geopolitical tensions threaten world trade. The potential result of these blockages could power a tailwind on inflation—and a drag on GDP.

There are several major shipping choke points in the world, including the Panama Canal, Suez Canal, Bab el-Mandeb Strait, Strait of Malacca, Strait of Hormuz, and the Strait of Gibraltar. Should any of these straits become impassable for an extended period, globalization, inflation and GDP would be adversely affected. In addition, demand for industrial and retail properties could also be negatively impacted.

Maritime piracy and disruption have a long history. For example, piracy was rampant in the Mediterranean Sea in the first half of the first century BCE. Rome set out to render the sea conducive for commerce, and in 67 BCE deployed more than five-hundred ships to defeat the pirates. This was accomplished in just three months and culminated in the capture of the pirate's stronghold in Cilicia.

In the eighteenth century CE, and the beginning of the nineteenth century, state-supported piracy, extortion, and the enslavement of crews in the Mediterranean Sea was not unusual. The US fought two separate wars with Tripoli (1801–1805) and Algiers (1815–1816) to provide safe passage for US ships.[1]

EXHIBIT 1: POLITICAL MAP OF THE WORLD



Piracy and attacks along international trade routes have persisted throughout history and the twenty-first century is no exception. Most recently, attacks against ships in the Red Sea in 2023 and into 2024 have disrupted global trade.[2] Ships traveling through the Red Sea carry about 40% of the goods that are traded between Asia and Europe.[3] The Suez Canal and Bab el-Mandeb Strait—the choke points at both openings to the Red Sea—have experienced significant disruption, as the Red Sea route is being subject to attacks by the Iran-backed Houthi terrorist group.

Not surprisingly, daily freight capacity through the Red Sea has declined. According to the International Monetary Fund, maritime traffic as measured by volume, through the Suez Canal is down 54% so far in 2024 from a year ago *(Exhibit 3)*. The number of transits through the canal has declined 43% year to date *(Exhibit 4)*.

EXHIBIT 2: POLITICAL MAP OF THE MIDDLE EAST

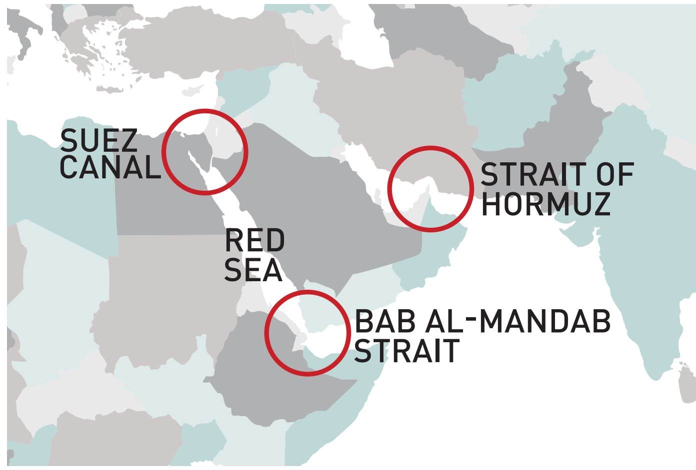
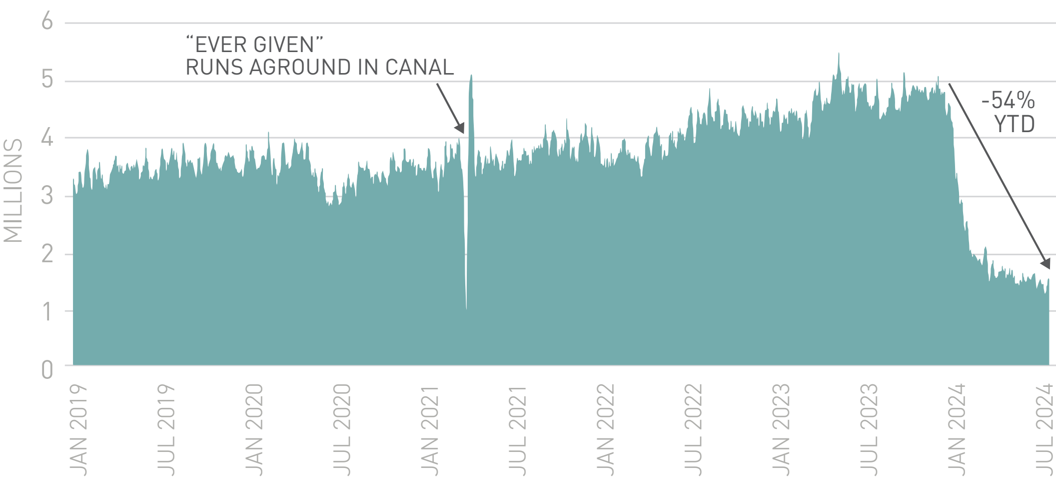
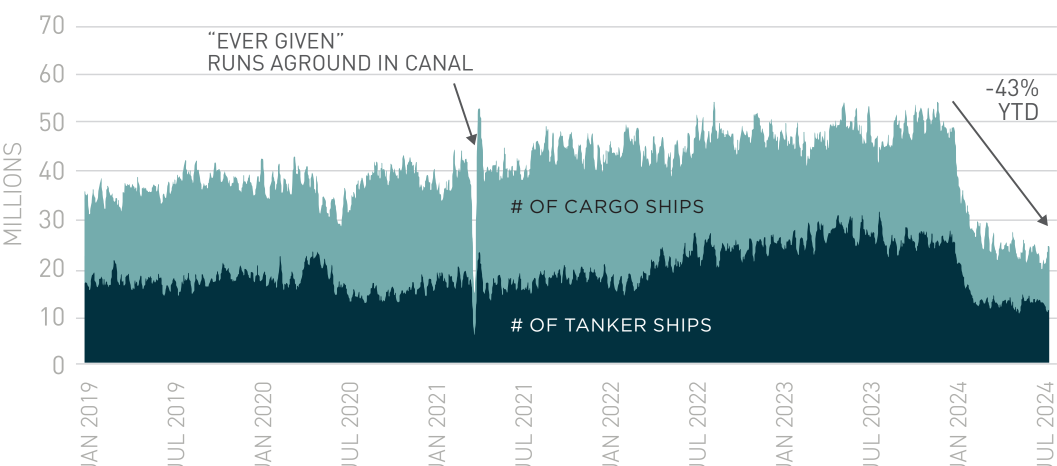


EXHIBIT 3: SUEZ CANAL TRANSIT VOLUME BY METRIC TON; SEVEN-DAY TRAILING AVERAGE



Source: UN Global Platform; International Monetary Fund's PortWatch. As of July 7, 2024

EXHIBIT 4: SUEZ CANAL NUMBER OF DAILY TRANSITS; SEVEN-DAY TRAILING AVERAGE



Source: UN Global Platform; International Monetary Fund's PortWatch. As of July 7, 2024

Ships that continue to sail through the Red Sea endure higher insurance, labor, and security costs. Ships that avoid the route altogether and instead travel via the Cape of Good Hope (CGH) also pay substantially higher costs in time and money. Major international shipping companies, including Moller-Maersk of Denmark and Hapag-Lloyd of Germany, have rerouted container ships around the CGH, resulting in an additional week or more in transit times. Oxford Economics estimates that a ship traveling at 16.5 knots from Taiwan to the Netherlands via the Red Sea and the Suez Canal takes about 25.5 days to complete the journey. But this rises to about 34 days if the journey is diverted around the Cape.[4]

It's axiomatic that additional travel time increases costs for Asia-Europe trips, but perhaps less intuitive is that it indirectly raises costs on *all* international shipping, since the added time reallocates ships away from other routes.

Shipping costs increased substantially during COVID and then receded as COVID's effects ebbed. But recently, with the terrorist attacks on Red Sea shipping, costs have risen again. According to Drewry Shipping Consultants, the average worldwide cost to ship a forty-foot container increased 253% between the end 2023 and the week ending July 4, 2024. Many companies are paying surcharges of 20% or more to account for higher fuel and insurance costs, even if they are protected from outright increases due to long-term contracts.

OTHER GLOBAL CHOKE POINTS AT RISK

While the Red Sea has been the major focus of recent maritime disruption, other global choke points are not free from risk. Should Iran decide to widen the regional conflict, it could attack ships carrying oil from Kuwait, Bahrain, and the UAE through the Strait of Hormuz. In the past, Iran has threatened to close the Strait of Hormuz to international shipping.[5] Should Iran be successful in carrying out such a threat, the price of oil would likely skyrocket. Between 40% to nearly half of the world's oil exports pass through the strait.[6]

In southeast Asia, the Strait of Malacca has also been subject to heightened pirate activity.[7]

In the western hemisphere, plentiful water is necessary for a properly functioning Panama Canal. Currently, the Canal Zone is suffering from a drought which has substantially lowered capacity in the form of ship size restrictions and fewer passages. Recent conditions have resulted in traffic being reduced to two-thirds of pre-drought capacity.

In the aggregate, the results of these blockages may lead to further deglobalization, higher energy prices, and more expensive imports. All the above are tailwinds for inflation, while less exports would have a negative impact on GDP.

> There is the potential for the conflict to expand more broadly which could potentially have a very negative impact on the global economy.

MORE DEGLOBALIZATION

Globalization, already under stress prior to the pandemic, has suffered mid- to longer-term damage from COVID, the Russian invasion of Ukraine, and attacks by the Houthis against global shipping in the Red Sea. Meanwhile, the US is seeking to reduce its reliance on China and other countries for critical supplies including semiconductor chips, active pharmaceutical ingredients, generic medicines, and personal protective equipment. This trend will likely be accelerated by geopolitics, national security considerations, and labor shortages.

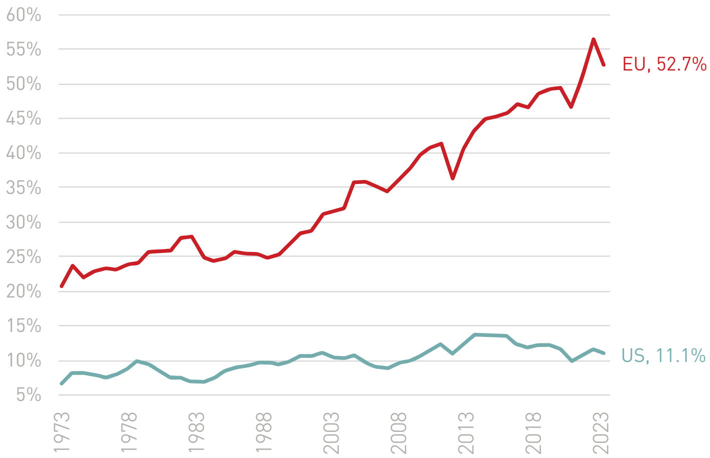
In the wake of the terror attacks perpetuated against Israel on October 7, 2023, war broke out between Israel and Hamas. Other regional proxies and beneficiaries of Iran have joined the war at varying degrees of engagement and, in addition, have attacked US positions resulting in the deaths of US troops. There is the potential for the conflict to expand more broadly which could potentially have a very negative impact on the global economy.

The blockages at the Suez Canal and the Panama Canal result in less trade and more products being manufactured domestically or in neighboring countries - which means more deglobalization.

A NEGATIVE IMPACT ON GDP

The Suez Canal (opened 1869) and the Panama Canal (1914) were built to facilitate world trade by substantially shortening shipping routes. If trade is rerouted away from global choke points and gets more expensive (i.e., higher costs for labor, ship rental, fuel, and insurance), global GDP will be negatively impacted.

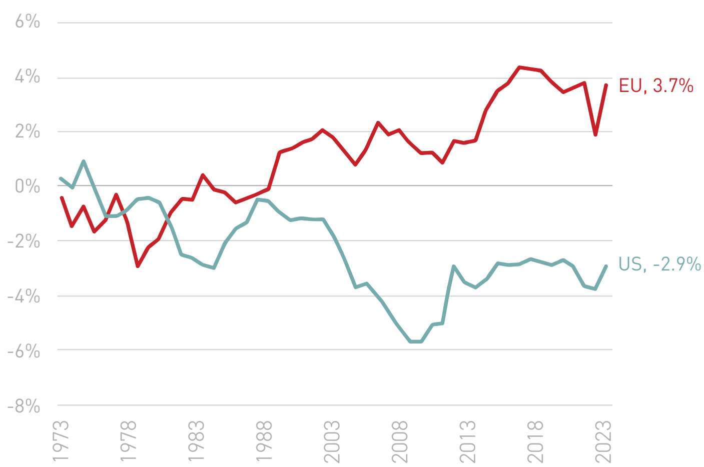
EXHIBIT 5: EU VS. US EXPORTS



Source: World Bank "World Development Indicators". Data begins in 1973, through 2023.

According to the OECD, a doubling in shipping costs would add 0.4 percentage points to consumer inflation for OECD countries after about a year

EXHIBIT 6: EU VS. US NET EXPORTS



Source: World Bank "World Development Indicators". Data begins in 1973, through 2023.

Europe is far more reliant on exports as a positive contribution to GDP than is the US Exports constitute 52.7% of EU GDP compared to just 11.1% of US GDP. Net exports (exports minus imports), which is the way trade is computed as a contribution to GDP, was +3.7% in the EU, meaning exports exceed imports, compared to -2.9% in the US, where imports exceed exports. The global choke point most exposed now is the Suez Canal-Red Sea-Bab el-Mandeb route, which is the fastest way to move goods between trading partners in Asia and Europe.

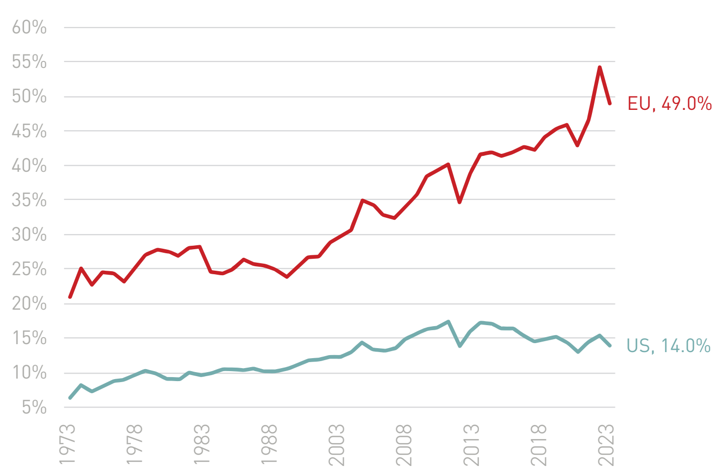
In addition, the cost to Egypt and Panama, the host countries of the canals, is not inconsequential. Egyptian Finance Minister Mohamed Maait revealed projections that Suez Canal revenues would decline around 60% due the Red Sea crisis.[8] The Panama Canal Authority (ACP) announced that they expect to post a $600 million to $800 million decline in revenue.[9]

A TAILWIND TO INFLATION

Iran-backed Houthi terrorist attacks on cargo ships in the Red Sea have resulted in higher costs as major shipping companies reroute around the CGH for travel between Asia and Europe. As noted, the cost of shipping via the CGH requires higher labor, ship rental, fuel, and insurance costs. Those that chance a passage via the Red Sea endure higher insurance, labor, and security costs, as well as the risk of losing their ship and having sailors taken hostage.

The Organisation for Economic Co-operation and Development (OECD), representing thirty-seven countries including the US, stated on February 5, 2024, that an escalation in attacks "could result in renewed price pressures" and jeopardize what has now been two years of resilience in the global economy.[10] According to the OECD, a doubling in shipping costs would add 0.4 percentage points to consumer inflation for OECD countries after about a year.[11]

EXHIBIT 7: EU VS. US IMPORTS



Source: World Bank "World Development Indicators". Data begins in 1973, through 2023.

The impact of higher import costs and the resultant higher inflation would also impact Europe more than the US because imports constitute 49% of EU GDP versus 14.0% for the US. International insurance company Allianz Trade contends that "a doubling of freight costs sustained for more than three months could push the eurozone's inflation rate up by three-quarters of a percentage point and reduce economic growth by almost a percentage point."[12]

Should Iran decide to widen the regional conflict by attacking ships carrying oil from Kuwait, Bahrain, or the UAE through the Strait of Hormuz, the price of oil could skyrocket, creating substantial inflationary pressure.

CRE DEMAND: LOGISTICS, RETAIL

The Red Sea conflict may weaken goods consumption and potentially force retail sales lower in the near term, which could cause a disruption in logistics and retail space demand. Should prices rise to account for higher shipping costs, sales would likely decline and result in less demand for logistics and retail space. To the extent that international shipping blockages contribute to deglobalization, US manufacturing facilities would potentially benefit.

Recent drought conditions in Panama, resulting in the canal functioning at only two-thirds capacity, render US Pacific ports more attractive. The widening of the Panama Canal to allow Panamax ships to navigate the isthmus resulted in more twenty-foot equivalent (TEU) containers shipped via Gulf and Atlantic ports. However, Gulf and Atlantic Port markets could potentially be negatively impacted if disruptions were to continue for a significant period.

STRAITS AND NARROWS

Several of the world's major shipping choke points are challenged. The Bab el-Mandeb Strait (and effectively the Suez Canal) is threatened by terrorism and the Panama Canal is experiencing drought conditions negatively impacting shipping traffic. Should Iran close the Strait of Hormuz, major oil producers will have great difficulty shipping their primary export. The potential result of these blockages or potential blockages is more deglobalization, higher energy prices, more expensive imports—both a tailwind to inflation, and a drag on GDP.

The Red Sea conflict may weaken goods consumption and potentially force retail sales lower in the near term, which could cause a disruption in logistics and retail space demand.

ABOUT THE AUTHORS

Stewart Rubin is Senior Director and Head of Strategy and Research, and Dakota Firenze is a Senior Associate, for New York Life Real Estate Investors, a division of NYL Investors LLC, a wholly-owned subsidiary of New York Life Insurance Company.

NOTES

1 "Milestones in the History of U.S. Foreign Relations - Office of the Historian," n.d. https://history.state.gov/milestones/1801-1829/barbary-wars.

2 Before 2023, the most recent disruption was logistical: the ship "Ever Given" became wedged across the waterway blocking canal traffic for six days in March 2021.

3 Hannon, Paul, and William Boston. "The Red Sea Conflict Is Scrambling Shipping. Europe Is Bearing the Brunt." Wall Street Journal, January 19, 2024. https://www.wsj.com/world/europe/the-red-sea-conflict-is-scrambling-shipping-europe-is-bearing-the-brunt-a0aac0e3.

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OPCO-PROPCO OPPORTUNITY

Paul Stanton
Co-Founder & Partner
PTB

Donal Warde
Director of Special Projects
TF Cornerstone

Within the evolving investment landscape, the emergence of OpCo-PropCo models present a compelling opportunity for institutional investors seeking to capture value in innovative, operationally complex real estate business models.

The real estate investment landscape is witnessing a transformative shift, driven by macroeconomic changes, evolving human needs, and technological advancements. Within this dynamic environment, the emergence of OpCo-PropCo investment models presents a compelling opportunity for institutional investors seeking to capture value in innovative, operationally complex real estate business models that have emerged from this transforming landscape.

This article explores the evolution of OpCo-PropCo investments, elucidates the diverse investment structures, and identifies the key players shaping a handful of burgeoning sectors.

THE CURRENT CONTEXT

In recent years, traditional real estate investment paradigms have encountered limitations in accommodating the rapid proliferation of novel real estate business models. Venture capital, while adept at fostering innovation, often falls short in adequately addressing the capital requirements and risk profiles inherent in real estate ventures. The requirements include lease payments, space build-outs, furnishings, etc. The most notable example is Softbank's efforts in funding WeWork's growth, which led to total losses of over $14 billion for Softbank as of WeWork's bankruptcy filing last November.[1]

Conversely, traditional real estate investment frameworks often emphasize stable, long-term returns, which naturally leads investors to favor investment profiles with a proven track record. These frameworks typically rely on historical performance data, established market trends, and de-risked profiles. This focus on stability can create a risk-averse environment where emerging or innovative real estate ventures, which might not have extensive performance histories, struggle to attract investment.

The convergence of these factors has catalyzed the rise of OpCo-PropCo investments, offering a hybrid approach that blends the risk appetite of venture capital with the stability of real estate investment. OpCo-PropCo investments entail the pairing of an operating company (OpCo), typically focused on technology-driven real estate solutions, with a property company (PropCo) responsible for acquiring and managing real estate assets.

OpCo-PropCo investments involve a dual-entity structure:

- **OpCo** focuses on the operational strategy, management, and value-add initiatives for real estate properties.
- **PropCo** holds the real estate assets and typically finances these assets with the capital raised from investors.

This separation allows for focused management of each entity and tailored investment strategies that meet diverse investor needs.

EXPLORING OPCO-PROPCO INVESTMENT MODELS

The landscape of OpCo-PropCo investments encompasses diverse structures tailored to accommodate the unique needs and objectives of stakeholders. Broadly categorized, these models include:

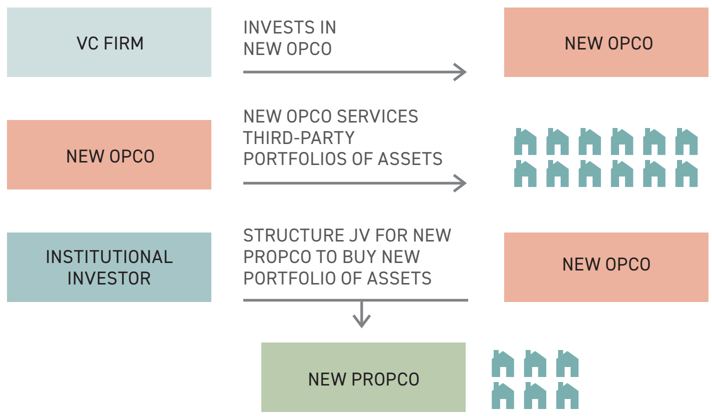
JVs with Institutional Investors

JVs (JVs) represent a prevalent approach to OpCo-PropCo investments, leveraging the complementary strengths of OpCos and institutional investors. OpCos, often equipped with innovative real estate solutions, partner with institutional investors to establish PropCos dedicated to real estate acquisition and management. This model facilitates the deployment of capital at scale while mitigating risk through shared governance structures.

Key features of JVs include:

- **Alignment of Interests:** One of the primary advantages of JVs is the alignment of interests between OpCos and institutional investors. By structuring partnerships around shared goals and incentives, stakeholders can collaborate effectively to pursue mutually beneficial opportunities.
- **Streamlined Decision-Making:** JVs streamline decision-making processes by delineating roles and responsibilities between OpCos and institutional investors. OpCos typically assume responsibility for day-to-day operations, including property management and asset acquisition, while institutional investors provide oversight and strategic guidance.
- **Enhanced Access to Capital:** For OpCos, JVs offer access to institutional capital, enabling them to scale their operations and pursue growth opportunities more aggressively. By tapping into institutional investor networks, OpCos can access larger pools of capital and expand their real estate portfolios more rapidly.
- **Risk Mitigation:** JVs mitigate risk through diversification, shared governance, and individual entity-level vehicles. By pooling resources and expertise, OpCos and institutional investors can distribute risk across multiple projects and asset classes, reducing the impact of individual market fluctuations or operational challenges.
- **Flexibility in Structure:** JVs offer flexibility in structuring investment arrangements to accommodate the specific needs and preferences of stakeholders. Equity stakes, profit-sharing agreements, and incentive mechanisms can be tailored to align with the risk profiles and investment objectives of both parties.
- **Distinct Capital Structure:** The separation (or decomposition) of the investment risk profiles between venture capital and direct real estate capital allows more proactive and aligned portfolio management decisions for institutions, which aligns more closely with existing portfolio allocation profiles. This bifurcation likely increases the pool of available capital that can be deployed in these emerging asset classes.

By integrating OpCo financing within PropCo frameworks, these funds optimize capital deployment and maximize long-term value creation.



Examples of such collaborations include:

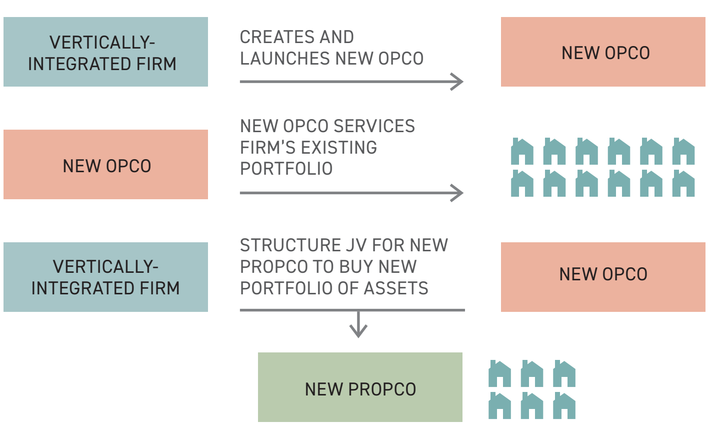
- Invesco & Mynd: Focus on single-family rentals.
- W5 & Quarters: Specialize in co-living apartment buildings.
- Saluda Grade & AvantStay: Engage in short-term vacation rental properties.

In-House Incubation with Vertically Integrated Firms

Vertically integrated real estate firms are increasingly adopting in-house incubation strategies to foster OpCo-PropCo ventures. By leveraging existing infrastructure and expertise, these firms empower entrepreneurs to develop tailored OpCo-PropCo models aligned with market demands.

Core aspects of in-house incubation include:

- **Seamless Integration of Functions:** In-house incubation models facilitate seamless integration between OpCo and PropCo functions, leveraging the operational synergies and economies of scale inherent in vertically integrated firms. By consolidating management and decision-making processes, these models streamline operations and optimize resource allocation.
- **Direct Access to Capital:** Entrepreneurs participating in in-house incubation programs benefit from direct access to capital and resources provided by vertically integrated firms. By leveraging existing funding channels and investment platforms, entrepreneurs can expedite the development and expansion of their OpCo-PropCo ventures.
- **Strategic Support and Guidance:** In-house incubation programs offer entrepreneurs access to strategic support and guidance from experienced real estate professionals. Mentors and advisors within vertically integrated firms provide valuable insights and industry expertise, helping entrepreneurs navigate complex challenges and capitalize on emerging opportunities.
- **Potential Limitations on Autonomy:** Despite the benefits of in-house incubation, entrepreneurs may encounter limitations on autonomy and decision-making authority. As subsidiaries or affiliates of vertically integrated firms, OpCo-PropCo ventures may be subject to oversight and control measures imposed by parent companies, impacting entrepreneurial freedom and flexibility.
- **Execution Expertise:** Integrating capital allocation with operational expertise within a single firm expands the range of activities that must be effectively coordinated to achieve successful investment outcomes. The recent trend in the hospitality industry, exemplified by firms like Hilton, which now derive 80% of their total fees from franchise operations, highlights the appeal of specialized divisions of labor.



Examples include:

- Vornado & Placemakr: Development of apartment-hotels.
- Capstone Equities & Portal Warehousing: Innovations in co-warehousing.

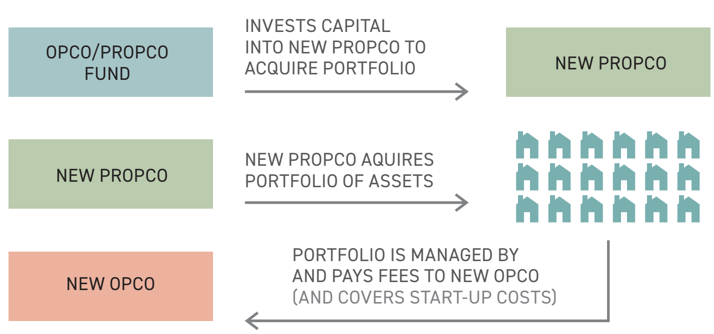
Purpose-Built OpCo-PropCo Funds

Purpose-built funds offer a holistic approach to OpCo-PropCo investments, providing sponsors with greater control and flexibility over investment strategies. By integrating OpCo financing within PropCo frameworks, these funds optimize capital deployment and maximize long-term value creation.

Key characteristics of purpose-built funds include:

- **Substantial Co-Investment from OpCo Sponsors:** Purpose-built funds typically require substantial co-investment from OpCo sponsors, aligning the interests of LPs and GPs and ensuring commitment to the success of OpCo-PropCo ventures. This "skin in the game" incentivizes stakeholders to pursue value-enhancing strategies and maximize returns.
- **Optimized Fee Structures and Investment Horizons:** Purpose-built funds feature optimized fee structures and investment horizons designed to maximize investor returns while minimizing overhead costs and administrative burdens. By aligning fee incentives with performance metrics and investment objectives, purpose-built funds enhance investor alignment and promote long-term value creation.
- **Exclusive Rights and Incentives for Investors:** Purpose-built funds offer exclusive rights and incentives for investors, including rights of first offer/refusal on future acquisitions, free warrants in OpCo equity, and preferential access to investment opportunities. These incentives enhance investor participation and loyalty, fostering a collaborative and mutually beneficial investment environment.
- **Long-Term Hold Strategy:** Purpose-built funds typically adopt a long-term hold strategy, focusing on portfolio aggregation and value creation over extended investment horizons. By prioritizing stability and sustainability, purpose-built funds mitigate short-term market volatility and capitalize on the potential competitive advantage of patient capital.

This model is exemplified by firms like Cloudland, which invests in emerging real estate models such as short-term rentals and workforce housing.



NAVIGATING THE DYNAMICS OF OPCO/PROPCO PARTNERSHIPS

In the world of OpCo/PropCo partnerships, structuring successful collaborations requires a nuanced understanding of control dynamics, termination clauses, exclusivity agreements, and operational alignment.

Establishing Control and Stability

The negotiation of control dynamics often revolves around two models: the discretionary model, which grants the OpCo autonomy within predefined investment criteria, and the right of first refusal (ROFR) model, which gives the PropCo veto power over each deal. Hybrid approaches that blend elements of both models can offer a middle ground, ensuring alignment while mitigating risks associated with extreme control dynamics.

Termination clauses play a pivotal role in shaping the stability and longevity of OpCo/PropCo partnerships. Setting clear conditions for termination, linking penalties to contract duration, and tailoring termination rights based on successor concerns are essential strategies for safeguarding long-term interests and fostering trust between parties.

Balancing Exclusivity and Market Dynamics

Exclusivity agreements define the boundaries of collaboration and competition in OpCo/PropCo partnerships. While exclusivity offers focus and security, it also presents challenges in navigating market dynamics and maximizing deal flow.

PropCo exclusivity serves as a cornerstone for aligning investment strategies and maximizing returns. By committing to exclusive partnerships, PropCos can streamline their investment focus and leverage their expertise for mutual benefit.

OpCo exclusivity presents a delicate balance between constraints and opportunities for growth and diversification. Finding the right balance between exclusivity and flexibility is crucial for optimizing market presence and deal flow while protecting brand integrity.

Clear boundaries through geographic or asset-specific exclusivity clauses are essential for mitigating risks and fostering collaboration. Defining the scope and duration of exclusivity agreements helps parties navigate market dynamics while safeguarding mutual interests and opportunities.

Fostering Operational Alignment and Collaboration

Operational alignment is critical for maximizing value creation and synergy in OpCo/PropCo partnerships. Proactive strategies for preempting conflicts and fostering collaboration are essential for operational success.

Comprehensive agreements detailing budgets, brand standards, and operational considerations help preempt conflicts and streamline operations. By setting clear expectations upfront, parties can mitigate conflicts and maximize value creation.

Aligning investment criteria with operational goals fosters compatibility and maximizes returns. By ensuring that investment criteria align with operational objectives, parties can optimize deal flow and capitalize on synergies across the asset lifecycle.

ABOUT THE AUTHORS

Paul Stanton is a real estate investment banker and entrepreneur. He is the Co-Founder and Partner of PTB, a boutique investment bank focused on joint ventures, capital raising and M&A for innovating real estate sponsors and companies. Donal Warde is a real estate investment and technology professional specializing in the multifamily industry. As Director of Special Projects at TF Cornerstone, he leads tech initiatives to enhance operational efficiency and returns. His background in real estate investment management and tech-driven solutions reflects a commitment to innovation in the multifamily sector.

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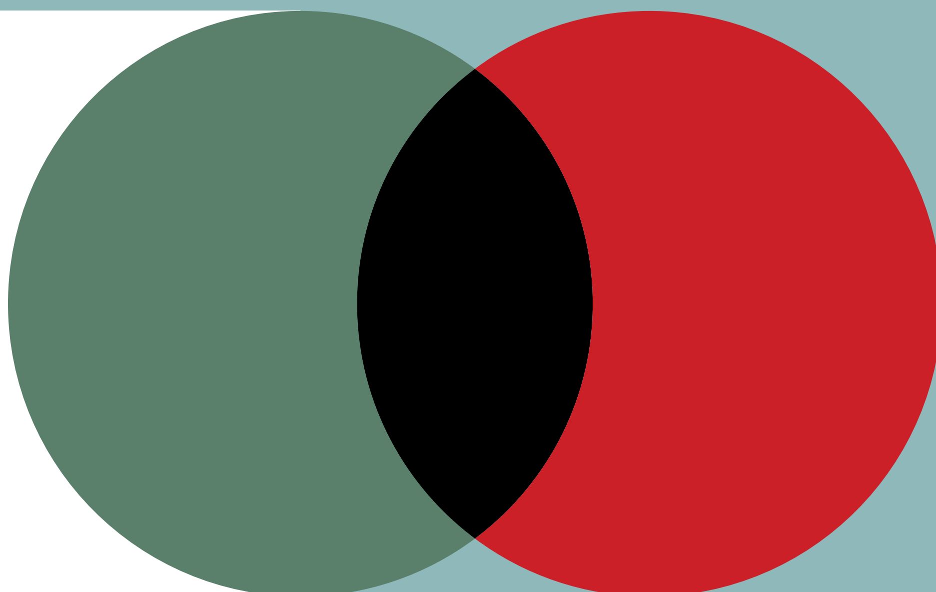
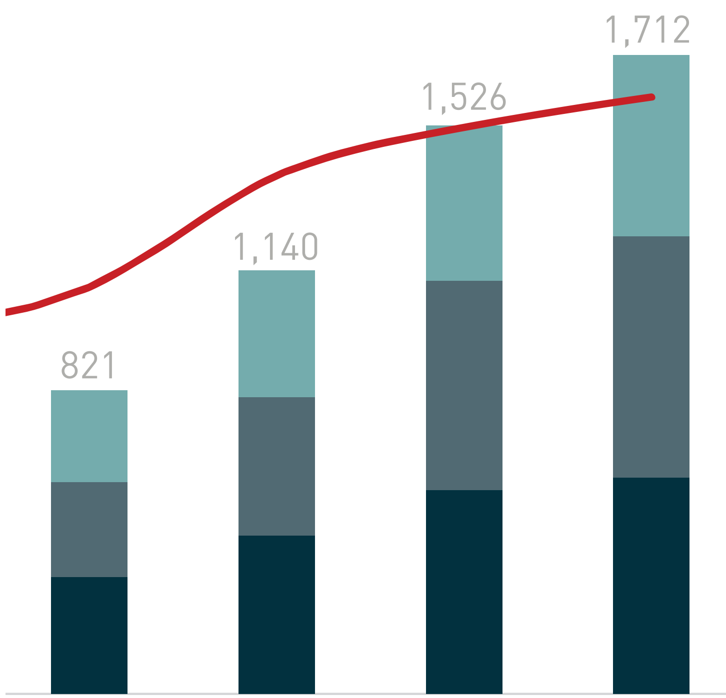
By setting clear expectations upfront, parties can mitigate conflicts and maximize value creation



Operational alignment is critical for maximizing value creation and synergy.

TRANSFORMING LUXURY



Alia Peragallo
Real Estate Development Associate
Beach Enclave

AFIRE Mentorship Fellow, 2024

Global trends in hospitality emphasize a complicated blend of personalization, wellness, authenticity, and regeneration. Beyond the buzzwords, the new central question is: how can investors unlock value in this evolving market?

The hospitality industry has long been sensitive to evolving consumer preferences, particularly as travelers increasingly seek unique and meaningful experiences. Today, global trends that emphasize personalization, wellness, authenticity, and regeneration—accelerated in the post-pandemic travel era—pose both challenges and opportunities for real estate investors and developers, begging the perennial question: How (and where) can we unlock value in this dynamic market?

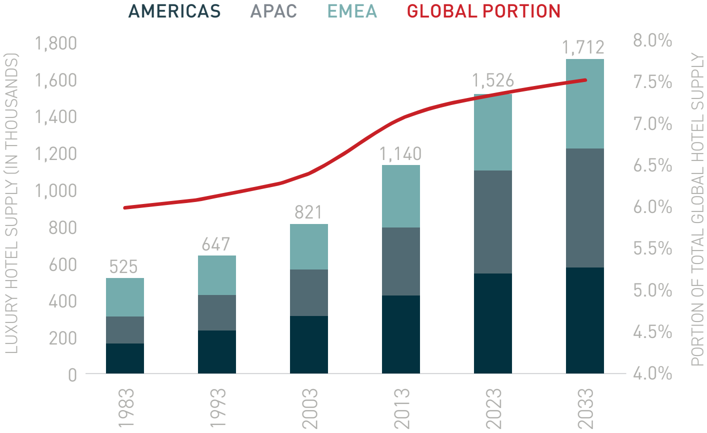
THE IMPORTANCE OF STRATEGIC DECISION-MAKING

Historically, luxury in hospitality has been synonymous with opulence. Esteemed five-star establishments set the standard for luxury, offering an exceptional level of quality, comfort, and exclusivity. Today's luxury seekers desire more than just extravagant settings and premium amenities; they seek unique, immersive experiences that allow them to deeply connect with their destinations. This new breed of luxury traveler's values encounters that are not only high-end but also unique and engaging, and they are prepared to invest in these extraordinary experiences.[1] Luxury hospitality now focuses on crafting an invaluable experience increasingly perceived as "luxury" by both baby boomers and millennials/Gen Y, the emerging luxury clientele. It emphasizes profound, personal storytelling alongside the offering of heritage-rich experiences that not only revives hotel's historical essence but also deeply engages guests with the local culture and traditions.

Exploring the shifting dynamics of the luxury hospitality market, we identify key moments where astute strategic interventions can profoundly amplify value creation. These pivotal decision points are crucial for optimizing returns for investors while safeguarding the cultural integrity of each destination. Maintaining local heritage is not merely a response to increasing consumer demand in the luxury sector; it is a critical strategy to prevent cultural dilution. This commitment to cultural preservation is essential for building lasting customer loyalty and upholding the exclusive cachet that defines unique luxury locales. Such strategic focus aligns with broader investment principles that prioritize sustainable, culturally integrated development.

The luxury hotel sector has experienced consistent growth, paralleled by an increase in supply. Over the past four decades, luxury hotels have become a more prominent part of the global hotel inventory. By 2033, projections suggest that there will be approximately 1.7 million luxury hotel rooms worldwide, representing 7.6% of the total hotel supply. Since 1983, the share of luxury accommodations has risen by 140BPS, with an expected additional increase of 20BPS over the next decade. This growth underscores the enduring demand for luxury experiences.[2]

EXHIBIT 1: GLOBAL LUXURY HOTEL SUPPLY, 1983–2033



Notes: Luxury supply users STR classifications and is measured in number of rooms. 2023 supply based on rooms currently in planning, final planning, and construction phases only. Numbers above the chart represent number of total global luxury rooms (in thousands).

Source: JLL Research, STR Census as of Feb 2023.

> From 2019 to 2023, the wellness real estate sector maintained a robust average annual growth rate of 18.1%, compared to 5.1% for overall construction.

In addition to the luxury hotel market's growth, wellness real estate has become the fastest-growing sector in the wellness economy. The COVID-19 pandemic accelerated consumer and industry understanding of the critical role that external environments play in physical and mental health.

From 2019 to 2023, the wellness real estate sector maintained a robust average annual growth rate of 18.1%, compared to 5.1% for overall construction. At the regional level, wellness real estate growth outpaced overall construction growth across every region by a factor of three to four times or more.[3]

EXHIBIT 2: TOP TWENTY WELLNESS REAL ESTATE MARKETS, 2023

	WELLNESS REAL ESTATE MARKET						AVERAGE ANNUAL GROWTH RATE
	(US$ BILLIONS)					RANK IN 2023	2019-2023
	2019	2020	2021*	2022*	2023		
US	$94.32	$110.99	$136.85	$164.22	$180.65	1	17.6%
CHINA	$36.96	$50.90	$62.13	$63.37	$72.74	2	18.4%
UK	$10.77	$14.76	$21.40	$23.37	$28.89	3	28.0%
AUSTRALIA	$15.58	$16.54	$21.12	$22.52	$25.65	4	13.3%
FRANCE	$9.55	$11.24	$15.47	$16.91	$20.70	5	21.3%
JAPAN	$7.60	$11.47	$13.21	$14.99	$17.05	6	22.4%
GERMANY	$8.67	$9.71	$11.10	$12.16	$13.69	7	12.1%
CANADA	$5.87	$7.83	$10.04	$11.77	$13.33	8	22.7%
SOUTH KOREA	$5.67	$6.17	$7.16	$8.37	$9.50	9	13.8%
INDIA	$5.01	$5.25	$7.00	$8.12	$9.08	10	16.0%
NETHERLANDS	$2.88	$4.00	$5.50	$6.29	$7.51	11	27.1%
SWITZERLAND	$2.27	$2.51	$2.88	$3.08	$3.56	12	11.9%
NORWAY	$2.04	$2.30	$2.80	$3.22	$3.35	13	13.1%
SWEDEN	$1.63	$1.80	$2.71	$2.84	$3.20	14	18.3%
ITALY	$1.29	$1.46	$2.07	$2.17	$2.58	15	19.0%
AUSTRIA	$1.50	$1.73	$2.06	$2.22	$2.43	16	12.9%
NEW ZEALAND	$1.47	$1.55	$1.91	$2.06	$2.29	17	11.8%
SINGAPORE	$1.14	$1.25	$1.71	$2.07	$2.29	18	18.9%
DENMARK	$1.32	$1.52	$1.81	$1.95	$2.18	19	13.4%
FINLAND	$1.02	$1.19	$1.40	$1.55	$1.74	20	14.3%

* 2021 and 2022 figures for this sector have been revised since GWI released the previous version of the Wellness Economy Monitor, due to data revisions and updates made by key underlying data sources such as the United Nations.

Source: Global Wellness Institute, based on construction output data from the united Nations.

KEY DRIVERS OF WELLNESS REAL ESTATE

Wellness real estate has evolved into a broad concept focusing on features such as advanced air filtration, enhanced soundproofing, outdoor exercise facilities, abundant communal areas, and easy access to nature. Globally, there is a growing desire for buildings, homes, and communities that foster healthier living and safeguard well-being, fueling significant growth in the wellness real estate industry.

In luxury properties, wellness features and healthy design have become almost standard.[4] Today, health is increasingly viewed as the ultimate form of wealth, making wellness the new must-have luxury. These wellness amenities have grown beyond gyms, spas, and pools; they now include elements that promote connection with nature, mindfulness, quality sleep, and other aspects of mental and social well-being. These features are expected to become more common in mid-market and affordable housing, including rental communities designed for both single-family and multi-family homes.[5]

There is a growing awareness that the health of people and the environment are deeply interconnected. Reflecting this understanding, the World Green Building Council introduced a Health and Wellbeing Framework in 2022, broadening the sustainability focus to encompass human health, equity, and resilience.[6] This framework emphasizes the rising demand for wellness and deepens our understanding of its evolving definition.

BEYOND ACCOMMODATIONS: THE ROLE OF LUXURY HOTEL BRANDS

Luxury hotel brands are uniquely positioned to transcend their traditional roles as mere places to sleep; they can offer immersive experiences that become integral parts of guests' lives, integrating sustainability into the wellness benefits provided to guests. This potential for transformation opens new avenues for investment such as:

- **Long-Term Appreciation:** Properties that contribute positively to their environment and community may see long-term appreciation due to their sustainable nature. As more tourists and businesses prioritize sustainability, demand for such properties is likely to increase.
- **Diversification:** By investing in regions that are not yet mainstream tourist destinations but have the potential for regenerative tourism, investors can diversify their portfolios. This strategy can involve higher risk but also potentially higher rewards, especially if the destination becomes popular.
- **Brand and Reputation Enhancement:** By being associated with regenerative practices, real estate brands can enhance their reputation and attract a broader base of conscientious consumers, not just in tourism but in the wider real estate market as well.

By understanding the impact of design and development decisions that enhance visitor engagement, hotel brands can make informed choices about where to allocate capital in a rapidly evolving hospitality industry.

THE EMERGENCE OF REGENERATIVE TOURISM

The COVID-19 quarantine and lockdown drove many industry platforms, including AFIRE, to increase our focus on the environmental impacts of the built environment and the importance of broader sustainability strategy. This introspective phase led to the emergence of "regenerative tourism."[7] Unlike traditional tourism, regenerative travel seeks to positively contribute to local ecosystems and communities, transforming the idea of travel from mere consumption into something more meaningful. It encourages travelers to see themselves as part of the community, not just temporary visitors. Regenerative tourism represents a shift in mindset, moving from a focus on "Me" to a collective "We," signaling the dawn of a new era.[8] This transformative approach includes community-based tourism initiatives that empower locals and share economic benefits, such as environmental restoration projects. It also embraces the integration of solar energy systems into tourism facilities to reduce carbon footprints and implements zero-waste policies to minimize environmental impact and promote sustainability.

CASE STUDY: SALTERRA – A LUXURY COLLECTION RESORT & SPA, TURKS & CAICOS

In an era where the global hospitality sector increasingly acknowledges the imperative of sustainability, Salterra, A Luxury Collection Resort & Spa, located in the heart of the Turks & Caicos Islands, provides a useful blueprint for the emphasis on "regenerative tourism" as a luxury philosophy, positioned at the intersection of traditional "luxury," environmental stewardship, and community engagement. Salterra's hundred-room resort is undergoing a substantial renovation, expanding from the original eighty-seven–room East Bay Resort, strategically located on the serene East Bay Beach. The property spans fourteen acres of beachfront, featuring over a thousand feet of uninterrupted ocean frontage, poised to redefine luxury and exclusivity in the region.

Sustainable Practices and Regeneration

Under the leadership of Michael Tibbetts, CEO of JEM Worldwide, Salterra has embraced a philosophy of sustaining and actively improving its immediate environmental context This approach is evident in several key initiatives that are at the core of the resort's operations, focused on (1) adaptive reuse, (2) guest involvement, and (3) clean energy use.

Adaptive Reuse

Salterra's commitment to sustainability is perhaps most evident in its innovative approach to development. Rather than building from the ground up, the resort has repurposed existing structures from the former East Bay Resort.

This strategy of adaptive reuse not only minimized the environmental impact of new construction but also exemplifies a growing trend in sustainable development—one that recognizes the potential value in what already exists. While significant upgrades were required for the mechanical, electrical, and plumbing systems, this approach underscores a broader shift in the industry: luxury does not have to mean new, but it must always mean thoughtful and intentional. Every structure from the former East Bay Resort, including the administration building that was unused during its operations, is being repurposed for the Salterra project.

Guest Involvement in Restoration

Salterra is at the forefront of the movement towards regenerative tourism, with a particular focus on the restoration of the fragile coral reefs surrounding the Turks & Caicos Islands. In partnership with the School for Field Studies Center for Marine Resource Studies, the Reef Institute, and the Turks and Caicos Reef Fund, the resort co-founded the South Caicos Coral Reef Consortium (SCCRC).

The SCCRC's mission is both ambitious and vital: to research, replant, and restore the coral reefs of South Caicos. What sets Salterra apart is its commitment to involving guests in these efforts. By inviting them to participate in coral reef restoration activities, the resort offers a unique opportunity for visitors to contribute directly to the preservation of the local environment, deepening their connection to the island.

Solar Investment

In collaboration with Fortis TCI, Salterra is installing a 422kW DC grid-tied solar energy system on the resort's rooftops. This initiative marks the first solar project of its kind in South Caicos and the largest rooftop system under Fortis TCI's Utility-owned Renewable Energy (UORE) program. By prioritizing renewable energy, Salterra not only reduces its carbon footprint but also sets a powerful example for other resorts in the region.

As the global hospitality industry continues to evolve in response to the challenges of climate change and the growing demand for sustainable travel options, Salterra stands out as a pioneer. By redefining luxury to include a profound commitment to environmental stewardship and community engagement, Salterra is not just a resort, but a model for the future of tourism. It offers differentiation in a competitive market, contextualized by consumer sentiment while also challenging the industry to rethink "luxury."

WHAT'S NEXT FOR LUXURY?

The strategic redefinition of programs within luxury properties marks a pivotal moment for the sector. Investors who observe and adapt the principles demonstrated by the Salterra example may well capitalize on the evolving landscape of customer attraction and satisfaction, ensuring both growth and resilience in their portfolios.

ABOUT THE AUTHOR

Alia Peragallo is a Real Estate Development Associate for Beach Enclave and a candidate for Master of Science in Real Estate Development at MIT. She is also a 2024 AFIRE Mentorship Fellow.

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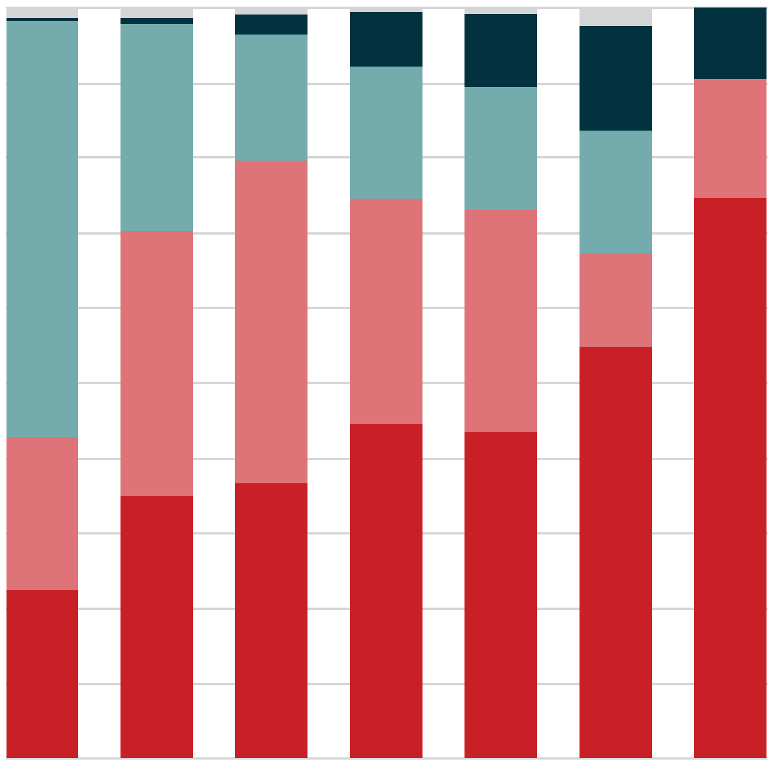
The adaptive reuse approach underscores a broader shift in the industry: Luxury does not have to mean new, but it must always mean thoughtful and intentional.

SOLAR VALUATION



David Wei
Vice President of Finance and Operations
SolarKal

Michael Conway
Project Delivery Manager
SolarKal

Solar installations on commercial properties can provide additional revenue streams through net metering or selling excess electricity back to the grid, positively impacting the financial performance of commercial properties—and move the needle on valuation.

High interest rates and the slow return of workers to office buildings have pushed several areas of the US commercial real estate sector into a period that threatens distress. Since 2020, foreclosures have been on the rise, reaching $20.5 billion in value in Q2 2024.[1]

Under these circumstances, solar installation and the income it generates can be critical pieces of material information needed to obtain an appropriate valuation. This valuation is essential whether the goal is to avoid foreclosure, prepare the property for sale, or achieve any other financial objectives.

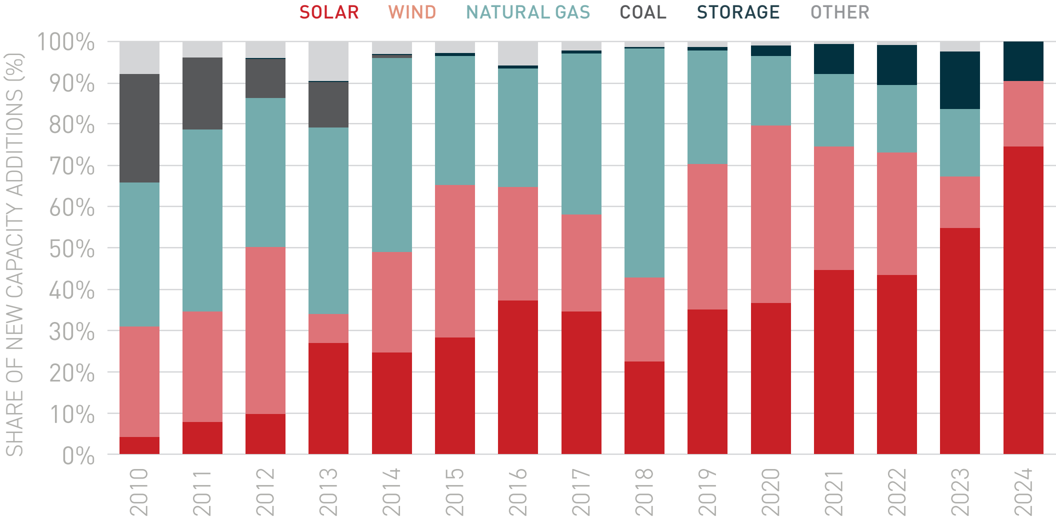
The roof of a building isn't just a structural necessity, but can also serve as a valuable asset that can enhance rentable square footage and generate additional revenue streams through rooftop solar. While the technology and market has evolved and lowered the bar for entry into solar, there are still some critical differences and factors to consider when assessing solar implementation.

THE UPWARD TRAJECTORY FOR COMMERCIAL SOLAR

Driven primarily by economics, solar continues to be the incremental market share winner in new electricity generation installations, now accounting for more than 50% of all new capacity, according to the Solar Energy Industries Association (SEIA).[2] After seeing a record year in 2023 with 33GW of new solar installations in the US, SEIA is forecasting the US solar capacity to grow approximately 14% per year over the next five years.[3]

This impressive growth is largely driven by the decline in solar prices, down over 90% in the past decade alone. Solar panel prices are at all-time lows while sustainability awareness is at all-time highs.[4] These factors have strengthened the value proposition for solar, with several commercial building owners like Apple, Prologis, First Industrial, Bain Capital, Digital Realty, and Federal demonstrating how to implement alternative energy generation at an institutional scale.[4]

EXHIBIT 1: NEW US ELECTRICITY GENERATION CAPACITY ADDITIONS, 2010–Q3 2023



Source: SEIA/Wood Mackenzie Solar Market Insight Report Q4 2023 U.S. Energy Information Administration (for all other technologies)

REITS, WAREHOUSES, INDUSTRIALS, AND DATA CENTERS LEAD

The passage of the Inflation Reduction Act in 2021 substantially improved economics for asset owners, and has driven solar adoption across the real estate spectrum by increasing the base Investment Tax Credit to 30% (with adders up to 60%) and creating the ability to transfer tax credits for cash considerations.

Assets with significant roof space, such industrial and logistics warehouses and buildings; or assets with outsized power demand, such as data centers, have the most to benefit from solar implementation. Solar is already growing rapidly to meet the needs of Big Tech's power-hungry data centers.[5] REITs as an asset class are also early winners as the transferability of tax credits allows them for the first time to reap financial benefit from tax credits as this historically tax-exempt asset class can exchange credits for cash.[6]

REITS AFTER THE IRA

The ability for REITs to utilize the solar tax credit is a key benefit of the IRA. For example, Section 6418 of the IRA allows for the transferability of tax credits (e.g., ITC, PTC, or other credits) from the owner to another taxpayer in exchange for cash. Key to this is that the cash payment will not be included in the gross income of the original recipient.

In essence, the IRA allows—for the first time—the easy transfer of credits from the solar owner to another entity. This ultimately allows REITs to monetize the ITC by transferring the credit to any taxable entity, even unrelated ones. Moreover, any proceeds from the transfer do not count against the 75% gross income requirement for REIT.

Solar can also increase property value by reducing operating costs, enhancing sustainability, and attracting environmentally conscious tenants or buyers.

DIRECT OWNERSHIP CAPTURES MAXIMUM BENEFITS

Solar installations on commercial properties—such as office buildings, warehouses, factories, shopping centers, parking lots, and large multifamily buildings—can often benefit from net metering or by selling excess electricity back to the grid, boosting site economics by reducing electricity costs.

Through a typical ownership structure, the owner is the off-taker and replaces all or a portion of the site's power demand with solar. The owner pays for the system and retains 100% of the economics and benefits, which improve over time as electricity prices increase.

Furthermore, commercial properties may also benefit from marketing advantages and increased market competitiveness by promoting their renewable energy initiatives, which can attract environmentally conscious tenants or customers, potentially reducing turnover and elevating occupancy rates. Tenants are often requesting solar as a requisite for signing a lease.[7] With the introduction of ESG, sustainability, and net-zero mandates, it's now common to see the presence of solar to be "table stakes" for acquisitions.

SOLAR LEASES GENERATE HIGHER NOI

In addition to reducing operating costs, solar can also increase property value by increasing net operating income through solar leases.

Solar leases, where the real estate owner receives a lease payment from a third-party system owner who sells power to the occupants or grid, is another common way real estate owners have been transitioning to solar. These leases can be counted as rental income, like any other property lease, and involves zero direct capital expenditures for the building owner while gaining a long-term income stream.

These leases are typically fixed rates for more than twenty years and can often be backed by a state-supported solar program, significantly reducing default risk and offering property owners long-term certainty.

For example, a 100,000-square-foot building in New Jersey is estimated to net its owner between $90,000 to $120,000 per year in annual savings through a PPA.

PPAS LOWER OPERATING EXPENSES

Yet another common way to add solar is through a Power Purchase Agreement (PPA), a structure where again, a third party owns and operates the solar system but instead of paying rent, they provide the site with solar power at a discount to the retail rate.

Solar systems are typically designed to either fit the physical capacity of the roof or the on-site load, whichever is the limiting factor. A properly sized system can eliminate a significant portion of a building's electrical bill, drastically reducing the site's operating costs and accordingly increasing the property value for owners.

For example, a 100,000-square-foot building in New Jersey is estimated to net its owner between $90,000 to $120,000 per year in annual savings through a PPA. At a 5% cap rate, the asset owner would see a value increase of $2 million with no capital investment. Property owners who combine the site lease with a PPA can "have their cake and eat it too" by locking in a lower price for electricity while receiving long-term lease payments.

An office complex in the Bay Area achieved an optimum, zero capital expenditure solar structure with a hybrid PPA structure, offsetting 90% of the property's electricity use, reducing tenant electric rates by 10%, adding $1.8 million in additional revenue for a $1 million increase in valuation.

SOLAR CAN BE A VALUATION DIFFERENCE-MAKER

A building's value per square foot or stabilization metrics are better when solar is deployed. Exactly how much better is very project dependent, but similar to how a new rental lease is valued, the concept of cap rates comes in handy for calculating the range of outcomes.

According to a 2024 cap rate report from CBRE, the average cap rate for an industrial property in the New York metro area is in the 5% range while the average cap rate for an office in Los Angeles is in the 7% range.[8] In the case of a metro New York industrial property, a building with a 125,000-square-foot roof may net $100,000 in annual lease payments, which would see the asset's value increase by $2 million at today's rates.

A building's value per square foot or stabilization metrics are better when solar is deployed.

EXHIBIT 2: HOW MUCH WILL SOLAR INCREASE MY PROPERTY VALUE IN NEW YORK?

ANNUAL SOLAR BENEFIT	CAP RATE				
	3%	5%	7%	9%	11%
$10,000	$333,333	$200,000	$142,857	$111,111	$90,909
$25,000	$833,333	$500,000	$357,143	$277,778	$227,273
$50,000	$1,666,667	$1,000,000	$714,286	$555,556	$454,545
$100,000	$3,333,333	$2,000,000	$1,428,571	$1,111,111	$909,091
$200,000	$6,666,667	$4,000,000	$2,857,143	$2,222,222	$1,818,182

Likewise, a 60,000-square-foot roof in Los Angeles may net $50,000 per year in savings via a PPA, which would increase the property's value by over $700,000.

EXHIBIT 3: HOW MUCH WILL SOLAR INCREASE MY PROPERTY VALUE IN LA?

ANNUAL SOLAR BENEFIT	CAP RATE				
	3%	5%	7%	9%	11%
$10,000	$333,333	$200,000	$142,857	$111,111	$90,909
$25,000	$833,333	$500,000	$357,143	$277,778	$227,273
$50,000	$1,666,667	$1,000,000	$714,286	$555,556	$454,545
$100,000	$3,333,333	$2,000,000	$1,428,571	$1,111,111	$909,091
$200,000	$6,666,667	$4,000,000	$2,857,143	$2,222,222	$1,818,182

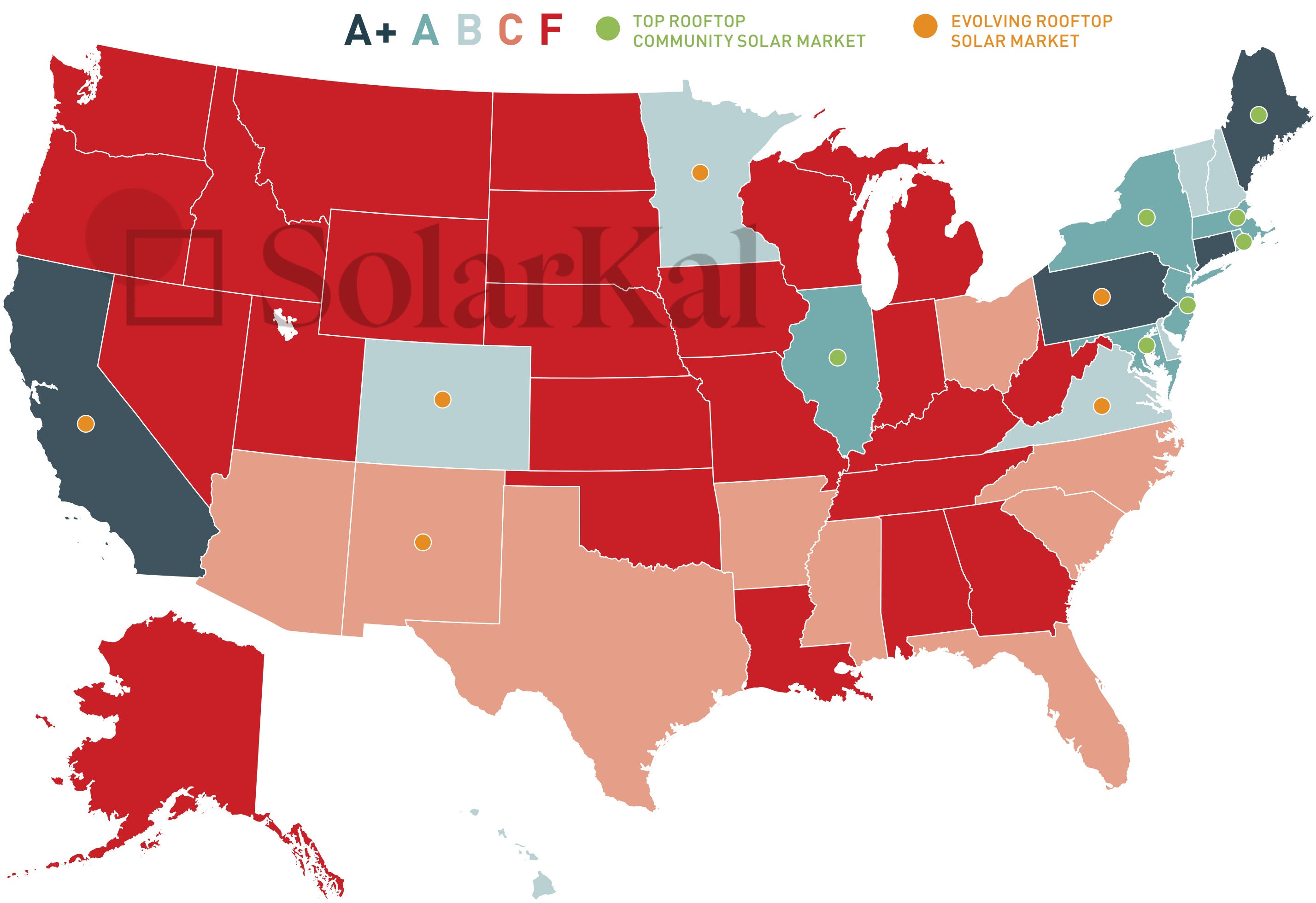
Over the last two years, many real estate sectors have seen a more than 2% increase in cap rate, resulting in a significant decrease in real estate value. Adding another income stream through solar can make a big difference. If rent in industrial buildings is around $10 per square foot, then the $0.50 to $1 that solar adds can really move the needle. Particularly in an environment of interest rate increases, additional solar income can make the difference between being able to refinance the building or losing it in foreclosure.

HOW TO GET STARTED ON YOUR SOLAR JOURNEY

The complexities of the US electric system, with each of the fifty states having their own public utility commissions, can create challenges for foreign investors since certain states are more solar-friendly than others. The first step to making solar a valuation game-changer is to determine which properties in a portfolio have the best solar income potential.

Exhibit 4 illustrates a starting point for identifying the premier and evolving rooftop community solar markets nationwide. The higher the rating, the better the opportunity to turn solar potential into solar revenue. The ratings are based on four key criteria: incentives, electricity rates, net metering rules, and solar irradiation. Let's dive deeper into each one.

EXHIBIT 4: FIFTY STATES OF SOLAR



Incentives include state rebates, solar renewable energy certificates, community solar programs, and more. In New York, for example, it's important to monitor the ever-evolving upfront rebates, while in Illinois, a thriving community solar program is opening up solar for large industrial buildings across the state.

Energy rates are another vital piece of the solar economics puzzle. If a state has high energy rates, commercial solar projects become more attractive since lowering a building's electric bill is often the main way to repay a solar investment. States such as Pennsylvania, where solar has historically had longer payback periods, have recently seen commercial energy rate hikes, resulting in shorter payback periods and a higher solar rating.

Net metering rules are also important and vary by state and utility. Net metering rules determine how much a utility will pay for solar power sent to the grid. States like California have moved from traditional net metering to net billing, which greatly impacts the economics of solar installations.

Lastly, each state is graded on **solar irradiation**, or the amount of sun it receives, as determined by longitude. The more sun, the better. But just because a site gets a lot of sun doesn't guarantee it's good for commercial solar systems. Florida, for instance, may be the Sunshine State with great solar irradiance, but it lacks the incentives to get commercial projects to pencil.

All of this said, just because a building is in a "tough" solar state doesn't mean it's not doable. Looking at the state level is only a starting point for analysis. In some cases, utility-specific programs can vary widely within states and certain parts of a market may be eligible for extra federal incentives. Close evaluation of each property, its site-specific economics, and its owner's revenue and sustainability requirements determine whether the property is a solid solar opportunity or not.

BRIGHT FUTURE

In summary, solar panels not only reduce operational costs but also increase the marketability, resilience, and long-term value of commercial properties. These benefits contribute to a higher property valuation, making solar a smart investment for property owners. Breaking it down with a portfolio-wide feasibility and economics analysis is a great first step. Working with a reputable, vendor-agnostic US solar advisory firm will help pinpoint your best opportunities to turn your solar potential into solar revenue.

Close evaluation of each property, its site-specific economics, and its owner's revenue and sustainability requirements determine whether the property is a solid solar opportunity or not.

ABOUT THE AUTHORS

David Wei is Vice President of Finance and Operations, and Michael Conway is Project Delivery Manager at SolarKal.

NOTES

[1] Peter Grant (July 29, 2024). WSJ. "Surge in Commercial-Property Foreclosures Suggests Bottom Is Near." https://www.wsj.com/real-estate/commercial/surge-in-commercial-property-foreclosures-suggests-bottom-is-near-247bb689

[2] Press Release (March 6, 2024)."Solar Installations Skyrocket in 2023 in Record-Setting First Full Year of Inflation Reduction Act." https://www.seia.org/news/solar-installations-skyrocket-2023-record-setting-first-full-year-inflation-reduction-act

[3] SEIA Q4 Report (December 7, 2023). "Solar Market Insight Report Q4 2023." https://www.seia.org/research-resources/solar-market-insight-report-q4-2023

[4] 2022 Solar Means Business Report. https://www.solarmeansbusiness.com/

[5] Spencer Kimball and Gabriel Cortes (June 19, 2024)."Solar Is Growing Faster than Any Electricity Source as Big Tech Seeks Clean Energy for Data Center https://www.cnbc.com/2024/06/19/solar-is-growing-faster-than-any-energy-source-as-clean-power-for-data-centers.html

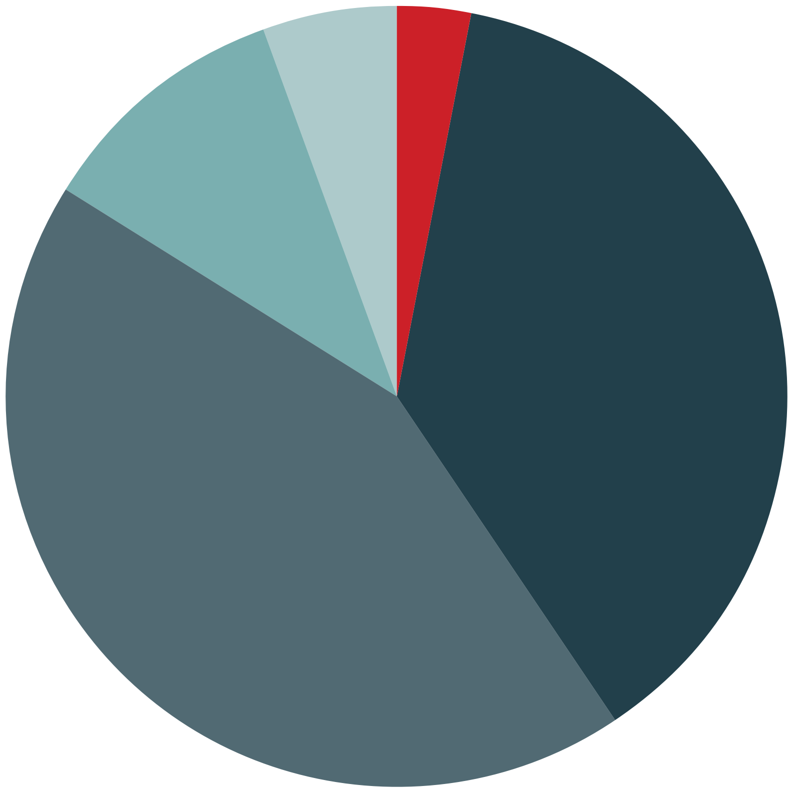
[6] Matthew A. McDonald and Jeffrey M. Bruns (August 17, 2022). "The US Inflation Reduction Act, Solar and REITs." Insights. Mayer Brown. https://www.mayerbrown.com/en/insights/publications/2022/08/the-us-inflation-reduction-act-solar-and-reits

[7] "ESG in Commercial Real Estate," Colliers 2023. https://www.colliers.com/en-be/news/202306-esg-in-commercial-real-estate-15-things-you-need-to-know

[8] Survey Report (July 26, 2023), "US Cap Rate Survey 2023." Insights. https://www.cbre.com/insights/reports/us-cap-rate-survey-h1-2023

Solar is a game-changer, improving asset economics while achieving important sustainability goals.

GROUND LEVEL



Shaun Libou
Director
Raymond James

Despite the latest conventional wisdom that attractive "real estate" is comprised of apartments in the Sunbelt or last-mile industrial, ground leases have been hiding in plain sight for centuries. Do they have a future for institutional investors?

When it comes to real estate investing, what do the Catholic Church, the English Monarchy, and Harvard University have in common?

Over long periods of time, each of these institutions has accumulated considerable wealth, often in large part due to the ownership of land holdings which are frequently structured as ground leases.

Ground leases are an overlooked asset class among institutional investors due to their low absolute returns, limited market depth, and lack of institutional expertise. However, despite the latest conventional wisdom that attractive "real estate" is comprised of apartments in the Sunbelt or last-mile industrial, ground leases have been hiding in plain sight for centuries and are among the most attractive risk-adjusted real estate investments a long-term investor could make.

WHAT IS A GROUND LEASE?

Ground leases represent ownership of land and its "improvements," such as buildings or infrastructure, and are leased by the land owner (otherwise known as the "fee owner" or "lessor") to a leasehold owner (lessee), creating two distinct legal estates. The lessee enjoys the right to use the land as they see fit throughout the ground lease term, subject to certain use restrictions in the ground lease. In exchange, the lessee pays to the lessor periodic ground rent payments and assumes responsibility for all operating costs of the land and its improvements.

Ground leases are typically structured as triple-net leases with a 99-year lease term and inflation-protected contractual rent escalations. When the ground lease reaches expiration, ownership of any improvements on the land typically revert to the landowner unless otherwise specified.

WHY SHOULD LONG-TERM INVESTORS CARE?

Ground leases are somewhat like a fixed income instrument due to their regular, secure, long-term rental payments, albeit with inflation protection and contractual rent increases, gradual appreciation accrual as the lease approaches maturity, and long duration (ninety-nine years vs. typical loan maxing out at ten years). Furthermore, instead of a bullet payment upon maturity, ground leases instead inherit ownership of all improvements on the land.

In a typical real estate capital stack, ground lease rent payments have senior priority over the leasehold lender's debt service payments. With this in mind, because the most senior slice of debt would typically be rated with AAA credit risk, ground leases are normally deemed to have AAA credit risk as well (or better). At the same time, Fitch assigns a AA+ credit rating to US sovereign debt, rendering ground leases effectively safer than "risk-free" bonds.

On newly originated ground leases, an investor could achieve an unlevered internal rate of return of approximately 7.5% over ninety-nine years.[1] For perpetual investors with stated long-term investment goals of achieving nominal returns of approximately 7%, investment exclusively in ground leases in the latest vintage would effectively guarantee meeting or exceeding that requirement for the next ninety-nine years at a risk-level safer than US treasuries and without the need to re-invest the capital for at least a century (if ever).[2] With modest leverage, the return becomes that much more attractive without committing to materially incremental risk.

As we face a backdrop of declining rates based on the latest Fed dot plot (which forecasts a 225BP drop through 2026), ground leases originated in this environment stand to appreciate significantly.

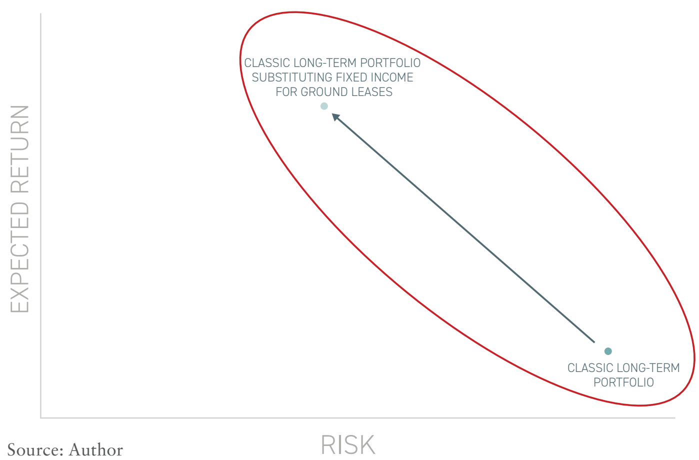
HOW WOULD GROUND LEASES FIT INTO A BROADER PORTFOLIO?

At prevailing ground lease economics, a long-term investor should manage a portfolio exclusively of ground leases. However, over an extended timeline, ground lease origination yields may range below or above long-term investors' target returns and should therefore be considered in the context of a broader investment portfolio.

We estimate that institutional ownership of ground leases is currently less than 1% of the total addressable market, indicating most institutional investors surprisingly have minimal to no meaningful exposure to the asset class.[3] As a result, long-term investors have not optimized the risk-adjusted returns of their portfolio because ground leases have higher returns than historical fixed income strategies, albeit with negligible risk. Consequently, the substitution of ground leases with an average fixed-income strategy should both increase nominal returns and reduce risk across a traditional long-term portfolio.

Exhibit 1 offers an illustrative example. Utilizing the twenty-year average historical returns and risk measurements of one of the largest US pension funds (the "classic long-term portfolio"), we substituted the fund's 28.7% fixed income weighting with ground leases. The pension's fixed income twenty-year return of 4.3% is not only 320BPS below prevailing ground lease ninety-nine-year returns of ~7.5%, but also has greater historical volatility.[4] Therefore, the substitution of ground leases for fixed income strategies should shift a portfolio's risk and return metrics favorably.[5]

EXHIBIT 1: HYPOTHETICAL PORTFOLIO RISK ADJUSTED RETURN ADJUSTED FOR GROUND LEASES



Source: Author

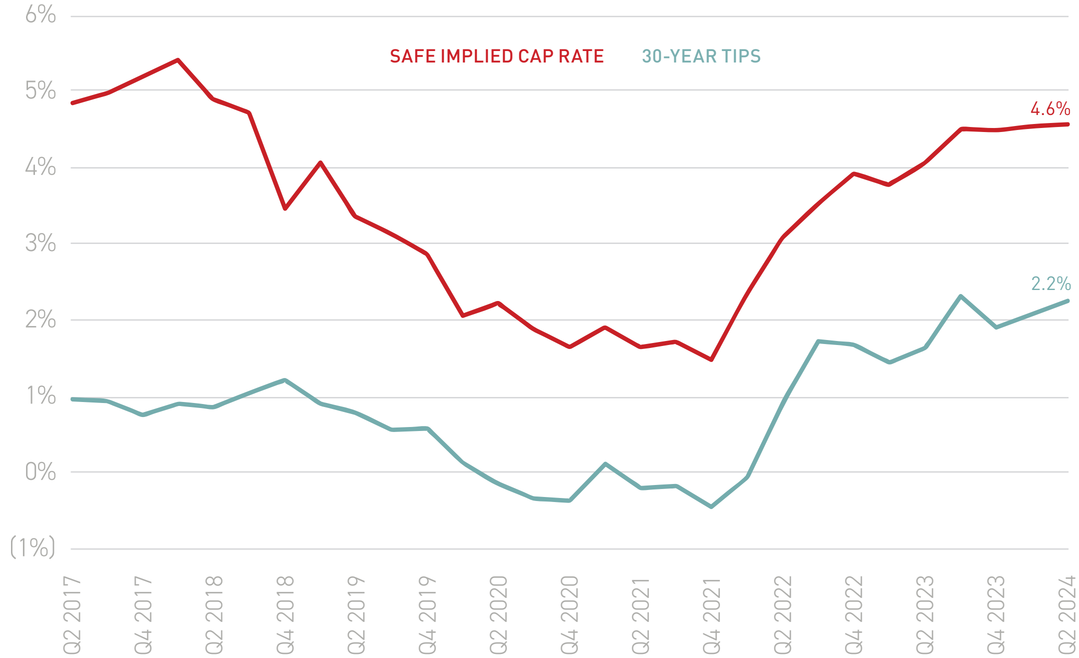
GROUND LEASES ALSO HAVE COMPELLING RELATIVE VALUE

The most analogous investment products to ground leases are Treasury Inflation-Protected Securities (TIPS), as they similarly hedge for inflation and have a "risk-free" credit profile.

From 2017 to 2024, ground lease implied cap rates have traded at an average 261BPS spread to thirty-year US TIPS *(Exhibit 2)* despite ground leases' (1) comparable credit risk and inflation-linked increases, (2) minimum contractual rent increases regardless of inflation, and (3) gradual appreciation capture over the course of the lease term.[6,7]

In this context, ground leases are a highly attractive investment structure on a relative basis, notwithstanding their compelling risk-adjusted nominal returns. While TIPS' enhanced liquidity could justify a tighter return than a typical ground lease, we do not believe the liquidity premium is large enough to justify the wide yield spread to ground leases.[8]

EXHIBIT 2: SAFE IMPLIED CAP RATE V. 30-YEAR TIPS YIELD



Source: Green Street Advisors and Federal Reserve Economic Data (FRED)

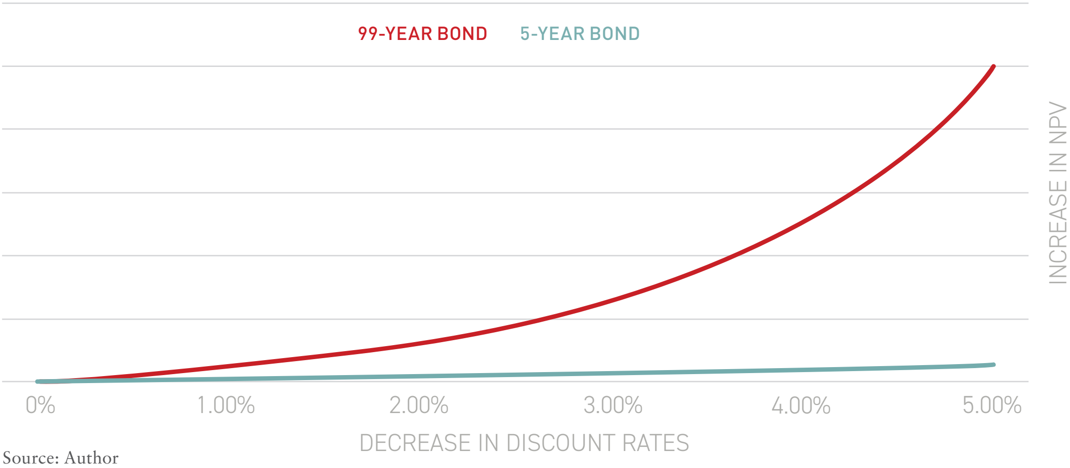
US TREASURY YIELDS REMAIN ELEVATED

Within the past twelve months, the thirty-year US treasury yield reached levels not seen since 2009 and 2010. The US treasury is the base rate on which ground leases price, and their elevated yields allow ground lease originators to lock in high cap rates (the ground lease proxy for "interest rates") for ninety-nine years. With such long duration, ground leases have extremely high "convexity" – in other words, their valuations are highly sensitive to fluctuations in interest rates.[9]

As we face a backdrop of declining rates based on the latest Fed dot plot (which forecasts a 225BP drop through 2026), ground leases originated in this environment stand to appreciate significantly.[10] On the other hand, if rates rise or remain steady, a status quo or reduction in valuation would be mitigated by increased cash flows from annual rent escalations and CPI adjustments. Of course, while we believe 2024 will be a strong vintage for new ground lease origination, a prudent investor should carefully dollar cost average their bets in any sector to mitigate vintage risk.

Exhibit 3 demonstrates the sharp contrast in convexity between a ninety-nine-year ground lease vs. a five-year bond. In this example, a 100BP decline in the discount rate would mean 24% appreciation of the ground lease, in contrast to approximately 4% appreciation of the five-year bond.[11] *Exhibit 3* illustrates this relationship across a range of discount rates.

EXHIBIT 3: 5 YEAR VS. 99 YEAR BOND CONVEXITY



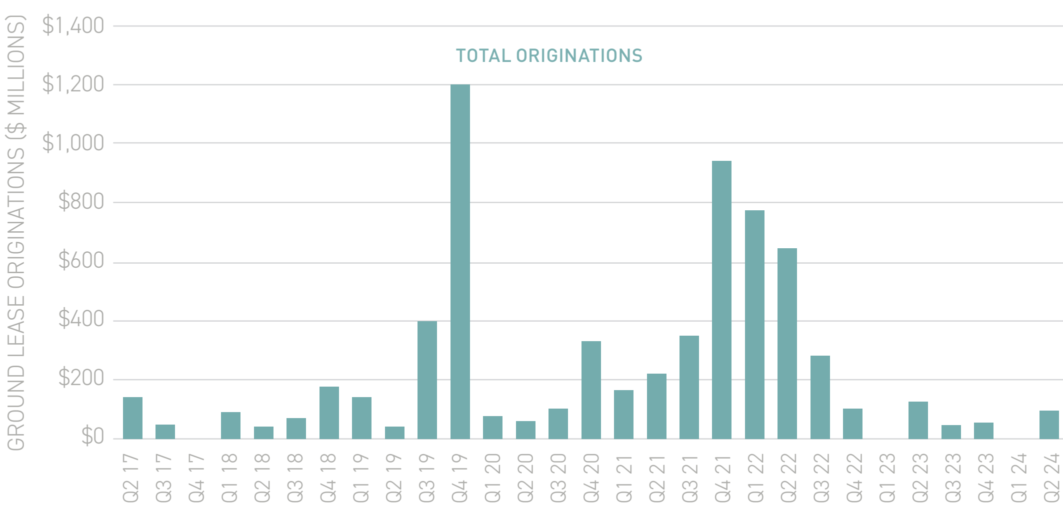
Source: Author

WHAT IS THE MARKET OPPORTUNITY?

Although the addressable ground lease market is robust, existing ground lease stock in the US is scarce and the marketplace is opaque. Outside of the publicly traded stock of Safehold (NYSE: SAFE), the secondary market for ground leases is effectively non-existent because those who originate ground leases often do so to hold them through maturity or perpetually (via regular lease extensions).

Because of these blurry market dynamics, the primary means to build a scaled ground lease portfolio is by direct origination. This realization ultimately crafted the business models of the two largest and well-known pure-play ground lease originators in the space: (1) Safehold ($6.2 billion ground lease portfolio) and (2) Ground Lease REIT (GLR) (~$1 billion ground lease portfolio).[12,13,14] Despite the involvement of institutional players, the sector remains nascent, with estimated 2023 origination volume representing <1% of the 2023 transaction volume of a mainstream sector like multifamily.[15] *Exhibit 4* shows the historical ground lease origination volume of Safehold and GLR combined since 2017.

EXHIBIT 4: GLR & SAFE COMBINED ORIGINATION VOLUME



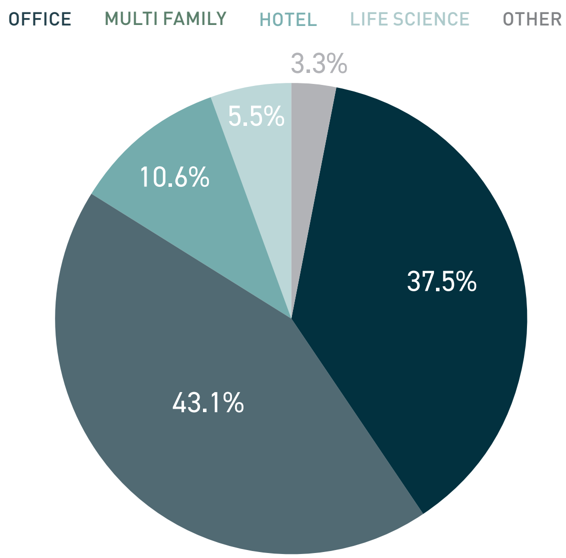
Source: Safehold public filings and Ground Lease REIT

Whereas traditional ground leases were often originated as bespoke, brokered solutions between landowners and, usually, developers in a dense urban area, the modern ground lease is more akin to an alternative financing tool. In fact, in a modern ground lease transaction, the developer often *voluntarily* creates a ground lease via a sale-leaseback of the land to a ground lease originator in exchange for financing proceeds.

Like debt, sector selection and credit strength play a meaningful role in deal origination and portfolio construction. Per data from Safehold and GLR over the past twelve months, of the eleven completed transactions, 100% were in multifamily with average loan-to-value of 34.9% and rent coverage of ~3.0x.[16]

Multifamily remains the collateral of choice for ground leases, yet Safehold and GLR's combined portfolios are diversified across sectors, as presented in *Exhibit 5*.

EXHIBIT 5: APPROXIMATION OF INSTITUTIONAL GROUND LEASE STOCK BY SECTOR



Source: Green Street Advisors and Ground Lease REIT

Among these recently originated ground leases, a meaningful portion served as financing for development projects. As compensation for the incremental risk, originators typically seek a 50BPS+ spread to those ground leases with stabilized collateral. Whether the additional yield is worth the risk of new development is a debated topic in the ground lease industry. We firmly believe the additional cap rate spread justifies the risk of development. Aside from the facts that the ground lessor will have brand-new collateral, robust lender-like protections and a highly defensible "last dollar" basis, a 50BPS spread on an otherwise 5% cap rate would increase the origination yield by 10% and ninety-nine-year ground lease multiple on invested capital ("MOIC") by ~1.5x for "risk" that likely only exists for around three out of ninety-nine years of term.[17]

SEE YOU IN A CENTURY

The United Nations projects that by 2054 the number of centenarians will reach a record four million globally, likely to grow further by 2124 (when today's ground leases will expire).

For those long-term investors out there, consider a ground lease investment. Perhaps we'll catch up in a hundred years to see how it turned out, and we'll be waiting with those same centuries' old institutions who prudently invested in ground leases.

ABOUT THE AUTHOR

Shaun Libou is a Director of Raymond James, a client-focused global financial services company providing wealth management, capital markets, asset management and other tailored services.

NOTES

1 Safehold's (NYSE: SAFE) published "Economic Yield" on six new ground lease investments originated in 2Q 2024. All six transactions have multifamily leaseholds.

2 A simple average of stated long-term investment targets of California Public Employees' Retirement System, California State Teachers Retirement System, New York Employees' Retirement System, New York State Teachers' Retirement System, and Teacher Retirement System of Texas.

3 Allaway, Spenser. Safehold (SAFE): Breaking Ground. Green Street Advisors, 2022.

4 The institutionalized ground lease market did not exist in 2004. Ground lease originations in 2Q 2024 are an appropriate and conservative proxy for those that could have been issued in 2004 because the 30-year treasury (the benchmark rate for pricing ground leases yields) in 3Q 2004 was ~57 bps higher than in 2Q 2024 on average.

5 Trust Level Review. CalPERS, 2024. This graphic utilizes CalPERS' publicly available historical return and risk metrics to evaluate what CalPERS' historical risk and return of their portfolio over the past 20 years could have been if the fund invested in ground leases in lieu of fixed income. The analysis represents an approximation of what such change could look like but is imperfect due to limited (1) detailed information available about the underlying positions in the CalPERS portfolio and (2) return / risk disclosures over the same measurement window.

6 Data per Green Street Advisors and based on the public trading of the only dedicated ground lease REIT, Safehold (NYSE: SAFE).

7 Most ground leases have a limit on the amount of rent increases as a result of inflation, though these limits are usually in-line with or above U.S. long-term average inflation.

8 Over the past 15 years from 2009 to 2024, the delta between Green Street's nominal and implied real estate cap rates is 32 bps, which offers a helpful proxy for a real estate liquidity premium. Utilizing this premium, the liquidity adjusted spread between 30-year TIPS and ground leases would decline from 261 bps to 229 bps.

9 Convexity is a measure of the non-linear relationship of bond prices to changes in interest rates.

10 Federal Reserve Board summary of economic projections

11 This analysis compares the net present value of the future cash flows of a 5-year bond with 5% coupon and 99-year ground lease with a 5% coupon (and no annual rent escalation to keep the comparison apples-to-apples), each discounted at discount rates of 5% and 4%.

12 Aggregate cost basis per Safehold's 2Q24 investor presentation.

13 Ground Lease REIT is a privately held real estate investment trust, externally managed by private equity firm Montgomery Street Partners.

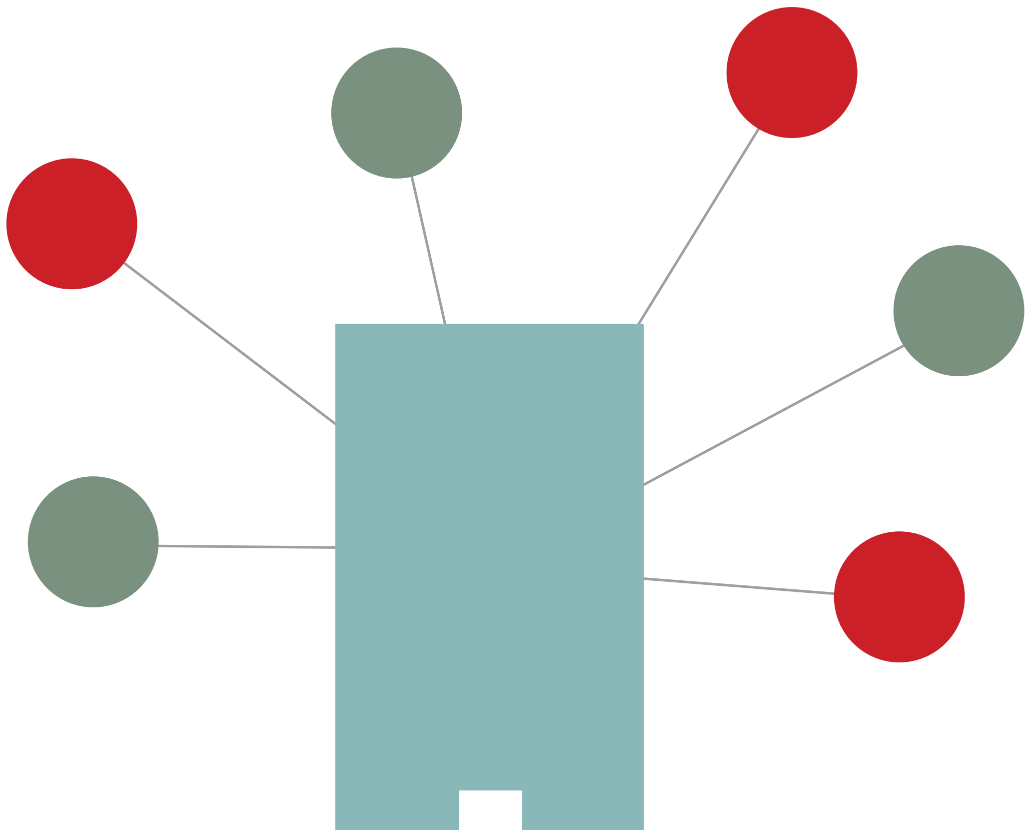
14 Ground lease portfolio values reflect funded and/or committed proceeds at cost as of quarter-end of 2Q 2024.

15 ~$61.5 billion of aggregate multifamily transaction volume in 2023 per Green Street versus ~$233 million of institutional ground lease originations (see Exhibit 4)

16 "Rent coverage" is the ratio of a property's net operating income to the annual cash rent due on the ground lease.

17 This analysis calculates the delta in MOIC between two ground leases through their 99-year term with 2% annual rent increases that are identical in all ways except the entry cap rate.

DRIVING FORCE



Gary A. Goodman
Partner
Dentons

Gregory Fennell
Partner
Dentons

Jon E. Linder
Partner
Dentons

In this first of a special two-part series, Dentons explores the opportunities—and intricacies—multi-tiered financing.[1] As syndication grows in popularity among lenders, a host of legal issues are affecting the market.

Syndication continues to grow in popularity among lenders. Here, the authors explain the significant legal issues surrounding such transactions.

According to a recent report, commercial real estate and multifamily mortgage borrowings in 2023 are forecasted to reach $645 billion, a slight decrease from the overall total commercial real estate and multifamily mortgage borrowings in the previous two years.[2] Notwithstanding such overall decrease in volume, commercial mortgage loans have continued to escalate in size and complexity, and as such, lenders have been forced to further develop methods to adequately diversify their risk.

While most mortgage loans are sold into the commercial mortgage-backed securitization (CMBS) market, mortgage loans held for syndication still represent a significant share of the loans made by many real estate lenders. The syndication market provides mortgage originators with an opportunity to create a customized lending product which extends beyond the standard requirements of the rating agencies.

The syndication market has recently gained significant momentum for "value-added" lenders who are willing to: (i) incur above-average risk by placing loans in higher-leveraged loan positions in the capital stack; or (ii) provide financing outside a conduit structure for construction projects, land acquisitions, and/or lease-up projects.

The primary incentive for syndicating loans in today's market is diversifying risk and, thus, increasing the granularity of a lender's loan portfolio. Other considerations for lenders who sell loan participations include leveraging income and reducing capital weight while building and maintaining relationships with clients.

Access to the know-how and deal flow of established real estate lenders is an incentive for lenders who purchase loan participations to join a syndicate group. Most key players in real estate loan syndication in the US include US lenders and international lenders from such countries as Germany, France, Canada, and England, serving in roles of both agent lenders and participant lenders.

As these trends continue, it becomes increasingly important for syndication participants to understand the driving forces behind syndication, as well as the legal issues that arise in connection with these transactions, including issues often negotiated between members of the syndicate group. The respective interests among loan participants vary to the extent that pari-passu loan shares, subordinate loan shares, A/B loan structures, or mezzanine loan interests are involved in the capital stack.

Similarly, since an estimated $1.1 trillion of outstanding mortgage loan debt will mature in 2024, the need for mezzanine financing will increase.[3] As the mezzanine market continues to expand to feed the ever-growing demand, it is necessary for lawyers and clients alike to understand the special relationship which exists among the mortgage and mezzanine lenders in multi-tiered financings. In particular, lawyers and clients need to have an intricate understanding of the single document which codifies the senior-junior class relationship; the intercreditor agreement.

DRIVING FORCES BEHIND LOAN SYNDICATION

The major benefit of loan syndication is that it allows arranging lenders (who are often the loan originators) to diversify risk while maintaining close relationships with their customers. To minimize credit risk and to ensure acceptable levels of diversification, lenders monitor and impose limits on their exposure with regard to a particular project as well as the amount of loans made to a particular sponsor. As development projects become more complex and expensive, developers require larger loans, which may exceed a particular lender's loan exposure limits or the maximum amount that a particular lender is willing to extend to a sponsor.

By creating a syndication group and, thus, dividing the obligations to lend the entire loan amount among several lenders, participating lenders are more likely to be able to stay within their credit exposure limits. The participating lenders also can access the expertise, business relationships, and deal-flow of arranging lenders, allowing the participants to extend their customer base without investing large amounts for marketing costs and administrative capabilities.

Lenders that arrange the syndication group or serve as the administrative agent for the participants (oftentimes the same lender) can enhance their own profitability by charging additional fees and other compensation for arranging and administering the loan without the need for committing capital for the entire loan amount. To a certain extent, agent lenders may also expect their participant banks to bring future syndication deals back to the agent lender. All the lenders in the syndicate group benefit financially from their loan participation by collecting pro-rata interest and fees, particularly commitment fees.

Mezzanine debt is the level of debt between the senior secured debt and the equity, and was typically used by borrowers to fund development projects. However, as mortgage lenders have been reluctant in recent years to finance projects with high loan-to-value ratios, borrowers have increasingly turned to mezzanine debt to bridge the gap between the levels of debt desired by such borrowers and the amount of financing offered by mortgage lenders.

As development projects become more complex and expensive, developers require larger loans, which may exceed a particular lender's loan exposure limits or the maximum amount that a particular lender is willing to extend to a sponsor.

PARTICIPATION STRUCTURES FOR REAL ESTATE LOANS

Direct participation

In a loan involving **direct participation**, each participant lender acts as co-underwriter and becomes a party to the loan documents at the closing of the loan.

Although each participant lender has its own contractual relationship with the borrower (and, thus, is called a co-lender), typically one of the lenders (in most cases the originator of the mortgage) will serve as the administrative agent for a group of participants. Such deals may be executed in a "club" format, in which several lenders partner to form a small lender group for transactions that exceed the risk appetite of each individual lender. The agent lender is responsible for administering the loan and maintaining the day-to-day relationship with the borrower. Each of the co-lenders owns its respective portion of the loan, which obligates the co-lender to fund to the borrower the amount to which it has committed to lend and entitles such co-lender to the benefits (i.e., interest and fees) arising out of its portion.

Each co-lender often acquires a promissory note in the amount of its share of the loan, made by the borrower payable to the order of such co-lender, as payee. However, the notes often provide that the payments made under the note be sent to the agent lender, who collects the payments and distributes to each co-lender its respective share of the funds.

Regular participation

In a loan involving **regular participation**, direct participants join as participant lenders after the initial closing of the loan.

An existing lender often the arranging lender who typically also serves as the administrative agent sells a portion of the loan to the incoming participant lender (who is also called a co-lender). This sale is documented by an assignment and assumption agreement (or assignment and acceptance agreement) between the selling lender and the co-lender.

The co-lender will acquire by assignment an undivided participation interest in the loan on a pro-rata basis, which means that it will accept the obligation to advance its portion of the loan and will receive a direct interest in the amount of its participation in the right to repayment of the loan and the collateral given to secure the loan. In most other respects, the rights and obligations of the lenders in a regular participation are similar to those in a direct participation.

Indirect participation

If a loan is syndicated through **indirect participation**, the participant lenders are not and do not become parties to the loan documents. An indirect participant enters into an agreement with the selling lender to purchase interests and obligations under the loan and receives a participation certificate executed by the lead lender, and not a note executed by the borrower. The participant lender incurs only a guarantee-like funding obligation and must reimburse the selling lender for any loan expense in connection with the loan documents. As a result, the borrower may not have knowledge of an indirect participant's existence.

Certain lenders' regulations or internal guidelines require a direct claim against the borrower and the collateral and therefore such lenders are prohibited from purchasing indirect participation interests in loans. Some loan structures involve a combination of direct and indirect participations, and some structures may have varying levels of priority among participants in terms of rights to receipt of payments and ability to exercise remedies.

In a co-lending arrangement, the lead lender has certain duties to the other members of the loan group, known as the Servicing Standard. The Servicing Standard requires the lead lender to service the loan (or manage the property) in "a commercially reasonable manner" that benefits all co-lenders, without regard to its relationships with or ownership of any other parties to the agreement.[4] It is sometimes stated as the higher (i) the standard by which the lead lender services its own loans; and (ii) the customary standard for servicing in the industry.

DOCUMENTING SYNDICATION RELATIONSHIPS

Because syndication involves multiple parties, it is very important that the primary and syndication loan documents clearly define the role of each party and set forth the relative rights, obligations, and priorities among the parties. Many provisions are standard, but some may be heavily negotiated or modified by side letters between the agent lender and a co-lender.

Although loan syndication enables lenders to increase diversification and engage in transactions they might otherwise be obligated to turn down, lenders within a syndicate group give up the flexibility to make decisions with respect to the loan independently. Although the agent lender is generally granted the power to make the day-to-day decisions alone, loan documents often require consent and/or approval from some or all participant lenders for certain decisions.

In some syndications, co-lenders execute the primary loan documents with the borrower at the closing of the loan. More commonly, in a secured mortgage loan, the loan agreement, the promissory note, the mortgage and the other ancillary documents executed in connection with the closing of the loan are executed by the main underwriter.

The main underwriter, as agent, is the only lender at the closing and intends to sell portions of the loan in the secondary market. To facilitate the future sale interests in the loan the agent lender must consider market pricing, loan terms, and reasonable agent/co-lender provisions at loan closing. The co-lenders do not have a real-time opportunity to review or comment on the primary loan documents or participate in negotiations with the borrower even though many provisions regarding the agency/participant lender relationship are contained in the loan agreement.

In cases where multiple underwriters execute the loan agreement as direct co-lenders and participate in the primary closing with the borrower these concerns do not arise. Co-lenders signing the primary loan documents at closing are granted co-underwriter privileges (such as primary market pricing and co-agent and co-underwriter titles related to the transaction and can negotiate loan provisions to some extent, especially the sections relating to the agent/co-lender relationship.

In the absence of clear documentation, disputes can emerge regarding the roles and authority of the group vis-à-vis its individual members. The New York Court of Appeals, in *Beal Savings Bank v. Sommer*, established a presumption in one such dispute.[5] The court found that one member of a lending group could not, in contravention of the syndicate's decision, act against a guarantor of debt obligations following the default on that debt. As the court noted: "Had the parties intended that an individual have a right to proceed independently, the Credit Agreement . . . should have expressly so provided."[6]

Several other considerations should be accounted for in the loan documents. For instance, they may require a party to disclose the existence of any intercreditor agreements to potential assignees.[7] Loan documents should also clearly define the lead lender's authority to act as administrative agent for the syndicate and what levels of consent from co-lenders are required before administrative agent takes various actions. These guidelines give all members of the lending group a voice in determining key factors yet allow specific issues to be decided without "too many cooks" getting involved.[8] In addition, a lending group must determine if it would be willing to offer seller financing for the sale of a property and, if so, on what terms and in respect of what legal and tax structuring considerations.[9]

ASSIGNMENT AND ASSUMPTION AGREEMENT

When lenders sell participations in a loan, the sale is documented by an agreement sometimes called an assignment and assumption or assignment and acceptance agreement. This document describes the purchase and sale of the participation interest and assigns to the buying lender both the obligations under and interests in the portion of the loan purchased from the selling lender. The assignment agreements usually provide sufficiently detailed true-sale language to support favorable treatment under capital adequacy rules.

The purchasing lender may appoint the agent lender and authorize the agent lender to act on its behalf in the agreement. This document usually the agent lender's standard form and possibly attached to the loan agreement is not negotiated, or revised heavily, because it often refers back to the rights and obligations set forth in the loan agreement. An agent lender is very unlikely to go back to the borrower to renegotiate and amend the primary loan documents. All this has made the loan assignment the preferred participation device in today's real estate syndications market.

INFORMATION RIGHTS OF CO-LENDERS AND NOTICE PROVISIONS

Generally, the primary loan documents will require third parties and the borrower to give notices with respect to the loan to the agent lender rather than to each of the co-lenders directly. The primary and/or syndication loan documents typically address the types of information that the agent lender is obligated to provide to the co-lenders and the timeframes within which the obligations must be carried out.

The co-lenders often negotiate for rights to as much information as possible relating to the loan, such as notices of borrower default, recording information, and copies of all loan documents. The agent, however, will prefer to keep the obligation to provide information to a minimum, by negotiating to exclude obligations to provide such information altogether or limit the obligation to instances in which a co-lender requests such information.

When lenders sell participations in a loan, the sale is documented by an agreement sometimes called an assignment and assumption or assignment and acceptance agreement.

LIABILITY AND RELIANCE ON AGENT LENDERS

Agent lenders usually limit liability to co-lenders under the primary and syndication loan documents to willful misconduct or gross negligence resulting in actual damages. The agent lender is usually held to the standard that it would use in its own transactions. The courts usually accept these provisions and do not read a fiduciary relationship into the agreements between agent lender and participants. Most primary and/or syndicated loan documents provide that agent lenders have actual knowledge of a borrower's default. Some very large agent lenders, with far-flung operations, are concerned about being deemed to have knowledge because of employees' actual knowledge. Therefore, they seek to limit their liability to those defaults of which they have received written notice from either the borrower or their co-lenders.

Because a borrower will not ordinarily give a lender notice of its own default, it is unlikely that the co-lender will obtain knowledge of a default before the agent lender. While it might be fair to limit imputed knowledge of the borrower's default to employees working on the subject loan transaction, large agent lenders rarely agree to that compromise. Rarely do prospective co-lenders terminate negotiations over this point.

In order to avoid liability to co-lenders, agent lenders require that co-lenders perform their own due diligence and credit analysis with the information provided by the agent lender. To memorialize the lack of co-lender reliance on the agent lender's analysis, the agent lender will typically require representations from each co-lender that such co-lender has not relied on the financial analysis of the agent lender and that the co-lender has done its own credit analysis and made its own decision with respect to joining the syndicate group. Therefore, the agent lender is usually protected when making day-to-day decisions with regard to a real estate loan. Liability issues do arise for an agent lender if a real estate loan requires specific skills, and the agent lender explicitly commits to apply such skills in administering the loan under the primary and/or syndication loan documents.

(Editor's Note: The second part of this series will be published in the next issue of Summit Journal, to be released February 2025.)

The agent lender is usually held to the standard that it would use in its own transactions.

ABOUT THE AUTHORS

Gary Goodman and Jon Linder are partners in the New York office of Dentons US LLP and Gregory Fennell is a partner in the San Diego office of Dentons US LLP.

NOTES

[1] The authors gratefully acknowledge the assistance of Jordan Lee, Esq., a real estate associate in the New York office of Dentons US LLP, in the preparation of this article. This article is an updated version of an article authored by Messrs. Goodman, Fennell and Linder entitled "Special Problems of Syndicated Loans and Multi-Tiered Financings", which appeared in the September 2023 issue of Practical Real Estate Lawyer, which article significantly updated a paper presented by Messrs. Goodman and Fennel, with the assistance of Jonathan Jacobs, Esq., then a real estate associate in the New York office of Dentons US LLP, at Strafford Publications, Inc.'s Syndicated Real Estate Loans: Structuring Agreements to Balance Differing Rights and Obligations of Lenders and Agents Commercial Real Estate Financing program in September 2014. Even earlier versions of this article, one authored by Mr. Goodman, appeared in Commercial Real Estate Financing 2014, and the other co-authored by Mr. Goodman, Michelle C. Yip, Esq., now an Associate Counsel with Boston Properties, Inc., and Dr. Robert W. Becker, Senior Vice President of Landesbank Hessen-Thüringen Girozentrale's New York Branch, appeared in the January 2007 issue of Banking Law Journal.

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[5] 8 N.Y.3d 318 (2007).

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[7] Kara Bruce, "Should distressed debt investors or other assignees be held to the terms of intercreditor agreements?", email to the Advisory Committee Subgroup on Intercreditor Agreements (for what organization?), Oct. 20, 2013 (on file with author??).

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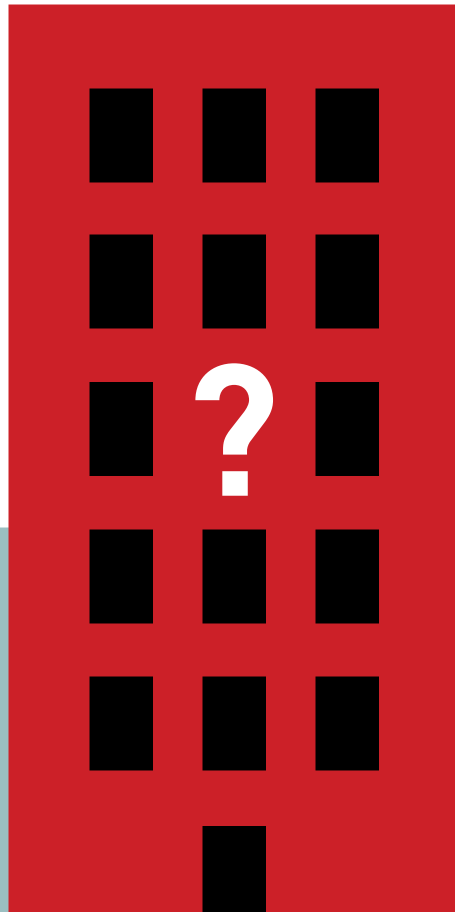
[9] Id.

ENHANCED PROTECTION



Andrew J. Weiner
Partner
Pillsbury

Brian E. Finch
Partner
Pillsbury

Aimee P. Ghosh
Partner
Pillsbury

Samantha Sharma
Senior Associate
Pillsbury

Sarah Hartman
Law Clerk
Pillsbury

The SAFETY Act program offers real estate investors liability protections and other benefits—and building or portfolio owners of sufficient size and purpose may find it worthwhile to consider making a SAFETY Act application.

The risk of terrorist attacks faced by owners and operators of real property, and the consequent devastating impact to their properties and operations, has not materially diminished since the 9/11 attacks on the World Trade Center, even though twenty years have passed since the tragedy.

This risk is especially pronounced for owners and operators of properties that are of a size, location, or character that makes them a more likely target, potentially putting large numbers of employees, staff and visitors at risk. The US Department of Homeland Security (DHS) administers a program that enables owners and operators to manage this risk and hedge against resulting liabilities. Notably, DHS highlights that owners of stadiums, theme parks, and high-profile commercial buildings in major US cities have participated in this program.

This article provides a high-level introduction to the liability protections offered under this program, created by the Support Anti-Terrorism by Fostering Effective Technologies Act (SAFETY Act), enacted by Congress in 2002.

SAFETY ACT OVERVIEW

The SAFETY Act offers providers of security products, services, and security programs designed to deter acts of terrorism—including internally deployed security programs at large commercial properties—the opportunity to apply for, and secure, significant liability protections.

US courts have categorized the threat of a terrorist attack as “reasonably foreseeable,” and officers and directors have been held to owe a duty of oversight in that regard. This exposes property owners (and their direct or indirect owners, management, and employees) to material (and potentially overwhelming) liability for property damages and injury to, or death of, individuals caused by third-party actors on or around their assets. Not all of this risk is insurable, and the cost of available insurance is substantial.

The SAFETY Act, by its terms, can be invoked upon the occurrence of an “Act of Terrorism,” which is an event determined by the DHS Secretary as one that: (i) is unlawful, (ii) causes harm to individuals, entities, or property in the US, and (iii) “uses or attempts to use instrumentalities, weapons or other methods designed or intended to cause mass destruction, injury or other loss to citizens or institutions of the United States.”

DHS has confirmed that “Acts of Terrorism” may include cyber attacks, which (in a real estate context) might be particularly relevant to the hospitality industry and data centers.

Companies can apply for SAFETY Act protections for individual products and for integrated security systems serving a building or complex. Examples include: (i) multi-layered security systems for major venues; (ii) design, integration, monitoring, and maintenance of perimeter security and anti-intrusion systems; (iii) physical security services at commercial facilities; (iv) evacuation planning tools, and the other similar systems. Companies can also seek protections for holistic security programs, inclusive of policies, procedures, personnel, and the deployment of security systems.

Companies that deploy security programs (including to protect their properties and operations) may apply for liability protections which come in two levels: Designation and Certification. The applicant must present a detailed description of the protections for review by DHS-designated experts, with the desired result that they are "Designated" or "Certified" by DHS. These designations or certifications are typically valid for a period of five years and are required to be renewed for each subsequent term.

Designation

If a "Designation" is obtained, the awardee is entitled to the following protections against liability to third parties for an applicable Act of Terrorism:

- Generally, the "seller" of an approved product, service, or program may be sued—not the downstream users. Plaintiffs are barred from suing directors, officers, equity holders, and others individually for liability with respect to the Designated items.
- A cap is placed on the aggregate damages payable by the awardee to third party victims relating to the Act of Terrorism. This is an annual aggregate cap negotiated with DHS and generally expected to be consistent with the awardee's relevant terrorism insurance. The required amount of insurance is defined based on a multi-factor analysis prescribed by DHS. Once the cap is reached in the year in question, the awardee is not liable for any further damages where the SAFETY Act defense may be used. Recovery may be reduced by amounts collected from collateral sources. Once insurance levels are approved, they must be maintained by the awardee.
- No joint and several liability for non-economic damages.
- All claims must be brought in Federal court and pre-judgment interest and punitive damages are barred.

Certification

Due to the increased scrutiny required for a "Certification" award, if such an award is obtained, then—in addition to the benefits of Designation—the awardee is also entitled to have all claims brought against it arising from the Act of Terrorism and related to the products or services described in the SAFETY Act Certification dismissed, unless the plaintiff can show fraud or misconduct of the awardee in applying for SAFETY Act protection.

SAFETY Act applicants have noted that merely going through the application process has resulted in a stronger, more consistent security program.

OTHER POTENTIAL DIRECT BENEFITS

The process of applying for protection under the SAFETY Act requires the applicant to intensively review, and defend to DHS experts, its security program. This process may have practical benefits in improvements of that program, and—for a property owner—provide exposure to products or systems that have been vetted by DHS.

The existence of a SAFETY Act defense may inform and moderate the strategy of plaintiffs or potential plaintiffs. If a SAFETY Act defense is upheld, litigation costs to settle may be reduced, given the brackets placed on who can be sued and what award can be made.

Anecdotally, awardees may experience lower insurance premiums based on the existence of the SAFETY Act award.

As suggested above, users of SAFETY Act-approved products and services are entitled to liability protections. In other words, in the event of a declared Act of Terrorism involving the deployment of a SAFETY Act-awarded product or service, litigation stemming from the deployment may only be brought against the "Seller," and not the end user. As such, property owners and operators can derive SAFETY Act benefits simply by procuring SAFETY Act Designated and/or Certified products and services.

POTENTIAL COLLATERAL BENEFITS OF CONSIDERING A SAFETY ACT APPLICATION

SAFETY Act applicants have noted that merely going through the application process has resulted in a stronger, more consistent security program. That is because preparing a successful SAFETY Act application requires carefully reviewing many security programs and policies, which generally lead to improvements in, as well as useful clarifications to, those items. It may also disclose deficiencies in existing security programs.

A SAFETY Act application process may lead to greater awareness of the various security responsibilities executives have with respect to security matters. A key component of any SAFETY Act review is setting forth clear roles and responsibilities both inside and outside an organization. That leads to a greater understanding of who has responsibility for a security matter inside an applicant's company, as well as clearly defining the responsibilities of outside security vendors.

Even if the liability protections of the SAFETY Act are not triggered, the existence of the award can still be highly valuable in any situation where an awardee's security program is called into question. The fact that a company's security program successfully navigated the SAFETY Act application process allows it to argue that the program has already been deemed effective and reasonable. Mere incorporation of vetted products or procedures may support a defense against liabilities for an Act of Terrorism, particularly punitive damages.

LIMITATIONS AND OPEN ISSUES

On its face, the SAFETY Act is potentially a valuable risk management tool for property owners and operators. In evaluating whether to consider engaging with DHS in the SAFETY Act process, additional factors should be considered:

SAFETY Act applications must satisfy a rigorous set of hurdles, extensive document production and review by and interrogatories of the experts selected by DHS. Certifications and Designations are not lightly provided and are by no means certain to be granted. And while there is no filing fee for submitting an application for SAFETY Act protections to DHS, developing the application, as well as responding to inquiries from DHS about the application during the review process can include a material (but not unreasonably high) investment of personnel resources.

There is also some uncertainty as to what events the DHS Secretary will be willing to classify as Acts of Terrorism, and that classification is a condition precedent to the availability of SAFETY Act benefits for that particular event. While the definition of the phrase seems broad and is not expressly limited to acts of foreign terrorist organizations or persons acting in furtherance of political or religious goals, it remains uncertain how this determination process will proceed and, in particular, whether and to what extent acts of violence will be deemed "Acts of Terrorism." The scope of the DHS Secretary's discretion is by no means clear in such regard.

The provisions of the SAFETY Act have not, to our knowledge, been tested in court. Speaking more broadly, there is a general lack of judicial guidance for most questions relating to the application of SAFETY Act protections. On the other hand, there is at least one instance where a SAFETY Act award may have produced a felicitous settlement by a company that has been granted SAFETY Act protections, even where an Act of Terrorism had not yet been certified.

A Designation or Certification is not all-inclusive. SAFETY Act awards extend only to a specific scope of protection (e.g., a set of policies and processes). Therefore, liability may exist for matters outside of the Designation or Certification. It is also important to note that a Designation is terminable by DHS if the awardee fails to provide requisite insurance certifications or provides a false certificate.

ACTIVATING THE SAFETY ACT

The SAFETY Act program has attracted the attention and efforts of prominent members of the real estate community, who have sought to obtain the liability protections and other benefits that it offers. An owner of a building, facility or portfolio of sufficient size and purpose may find it worthwhile to consider making a SAFETY Act application for its properties or operations.

ABOUT THE AUTHORS

Andrew Weiner is a real estate partner at Pillsbury Winthrop Shaw Pittman LLP, practicing in New York City since 1976. His practice is national and global, with a concentration in New York. He represents domestic and foreign clients in equity, debt and leasing transactions, including joint ventures, distressed real estate, and the hospitality and REIT sectors. He is a fellow of the American College of Real Estate Lawyers. Andy graduated from Yale College and Harvard Law School. He served at the NYC Department of City Planning, the Urban Land Institute and the Ralph Nader Congress Project and as Chair of the Real Property Law Committee of Lex Mundi.

Brian Finch is a partner in the Washington, DC office of Pillsbury Winthrop Shaw Pittman LLP. Brian co-chairs the Firm's Cybersecurity and Homeland Security Practices, with a particular focus on providing proactive liability mitigation advice to clients. His clients include the Durst Organization, Brookfield Office Properties, a number of critical infrastructure companies, defense and cybersecurity contractors, as well as a number of professional sports teams. Brian is a leading authority on the SAFETY Act, a federal statute that can provide liability protection to companies following a terrorist or cyber-attack. Brian regularly speaks and writes on security issues, including for the Wall Street Journal, Politico, The Hill, and other publications. He also is the author of a book on the cybersecurity obligations of lawyers.

Aimee Ghosh is a government, law, and strategies parties at Pillsbury Winthrop Shaw Pittman LLP, based in Washington, DC. Aimee's practice focuses on the intersection of business and government, providing strategic counsel on government affairs strategy, regulatory obligations, state and federal legislation, and rulemaking to help clients maximize business opportunities and mitigate risk. Aimee is a recognized authority on security strategy, counseling clients on global security, cybersecurity, crisis management, business continuity, and related regulatory obligations. Her clients include leading providers of physical and cybersecurity services and organizations with unique security needs. For more than 10 years, Aimee has helped companies, including real estate owners and operators, successfully secure liability protections under the SAFETY Act.

Samantha Sharma is a senior associate at Pillsbury Winthrop Shaw Pittman LLP, practicing in all areas of real estate law since 2015. Her experience includes drafting and negotiation of complex commercial agreements, such as lease agreements for the leasing of office, research, industrial, retail and restaurant space; term sheets, purchase agreements, management agreements and joint venture agreements for the acquisition, disposition or development of office, alternative energy, industrial, multifamily residential and mixed-use properties; and loan documents for the origination, acquisition and syndication of commercial real estate loans. Samantha's experience also includes advising corporate, finance and energy clients on all aspects of real estate.

Sarah Hartman is a student at Fordham University School of Law. She is a staff member of the *Fordham Urban Law Journal* and is a member of the Dispute Resolution Society and ABA Negotiation Competition Team. She will be joining Pillsbury Winthrop Shaw Pittman LLP as a law clerk in the fall of 2025.

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