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 $4 trillion AUM in assets under management.

Learn more at afire.org/summit

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The Cultural Center, formerly Blind Whino, on a sunny day. in Washington, DC. By Sara Cottle/Unsplash, 2020.

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STAFF

CEO AND PUBLISHER
Gunnar Branson
gbranson@afire.org

COO
Lexie Miller, CAE
lmiller@afire.org

SENIOR COMMUNICATIONS DIRECTOR AND EDITOR-IN-CHIEF
Benjamin van Loon
bvanloon@afire.org

MEETING DIRECTOR
Asmait Tewelde
atewelde@afire.org

DESIGN AND PRODUCTION
Campbell Symons Design
campellsymons.com

CONTACT

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

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THE CASE FOR US REAL ESTATE IN 2026

Despite continued economic uncertainty and geopolitical rebalancing, the latest AFIRE International Investor Survey underscores continued confidence in US real estate . . . with some important qualifications.

Benjamin van Loon
Summit Journal

NOTE FROM THE EDITOR

Benjamin van Loon
Editor-in-Chief
Summit Journal

This landmark twentieth issue of Summit Journal comes at a crucial period in the US story, as the informal geopolitical agreements defined by the rules-based order of the last century 80 years are now transforming into a new global economic balance.

Anyone tracking the latest nuances of foreign policy understands that this current process of transformation is both volatile and unpredictable, but as savvy investors understand, the world is not wholly subject to political whims.

Innovations in energy usage, financial mechanisms, transportation, building methods, and technology continue apace, regardless of external social contingencies. Live, work, and play preferences evolve in kind, even as climactic and environmental factors accelerate or contravene forecasts around migration trends, work preferences, and broader investment decisions.

The articles selected for this issue of Summit Journal, for initial presentation at the AFIRE Winter Conference in Washington, DC on February 11–13, 2026, cover the full range of the commercial real estate conversation—including a critical conversation around metro-level resiliency and migration from from RCKRBX; a voice of informed conscience around the AI and supposed data center bubble from RCLCO; equity and debt trends from Berkshire Residential; and global investor insights from the latest AFIRE investor survey, included at the front of this issue.

Ongoing economic uncertainties and geopolitical rebalancing will determine how the rest of this year (and beyond) will shape up, but the global investor community continues to advance a long-term view, affirming continued in confidence in US real estate—with some important qualifications.

CONTRIBUTORS

AFIRE (P.6)
afire.org

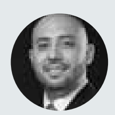
Gunnar Branson
CEO and Publisher


Benjamin van Loon
Communications Director
and Editor-in-Chief


APERS AI (P.26)
apers.app

Francis Huang
Co-Founder

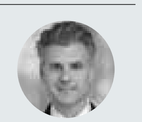

BANK HAPOALIM (BHI) (P.60)
bankhapoalim.com

Richard Cadena
Vice President, Commercial Real Estate Credit


BERKSHIRE RESIDENTIAL INVESTMENTS (P.96)
berkshireresidentialinvestments.com

Gleb Nechayev
Head of Research, Chief Economist


CLEARWATER PACE (P.42)
c-pace.com

Jonathan Seabolt
CEO


CONSULTANT (P.60)

Donal Warde
Real Estate Investment and Operations Consultant


CUSHMAN & WAKEFIELD (P.116)
cushmanwakefield.com

Finn DuComb-Festor
Equity, Debt & Structured Finance Analyst

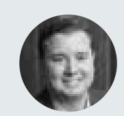

Miles Treaster
President of Capital Markets, Americas


JOHN BURNS REAL ESTATE CONSULTING (P.84)
jbrec.com

Don Walker
Managing Principal


Kevin Cody
Senior Manager, Consulting


LUMEN ENERGY (P.46)
getlumen.com

Michael Sanduski
Head of Business Development


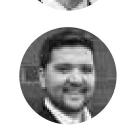
METLIFE INVESTMENT MANAGEMENT (P.110)
investments.metlife.com

William Pattison
CRE Head of Research & Strategy, Real Estate


Michael Steinberg
Senior Director, Real Estate Research


Carsten Raaum
Director, Real Estate Research


Kiel Deitrich
Associate, Real Estate Research


Jacob Kurosaki
Associate, Real Estate Research


NEW YORK LIFE REAL ESTATE INVESTORS (P.52)
newyorklifeinvestments.com

Stewart Rubin
Head of Strategy and Research, Senior Director

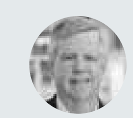

Marshall Swett
Associate, Strategy and Research

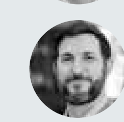

PRP REAL ASSETS (P.90)
prpra.com

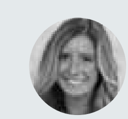
EJ Wislar
Managing Director, Mission-Critical Assets


RCLCO FUND ADVISORS (P.20)
rclco.com/rfa/

Scot Bommarito
Vice President, Research

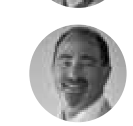

William Maher
Director, Strategy and Research


Andrew Janko
Managing Director


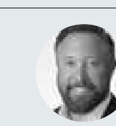
Amber Hughes
Senior Associate


RCKRBX, INC. (P.104)
newyorklifeinvestments.com

Kevin Hudak
Chief Research Officer


Michael Broder
President and CEO


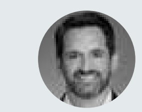
RXR (P.70)
rxr.com

Scott Crowe
Chief Strategy Officer & Head of Equity
Capital Markets


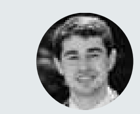
SDS CAPITAL GROUP (P.78)
sds.capital

Deborah La Franchi
CEO and Founder


STOCKBRIDGE (P.84)
stockbridge.com

Paul Kolevsohn
Managing Director, Investment Strategy
and Research


Alex Lachman
Managing Director and Portfolio Manager


Lev Kling-Bronstein
Senior Associate, Investment Strategy
and Research


WESTMOUNT REALTY CAPITAL (P.122)
westmountrc.com

Cliff Booth
Founder and Chairman


ZICKLIN SCHOOL OF BUSINESS (P.60)
zicklin.baruch.cuny.edu

Wenpeng Ding
MS, Real Estate Candidate, Baruch College


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

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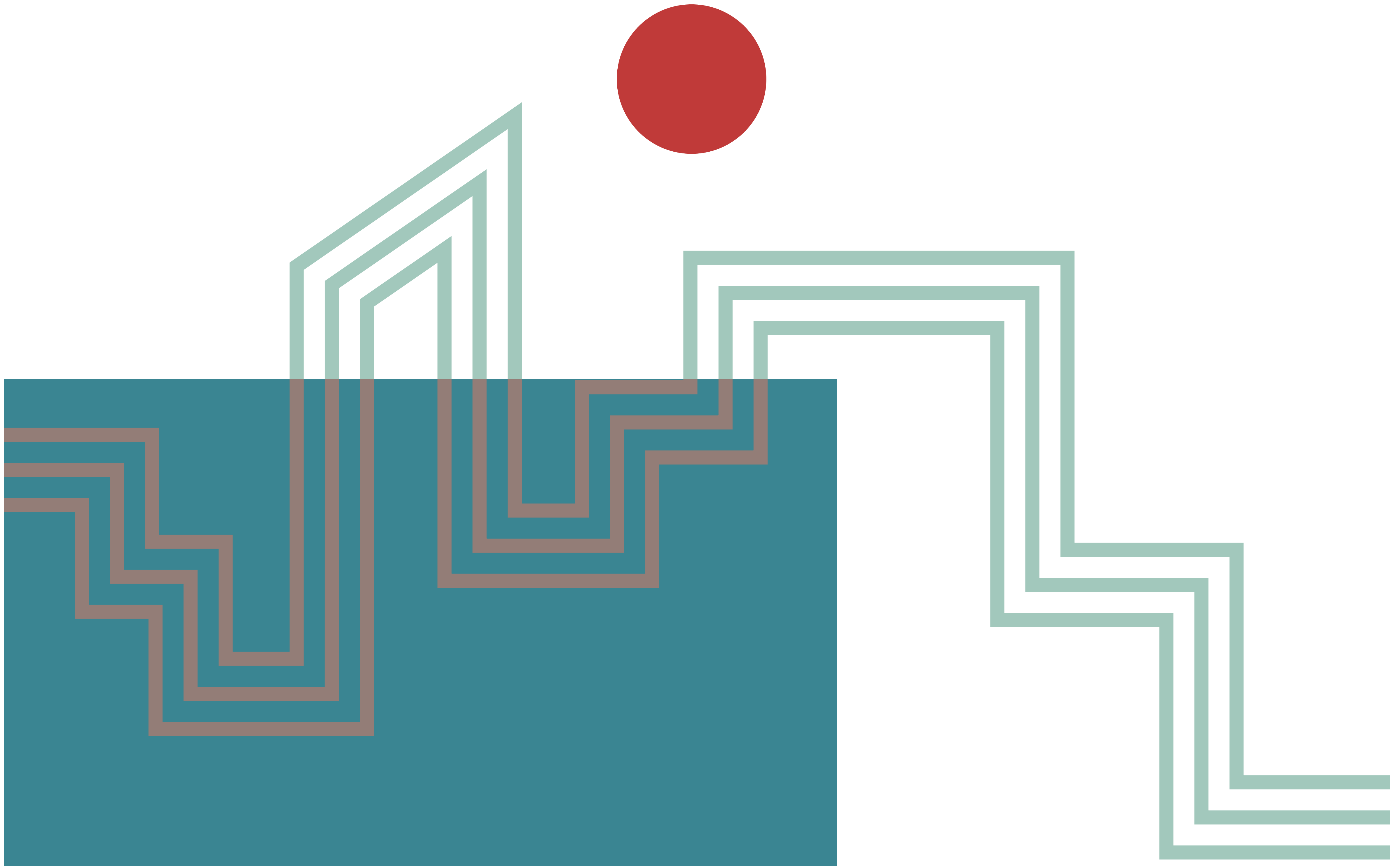
THE CASE FOR US REAL ESTATE IN 2026



Benjamin van Loon
Editor-in-Chief
Summit Journal

Despite continued economic uncertainty and geopolitical rebalancing, the latest AFIRE International Investor Survey underscores continued confidence in US real estate . . . with some important qualifications.

The AFIRE International Investor Survey has been a useful barometer of global institutional sentiment for US real estate for more than thirty years, the results from the latest survey are no different.

Though the survey's respondents may be predisposed to favor US real estate, based on the longstanding mission of AFIRE, they are still beholden to their core fiduciary responsibilities, which includes an ongoing assessment of their financial decisions weighed against the values and intentions of their investors.

As such, despite the continued economic uncertainties and geopolitical rebalancing that defined 2025—and which determines how the rest of this year (and beyond) will shape up—some of the results of the latest AFIRE survey, conducted during the final month of 2025, occasionally run counter to current market assumptions, affirming continued in confidence in US real estate—with some important qualifications.

THE GENERAL OUTLOOK FOR THE US

As shown in *Exhibit 1,* respondents indicate that the continued performance, technological innovation, and global connectivity of America's coastal gateway markets are an inexorable point of appeal for ongoing global investment into the US. These are the self-same markets evincing the demographic and demand fundamentals necessary for investment justification as such, as shown in *Exhibits 4 and 5*.

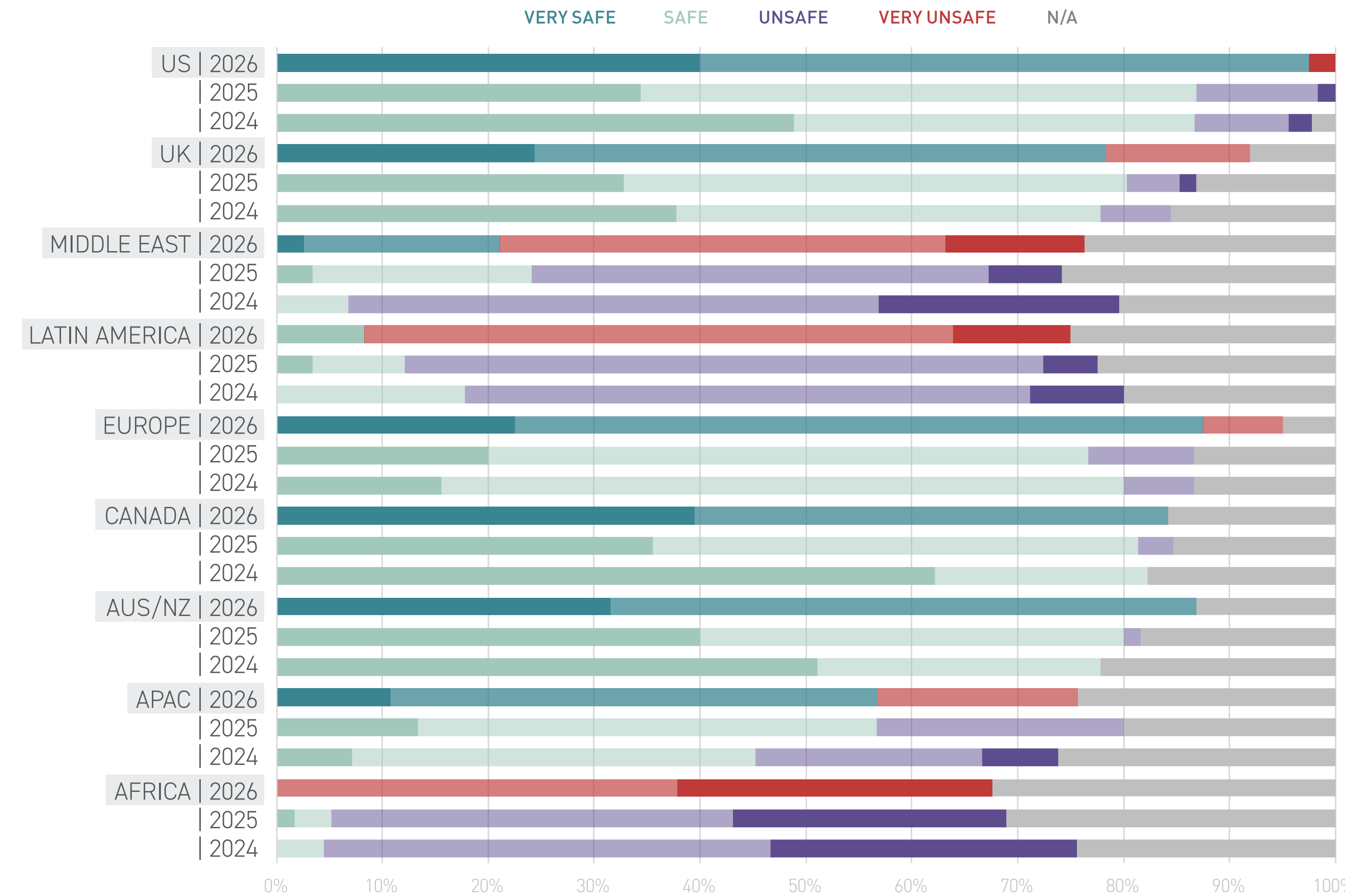
EXHIBIT 1: WHICH FEATURES OF THE US REAL ESTATE MARKET MOST CONTRIBUTE TO ITS CONTINUED APPEAL AS A PREFERRED DESTINATION FOR LONG-TERM GLOBAL INVESTMENT?

Similarly, and relative to other global regions, the US ranks the highest as a safe/very safe destination for investment in 2026, as shown in *Exhibit 2*.

Around 40% of respondents indicate that the US is "very safe," and nearly the full remainder mark it as "safe." But as these results reflect changes in sentiment about geopolitical rebalancing in general, other global regions have increased their relative "safety" in kind. Australia and New Zealand, continental Europe, and Canada have all seen notable increases in safety, while the Asia-Pacific region in general remains stable from 2025. Latin America and the Middle East, meanwhile, have seen some minor declines in perceived safety.

Respondents indicate that the continued performance, technological innovation, and global connectivity of America's coastal gateway markets are an inexorable point of appeal for ongoing global investment into the US.

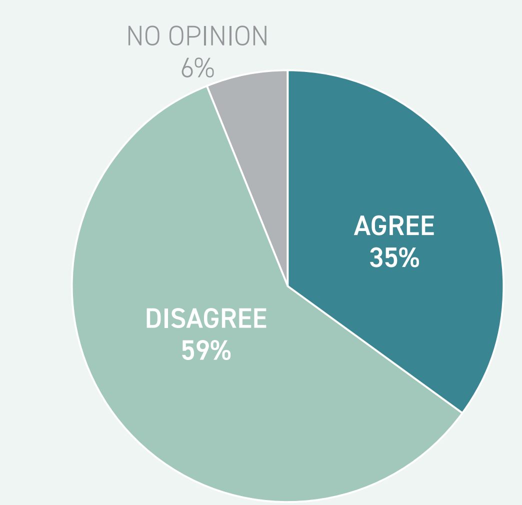
EXHIBIT 2: HOW DO YOU RANK THE FOLLOWING REGIONS FOR INVESTMENT SAFETY IN 2026?



Despite the general climate of skepticism about US reliability at this point in time, nearly two thirds of respondents do not forecast a stream of foreign divestment from the US over the coming year.

EXHIBIT 3: AGREE OR DISAGREE?

Foreign institutional investors will increase divestment from US over next three years.



GLOBAL INVESTMENT PLANS

The growth or diminishment of perceived safety in these regions is underscored by one of the more important and perennial questions covered in the survey: what are your expectations for how your firm will direct its property investments, both within and outside the US, in the coming year. *Exhibits 3 and 4* reflect that 2026 will see increased investments in real assets globally, though the rationale for increases and decreases varies by region.

As shown in *Exhibit 4*, 2026 will see an increased investment into non-US regions, compared to both 2025 and 2024. Respondents cite diversification, portfolio rebalancing, and the ever-present search of stable returns, as the leading criteria for non-US investments.

And as shown in *Exhibit 5*, respondents indicate a growth of investments into the US in 2026, as well, with a larger share (28%) citing stable returns as the leading criteria for these ambitions. Diversification (30%) and portfolio rebalancing (19%) are similarly strong drivers, while those indicating a decrease in US investments are citing a three-way tie between climate risks, regulatory uncertainties, and general portfolio rebalancing.

EXHIBIT 4: WHAT ARE YOUR EXPECTATIONS FOR PROPERTY INVESTMENTS OUTSIDE THE US IN 2026 COMPARED TO 2025?

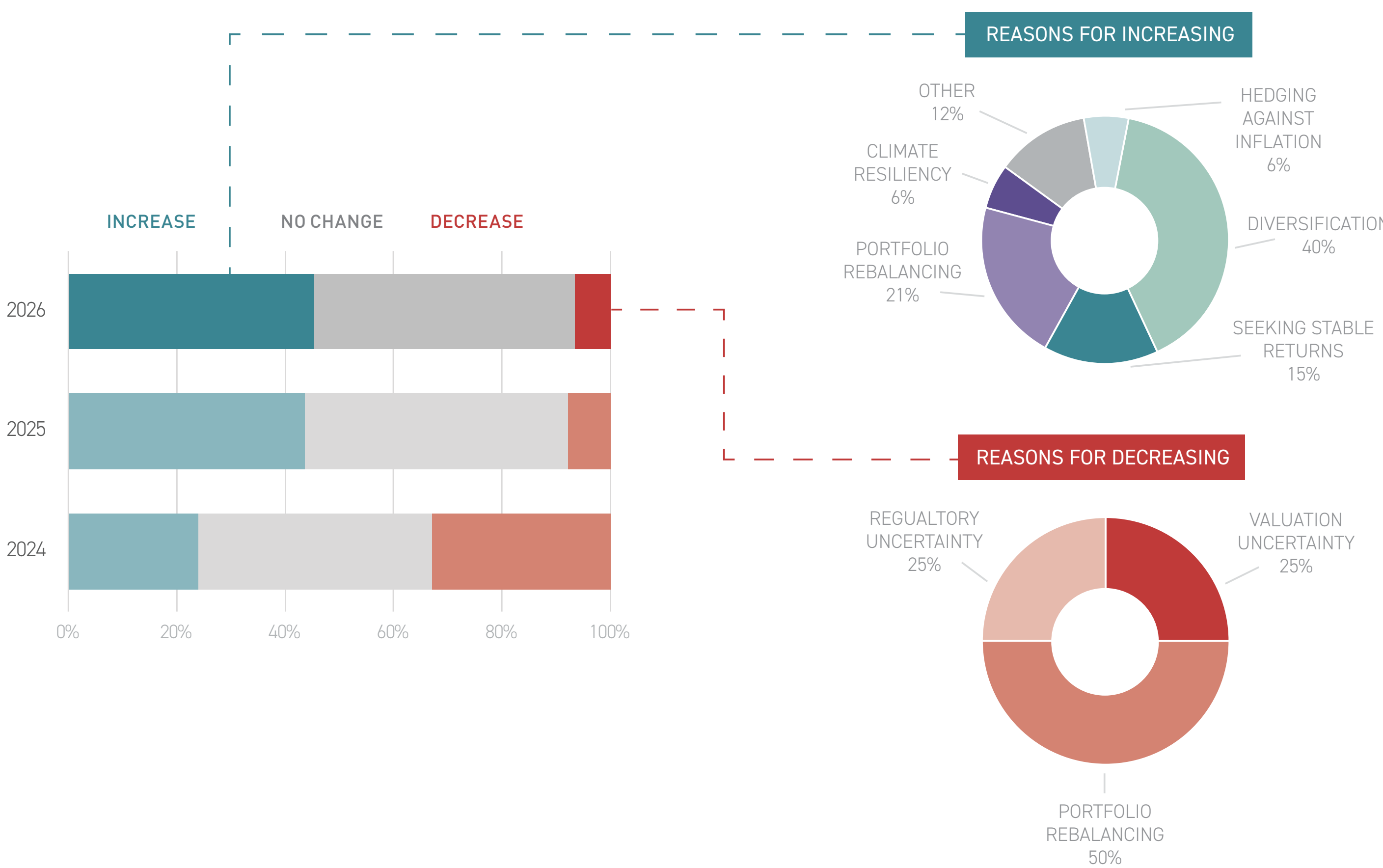
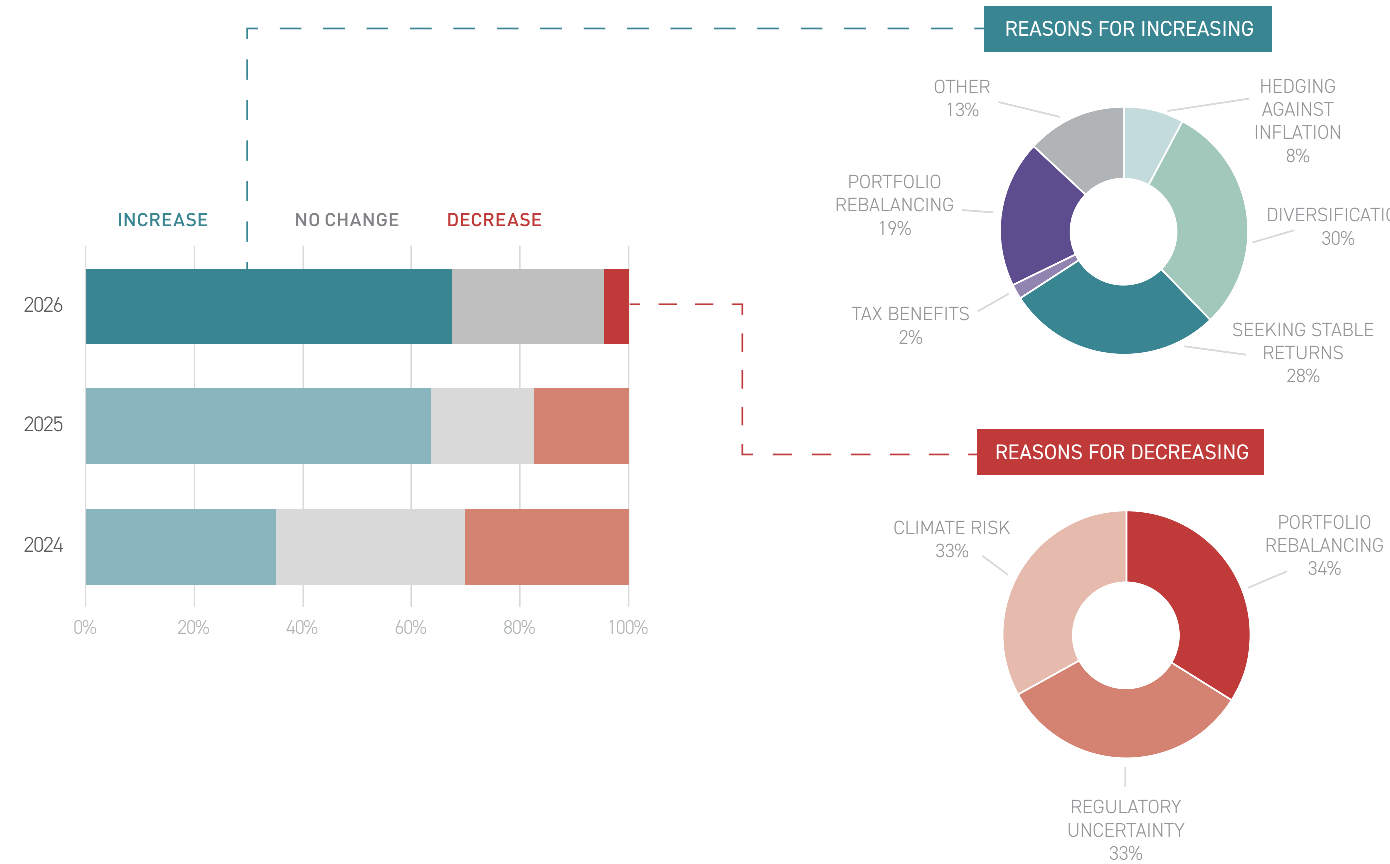


EXHIBIT 5: WHAT ARE YOUR EXPECTATIONS FOR PROPERTY INVESTMENTS WITHIN THE US IN 2026 COMPARED TO 2025?

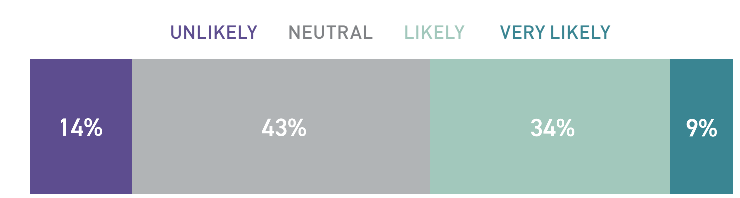


Respondents indicate a growth of investments into the US in 2026, as well, with a larger share (28%) citing stable returns as the leading criteria for these ambitions.

RANKING THE RISKS

Despite this optimism, the respondents are not unaware of the current risks facing US investments. Nearly 45% of respondents, for example, indicated that they are likely to adjust their US real estate investment strategies over the next twelve months as a result of the evolving (and increasingly unpredictable) financial and regulatory landscape in the US, as shown in *Exhibit 6*.

EXHIBIT 6: HOW LIKELY ARE YOU TO ADJUST YOUR US REAL ESTATE INVESTMENT STRATEGY IN RESPONSE TO EVOLVING FINANCIAL, DEVELOPMENT, AND BUILDING REGULATIONS OVER THE NEXT 12 MONTHS?

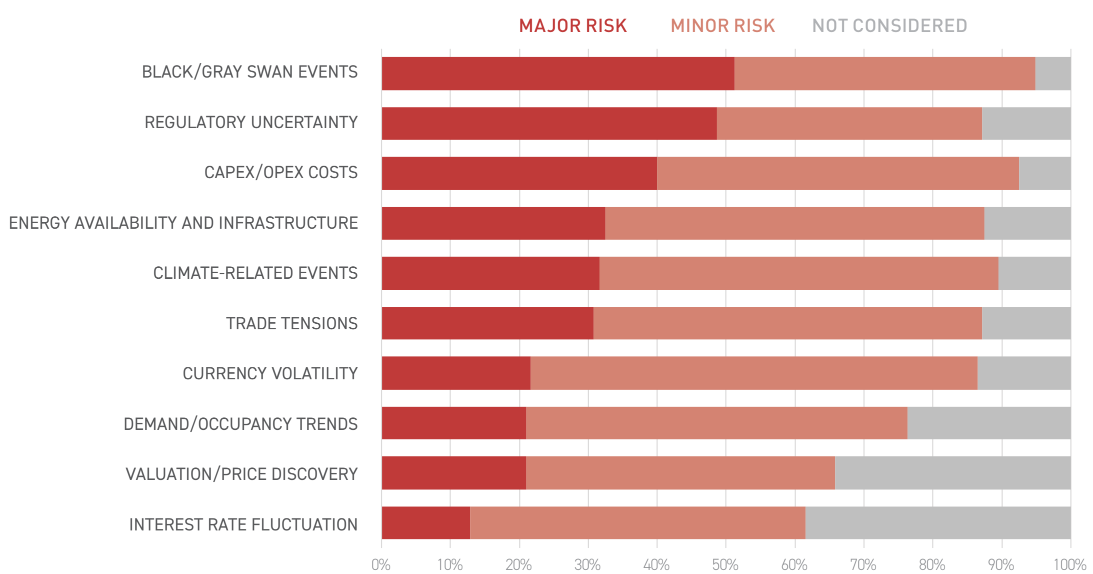


As shown in *Exhibit 7,* these regulatory uncertainties also rank as the second-most “major” risk facing US investment in 2026, with nearly 50% of respondents indicating these uncertainties as such, and another 35% assigning a minor but notable risk to this area. But topping the list of all risks, black and gray swan events claim nearly 95% of all such risks in the coming year.

Black swan events are a persistent risk, even during times of relative peace, largely because they represent *mostly* unforeseeable and thus unquantifiable (such as a global pandemic or a multi-state energy grid blackout). But many of the forecasted “events” in 2026 in in a lighter shade of gray. That is, we are certain of ongoing economic uncertainty; we are certain of geopolitical rebalancing, but not always who or what gets favored in these shifts; we are certain that weather and climate events will strike, but not of their total scale or duration. *But* we are aware these all of these things, together, represent the greatest risk to real estate in 2026.

And interestingly, while questions around valuation and interest rates are always a concern for real estate investors, they rank at the very bottom of the risk list for the year ahead.

EXHIBIT 7: WHAT DO YOU CONSIDER TO BE THE GREATEST RISKS TO US INVESTMENT IN 2026?

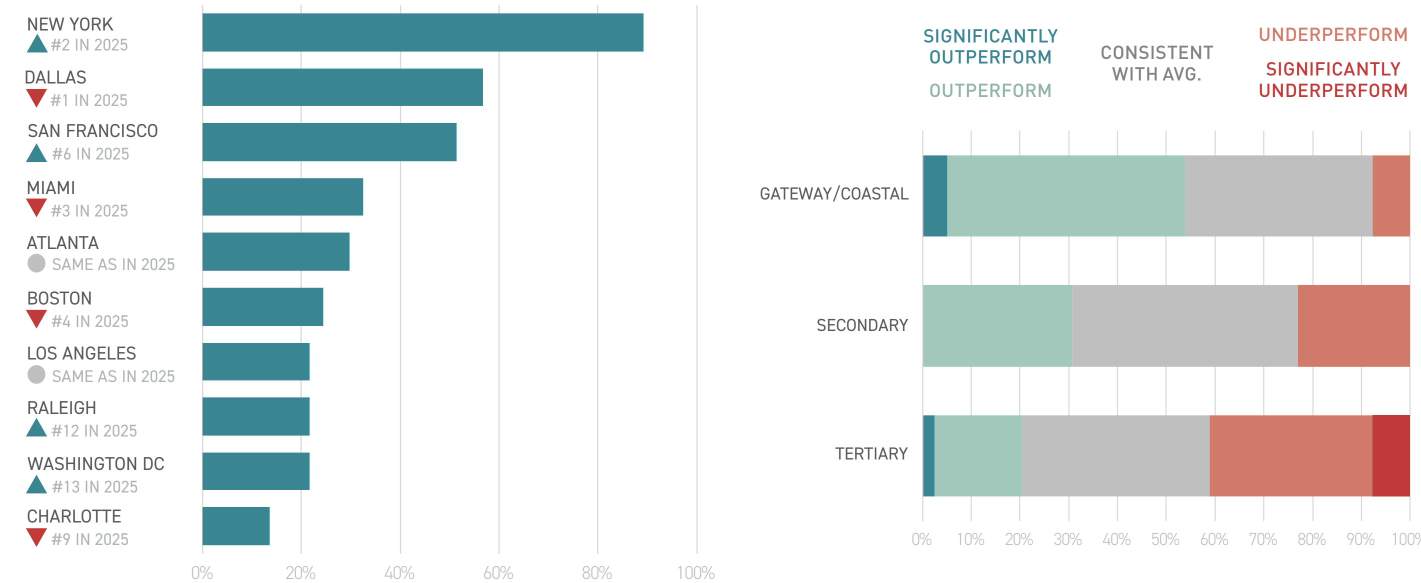


Topping the list of all risks, black and gray swan events claim nearly 95% of all such risks in the coming year.

A CLOSER LOOK AT US MARKETS

Despite the risks—or perhaps because of them—this year’s ranking of the top US cities for investment, and the general market outlook across gateway, secondary, and tertiary markets, reflects a more careful approach, as outlined in *Exhibit 8*.

EXHIBIT 8: TOP US MARKETS AND FORECASTED PERFORMANCE



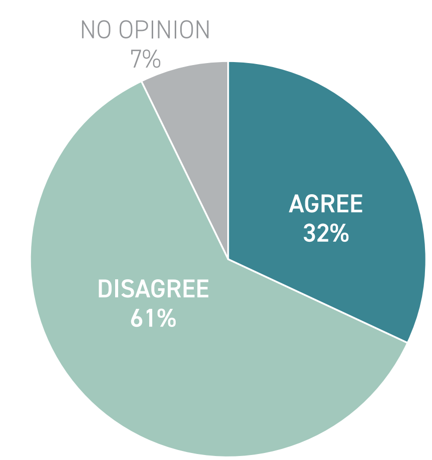
New York reclaims the top spot after slipping to second post in 2025, swapping places with Dallas. Atlanta holds its place in the fifth spot, and Miami also holds its place in the top five, but dropping slightly to fourth choice, as San Francisco claims third place. After struggling with high office vacancy rates since the pandemic, “bargain” properties and the ongoing AI boom have positioned San Francisco for stabilization and renewal. (The same can be said for both Raleigh and Washington, DC, as well, which both climbed into the top ten for 2026 after ranking at #12 and #13 last year, respectively.)

These rankings are underscored by the more generalized outlook forecasting outperformance in US gateway and coastal markets, with a bit more caution around secondary and tertiary US markets—consistent with historical expectations.

While the growth or renewed attention in some of these markets—especially San Francisco and Washington, DC—can be attributed to the AI and data center boom, there remains a persistent skepticism about the sustainability of this boom. Many of the leading headlines in 2025 predicted a major bust in the AI sector, but so far, those prophecies have been deferred, and the general sentiment among two thirds of AFIRE survey respondents is that—bubble or not—CRE portfolios aren’t too exposed to AI, as shown in *Exhibit 9*.

EXHIBIT 9: AGREE OR DISAGREE?

CRE portfolios are overexposed to the potential AI bubble.



These insights are affirmed at the property level, as well, as shown in in *Exhibit 10*. Multifamily remains a favored asset type for the year ahead, with nearly 50% of respondents forecasting an increase in investments in this area. This is down from nearly 70% in 2025, though forecasted increases for almost all property types in 2026 are slightly lower than 2025 outlooks. And office continues its struggles, but at a diminished pace, and the appetite for single-family rentals has diminished for 2026 compared to last year, as well.

As it relates to both market preference and property-level investments, respondents were asked how significantly metro- or state-level policies that support housing development density and development inform their investment decisions. Respondents could select that these regulations significantly inform, moderately inform, or do not inform their investments.

While it's notable that 57% of respondents indicate that housing regulations significantly inform their investment decisions (and 43% say these regulations moderately inform their investments), zero respondents indicated that housing regulations have no bearing on their investments.

EXHIBIT 10: PLANS FOR PROPERTY-LEVEL INVESTMENTS IN THE US IN 2026

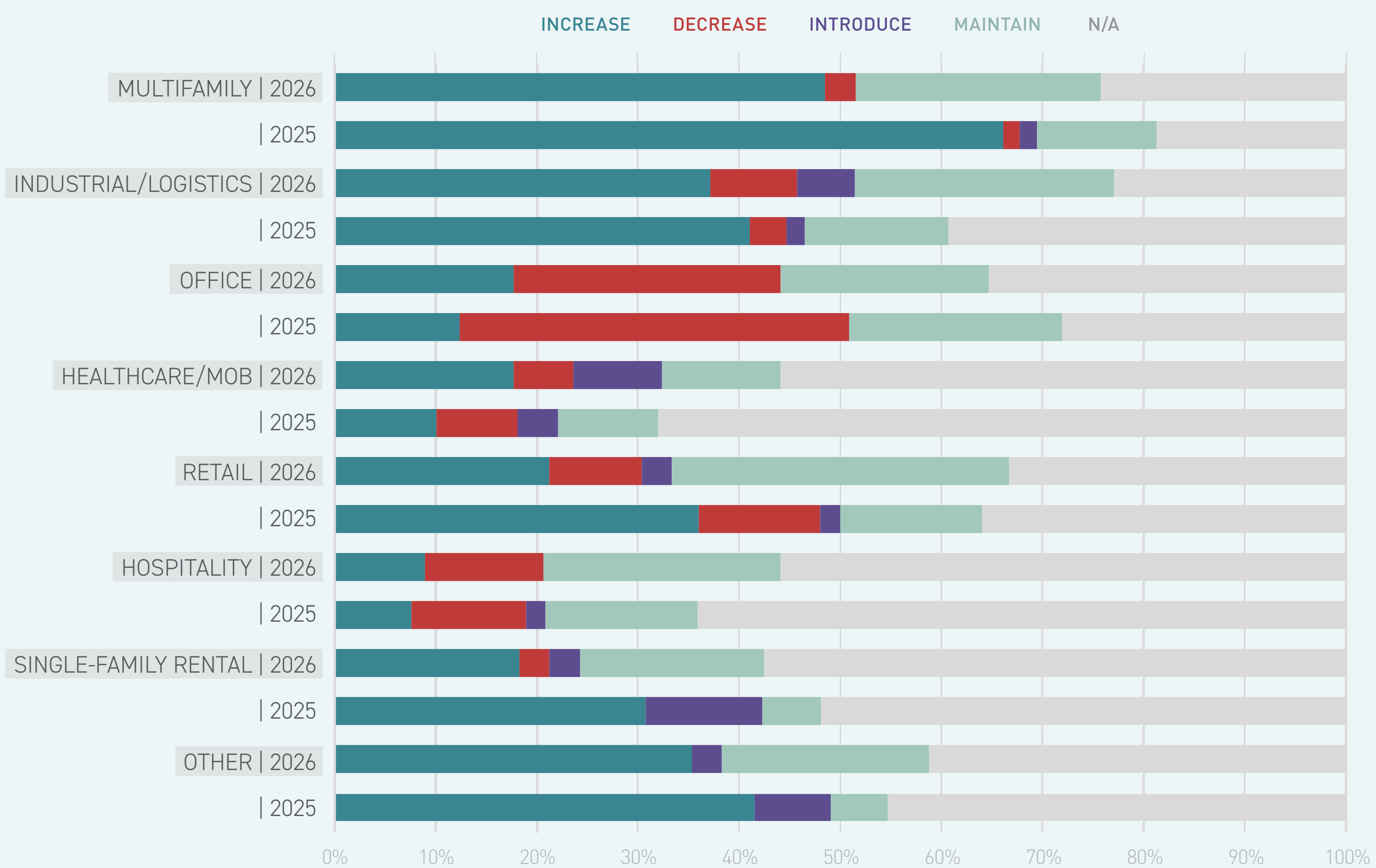
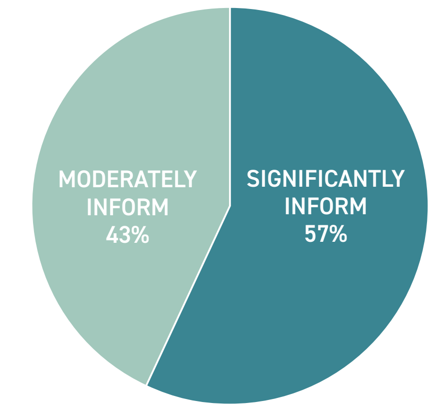


EXHIBIT 11: HOW SIGNIFICANTLY DO METRO- OR STATE-LEVEL POLICIES/ REGULATIONS THAT SUPPORT HOUSING DEVELOPMENT INFORM YOUR INVESTMENT DECISIONS IN THOSE MARKETS?

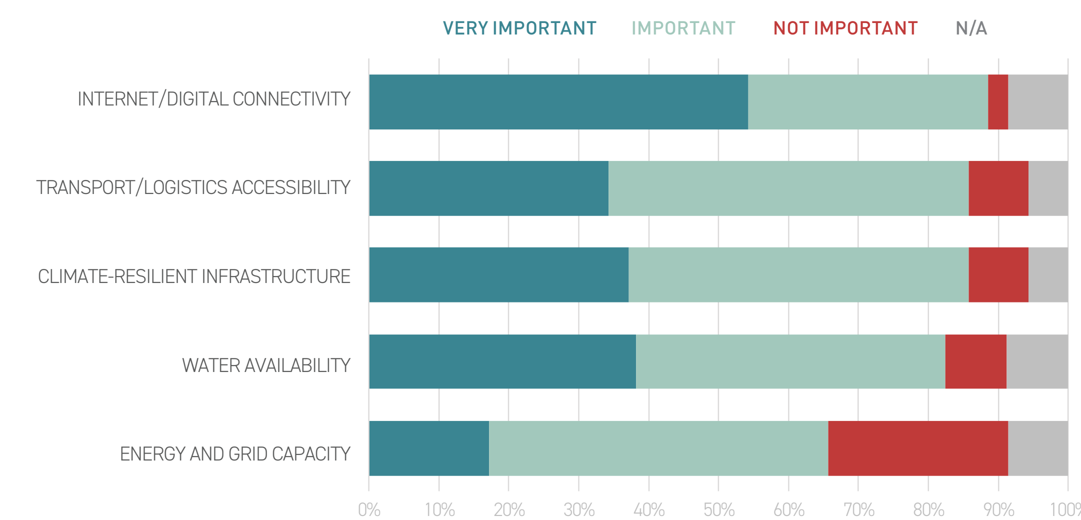


INFRASTRUCTURE AND ECONOMIC STRESS

Following AFIRE's sustained conversation in 2025 about energy and infrastructure in the US, respondents were also asked to rank how various layers of infrastructure inform their market- and property-level plans for US investments in the year ahead, as shown in *Exhibit 12*. Internet and digital connectivity top the list, at nearly 90% importance, which is consistent with the favored asset types detailed in *Exhibit 10*.

Transportation and logistics and climate-resilient infrastructure are tied in terms of total importance, at around 85%, though climate-resilient infrastructure (and water availability) lead in terms of maximum importance for infrastructure.

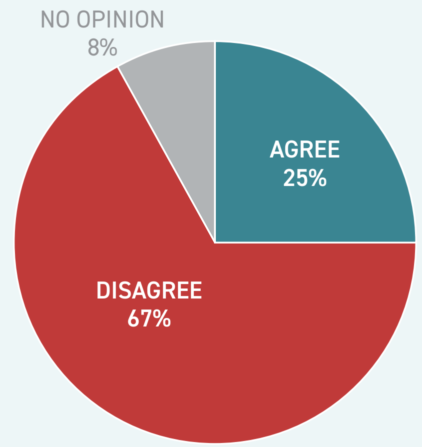
EXHIBIT 12: HOW DO THESE VARIOUS LAYERS OF INFRASTRUCTURE INFORM YOUR PROPERTY-LEVEL PLANS FOR 2026?



Despite ongoing infrastructural concerns about climate resilience and water infrastructure, there is still some skepticism that climate-related issues will cause people to migrate out of the US Sun Belt and towards areas with better water access, including the northern US.

EXHIBIT 13: AGREE OR DISAGREE?

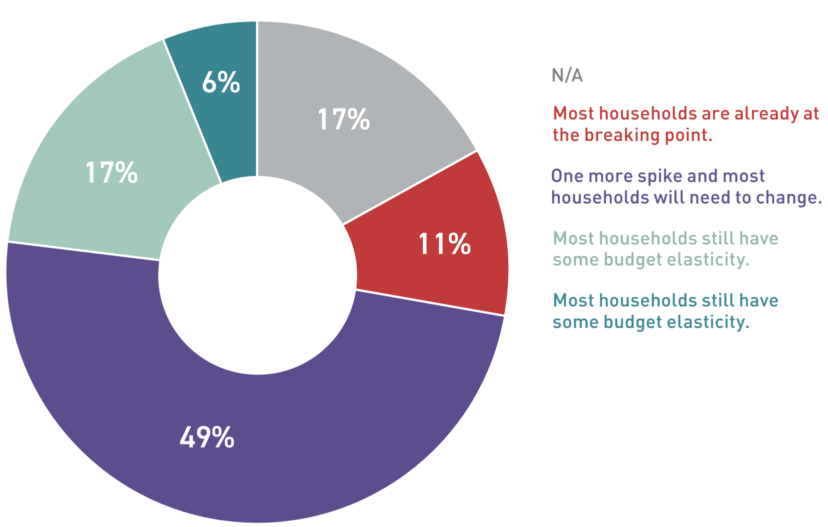
Climate change will lead to out-migration from the south and in-migration to the north over the next decade.



While these various layers of infrastructure have a marked impact on investment decision-making, investors are also contending with the reality of "economic infrastructure" in the US. The consumer-level inflation of the past several years has continued apace or even accelerated in the past year. US employment and GDP data has become partial and editorialized, making it less reliable as an objective measure of economic health. And US debt continues to grow, putting increased stress on homeowners.

As shown in *Exhibit 14,* US households are running out of room. Investors believe that nearly 60% of households are either at the breaking point, or facing one more price spike, before they are compelled to downsize or relocate. These data, coupled with the omnipresent realities and challenges of climate change, could lead to a very different picture of favored markets and property types in the years ahead.

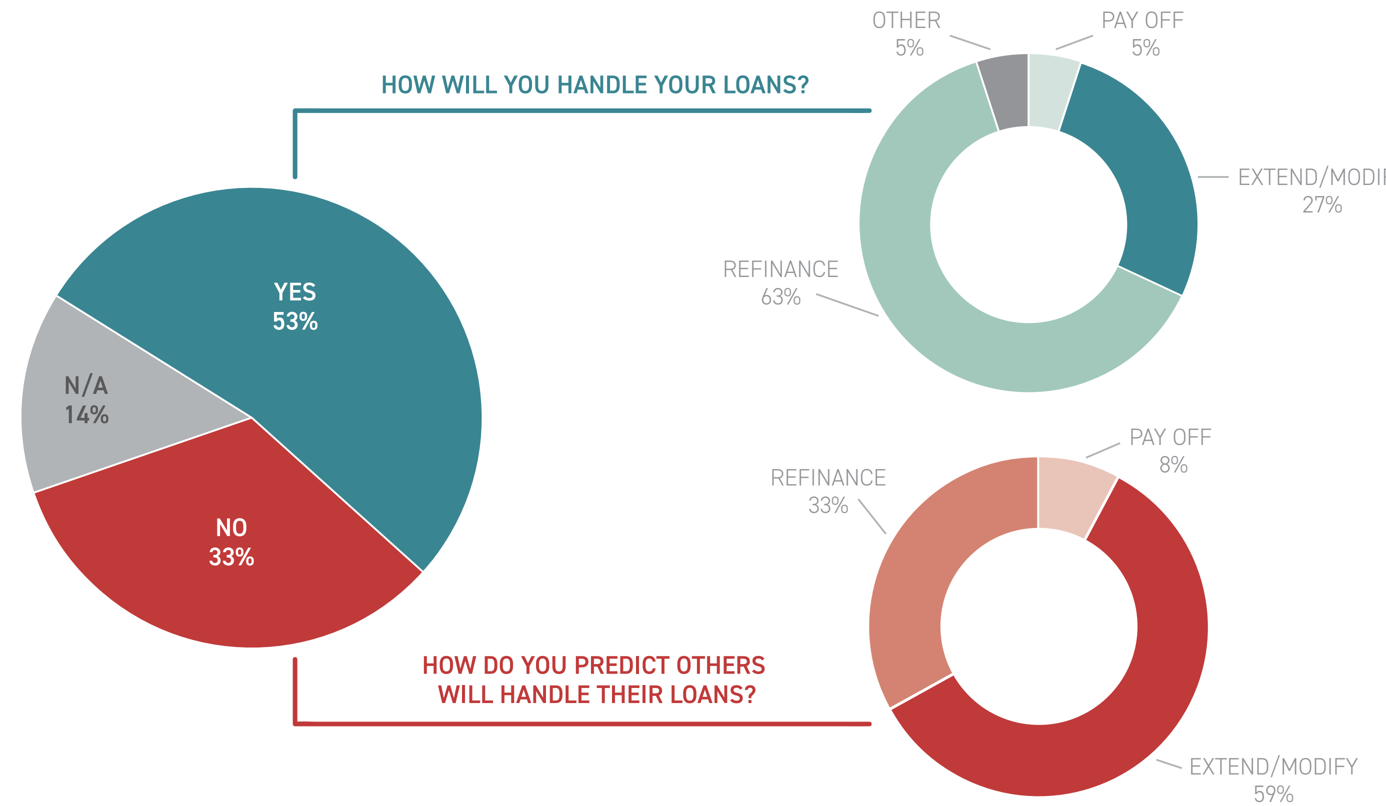
EXHIBIT 14: HOW MUCH FURTHER CAN COMBINED HOUSING, UTILITY, AND INSURANCE COSTS RISE BEFORE TYPICAL US HOUSEHOLDS ARE FORCED TO DOWNSIZE OR RELOCATE?



LOANS AND DEBT

Over the past several years, commercial real estate prognosticators have forecasted a coming storm of maturing debt in real estate for 2026, so the survey asked respondents if (and how) they are handling their own loans for the coming year, as shown in *Exhibit 15*.

EXHIBIT 15: IS YOUR FIRM HOLDING ANY LOANS THAT ARE EXPIRING IN 2026? IF YES, WHAT PLANS DO YOU HAVE FOR THOSE LOANS? IF NO, HOW DO YOU PREDICT MOST WILL HANDLE THEIR LOANS?

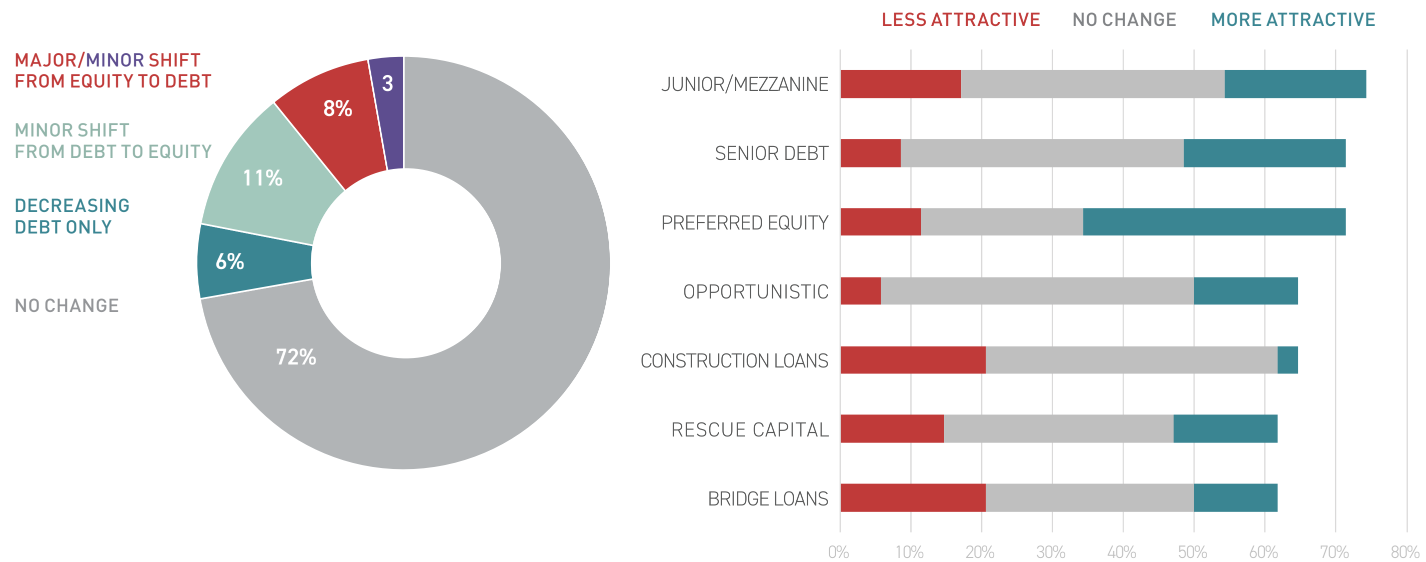


Investors believe that nearly 60% of households are either at the breaking point, or facing one more price spike, before they are compelled to downsize or relocate.

Around 53% of respondents are holding debt that is indeed expiring in the coming year, and nearly two thirds of those with maturing debt (63%) are planning to refinance those loans. Another 27% will be extending or modifying their loans, and only 5% have plans to pay off those loans. These numbers differ from how those firms *without* maturing loans in 2026 (33%) forecast how the industry will be treating maturing loans in general, with nearly 60% expecting some form of extension or modification.

Similarly, as shown in *Exhibit 16*, there do not seem to be any major plans for firms to shift from equity to debt (or vice versa) in the year ahead. Nearly 75% of firms are making no changes to their debt and equity balance, with 11% shifting some equity to debt, and another 11% shifting the other direction. Preferred equity is the favored option by far, followed by various forms of senior and mezzanine debt.

EXHIBIT 16: OVER THE NEXT 12 MONTHS, WILL YOU BE MAKING ANY SHIFTS FROM EQUITY TO DEBT (OR VICE VERSA)? HOW ATTRACTIVE DO YOU FIND US REAL ESTATE CREDIT STRATEGIES THIS YEAR?



BEYOND 2026

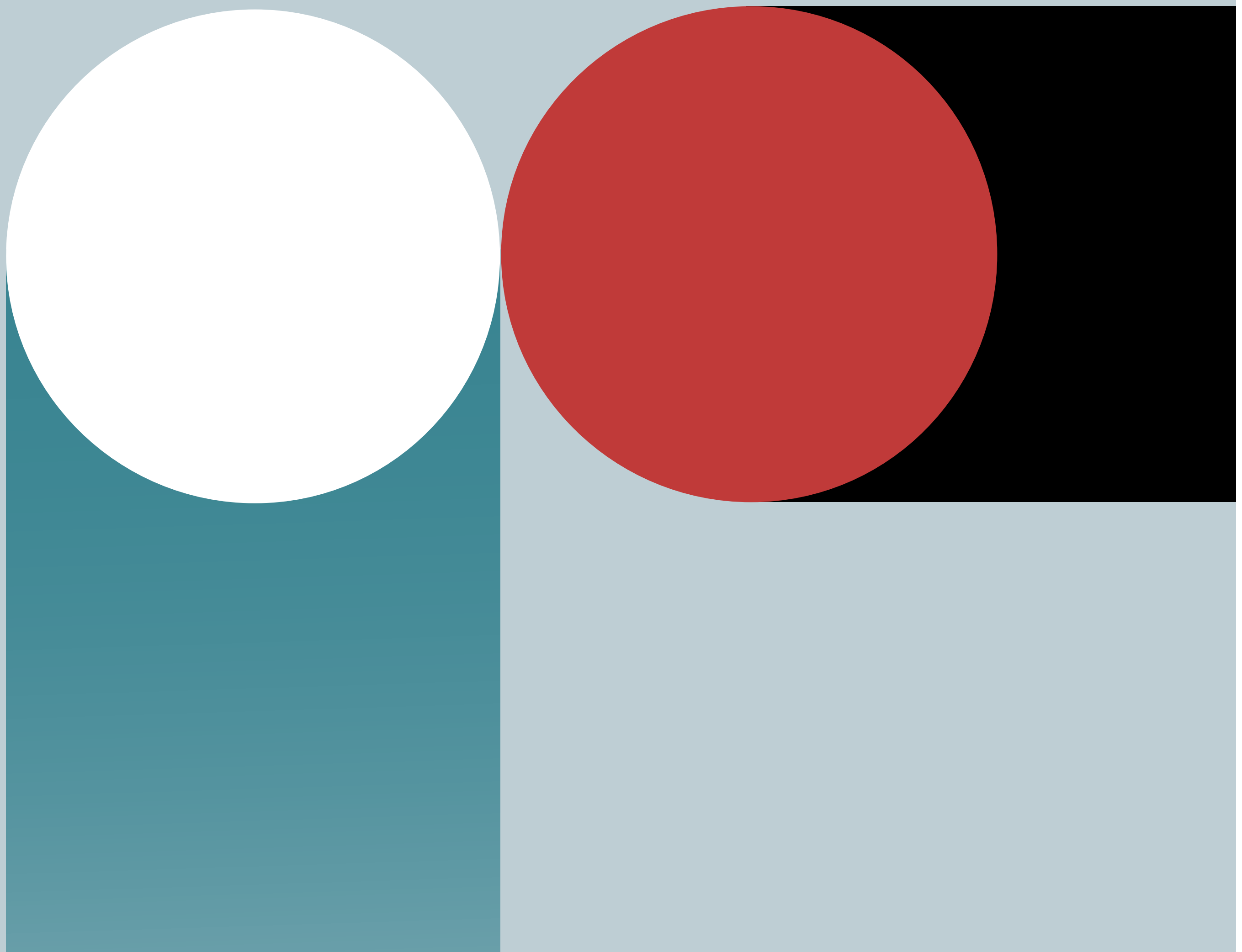
While the AFIRE survey emphasizes some informed optimism about the future of investment into the US, it's important to recognize how the national political atmosphere in the US (and resulting volatility in the geopolitical climate) is forcing some investors to rethink strategy and risk. For example, Canadian Prime Minister Mark Carney's remarks at Davos in January 2026 give new gravitas to the concept of former "middle powers" (e.g. Canada, Australia, India, etc.) on a global scale. Some of these nations have been longtime investors into the US, and their decisions in the years ahead—based on some of the insights and forecasts contained in this survey—may very well set the next precedent for the coming era of global investment, and where the US will continue to fit into the mix.

ABOUT THE AUTHORS

Benjamin van Loon is the Editor-in-Chief of Summit Journal.

While the AFIRE survey emphasizes some informed optimism about the future of investment into the US, it's important to recognize how the national political atmosphere in the US (and resulting volatility in the geopolitical climate) is forcing some investors to rethink strategy and risk.

BOOM OR BUBBLE?



Scot Bommarito
Vice President, Research
RCLCO Fund Advisors

William Maher
Director, Strategy and Research
RCLCO Fund Advisors

Andrew Janko
Managing Director
RCLCO Fund Advisors

Amber Hughes
Senior Associate
RCLCO Fund Advisors

Many data center investors have gotten comfortable that demand will continue to grow at a rapid pace in the age of AI. While that may be true, the dramatic supply response taking shape calls for more measured analysis.

Data centers have emerged as a preferred property type among commercial real estate investors in the digital age, especially since the release of ChatGPT in 2022 inaugurated the AI race.[1] Conventional wisdom held that demand tailwinds would keep the sector flying high for years to come, and capital rapidly poured into the space in response. Meteoric demand led to ballooning construction pipelines.

Recently, focus has begun to shift from the attractive demand story to concerns about overinvestment and oversupply. The *Wall Street Journal, New York Times, Economist, and Financial Times* all featured headlines throughout the second half of 2025 questioning whether the data center boom is actually a bubble, akin to the telecom infrastructure bubble of the late 1990s.

This article adds some context to that conversation, estimating the size of the data center supply pipeline and situating it within the broader universe of commercial real estate investment. It finds that the stabilized real estate value of the current US data center supply pipeline is enormous, at roughly $1.8 trillion in our base case, with a wide potential range from $1-$3 trillion. In addition, technology companies will spend an additional $1-$2 trillion on servers and other computing equipment.

There are multiple risk factors associated with raising and spending this enormous pool of capital. The three main ones that we focus on include:

1. **Real estate capital** markets may face challenges in securing sufficient capital to fund the data center pipeline and absorb its stabilized value at today's market expectations.
2. **Tech companies forecast aggressive capital expenditures** on data center infrastructure, but it is uncertain how much of that spending is for the real estate itself and whether companies can maintain their recent spending paces.
3. **AI does not generate meaningful revenues today.** If revenue growth remains slow, tech stock prices may fall, leaving companies overextended on their data center commitments and leading to a wave of sublease space.

Given these risks, data center investors should exercise caution in their development strategies and investment assumptions, particularly on expected exit valuations and timing.

SIZING THE SUPPLY PIPELINE

As a relatively new property type, information on the data center sector is still limited. Because of this, estimates of the existing data center inventory in the US vary, but they are generally around 40 gigawatts (GW),[2] including both colocation and hyperscale segments.[3]

There is much less certainty about the future supply pipeline. Wood Mackenzie, a global research and consultancy group, reported tracking 134 GW of proposed data centers in the US in mid-2025. This represents a staggering 3.3x the existing inventory. The entirety of that pipeline is unlikely to deliver over the next several years due in large part to power constraints. Also, most data center development is built to suit, limiting supply to actual tenant demand. As such, 134 GW serves as our high scenario for data center supply expansion. For our low scenario, we use the average new demand forecast for data centers through 2030.[4] This comes to 80 GW of supply to meet new demand. Our base case data center supply outlook is the midpoint of 107 GW.

One of the big questions about data centers is whether there will be enough capital to fund future development and absorb stabilized values. To estimate the market value of the data center pipeline, we assume construction costs ranging from $10 million/MW to $12 million/MW, development yields-on-cost of 8-10%, and valuation cap rates of 5.5-6.5%, as shown in *Exhibit 1* below. Yields and cap rates vary between hyperscale and colocation data centers, but the above figures are reasonable estimates for the overall sector. These assumptions imply a roughly $1.8 trillion stabilized valuation of the current data center pipeline in our base case, ranging from $1-$3 trillion in our low and high scenarios.

A global research and consultancy group, reported tracking 134 GW of proposed data centers in the US in mid-2025.

EXHIBIT 1: ESTIMATED VALUE OF US DATA CENTER PIPELINE

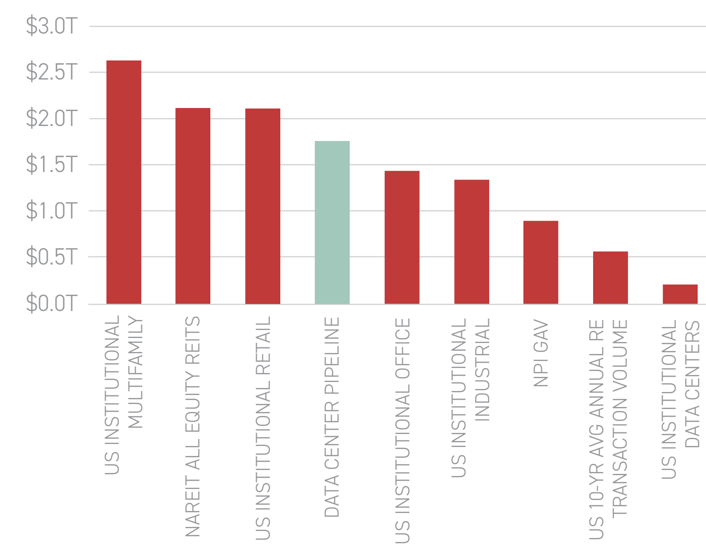
DATA CENTER SUPPLY PIPELINE	LOW	BASE	HIGH
Power Required (GW)	80	107	134
Cost per MW	$10.0 M	$11.0 M	$12.0 M
Total Cost	$800 B	$1,177 B	$1,608 B
Yield on Cost	8.0%	9.0%	10.0%
Annual Revenue (NOI)	$64 B	$106 B	$161 B
Market Cap Rate	6.5%	6.0%	5.5%
Market Value (2025 USD)	$985 B	$1,766 B	$2,924 B

Source: RFA assumptions and calculations, Wood Mackenzie, Deloitte, BCG, McKinsey, Bain

REAL ESTATE CAPITAL

To put the estimated total market value into perspective, Nareit estimates that the enterprise value of the entire publicly traded REIT universe is $2.1 trillion *(see Exhibit 2)*. The total market value of the NCREIF Property Index (NPI), a widely used commercial real estate benchmark focused on traditional property types, is just over $900 billion. Clearly, the large size of the US data center pipeline raises the question of whether the institutional real estate market will be able to absorb the projected stabilized value.

EXHIBIT 2: MARKET VALUE OF VARIOUS US PROPERTY TYPES AND STRUCTURES



Sources: NCREIF, MSCI, Nareit, Clarion Partners, Wood Mackenzie

We recognize that data centers will appeal to other investors besides real estate-oriented groups.

Triple net lease and infrastructure investors will likely be attracted to what are often long-term leases with credit tenants. With this diversified investor base, it remains to be seen where average leverage ratios settle for data centers.

Core real estate investors typically utilize about 25-30% loan-to-value financing while net lease and infrastructure investors typically use greater leverage.[5]

In the public markets, REIT LTVs have been fairly stable in the low 30% range over the last decade, averaging 33%. In 2025, the two publicly traded data center REITs averaged slightly lower LTVs of 25-30%, while net lease REITs had 35-40% leverage. Finally, non-traded REITs generally use about 50% leverage. LTVs of 25-50% on the data center pipeline would imply $0.9-$1.3 trillion of equity needed in our base case. In practice, it will likely be a range of investors that participate in data center investments, but the availability of sufficient equity remains unclear.

TECH CAPITAL

In addition to real estate capital requirements, tech companies will also need to spend an enormous amount of capital to develop their data center infrastructure. Morgan Stanley estimates that Big Tech companies will spend around $1.4 trillion on data centers through 2029, representing an annual pace of $350 billion. Recent earnings reports provide some support for that estimate.[6]

In the first three quarters of 2025, capital expenditures totaled approximately $280 billion across Amazon, Microsoft, Alphabet, and Meta, on track to reach $370 billion for the year. Still, questions remain about whether this pace of capex is sustainable, particularly if stock prices fall or earnings outlooks decline. It is also uncertain how much of this data center spending is destined for investment in the physical plant of the real estate compared to other costly network infrastructure (e.g., servers, semiconductors, power generation, and other networking equipment). The main point is that the huge amount of capital required to fund the data center pipeline may not be readily available from data center tenants.

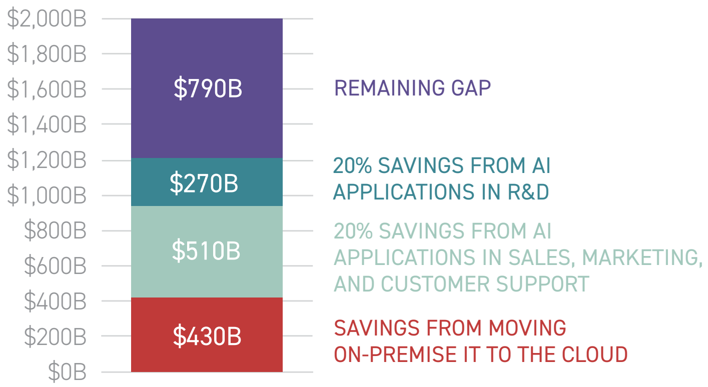
TECH REVENUE

AI revenue limitations could also constrain the amount of capital tech companies have available for data center buildouts. Bain estimates that by 2030, $2 trillion in annual AI revenue will be required for AI infrastructure investments to pay off, assuming $500 billion of annual AI infrastructure spending.

According to their analysis *(Exhibit 3)*, even after accounting for the cost savings likely to accrue from AI adoption, the global economy will be nearly $800 billion short of reaching that revenue target. Many AI services do not generate strong revenue streams today. Although most AI companies expect rapid revenue increases in coming years, it remains to be seen how sensitive users will be to the pricing of these services.

AI companies' ability to demonstrate very rapid revenue growth will determine their ability to finance expansion of their data center infrastructure.

EXHIBIT 3: ANNUAL REVENUE NEEDED FOR DATA CENTER CONSTRUCTION (2030)



Source: Bain & Co.

The outlook for data centers is closely tied to tech companies' stock prices and earnings outlooks. If tech capital availability declines or revenue growth proves sluggish, the sector is likely to soften. The most acute risk is that hyperscalers' stock prices decline, leaving them overextended on their data center commitments and forcing them to sublease their data center space.

WHERE DOES IT GO FROM HERE?

Many data center investors have gotten comfortable that demand will continue to grow at a rapid pace in the age of AI. While that may be true, the dramatic supply response taking shape calls for more measured analysis. The sheer volume of capital required to finance data centers' accelerated pipeline growth and absorb stabilized values at today's market expectations presents meaningful capital risks to investors.

Having $1.8 trillion of data centers entering the market could weigh heavily on real estate equity capital's ability to absorb the supply without activating some new sources of demand or compromising on price. Competition on development yields to win tenants and less attractive construction financing may lead to disappointing returns, as could meaningful cap rate expansion and timing delays. For the portion of the pipeline that does not deliver, some land investors may be left holding the bag.

It will likely take several years to know if we are in a data center boom or bubble. In the meantime, investors should focus on projects with near-term roadmaps to power and stabilization.

Finally, given the sheer size of the pipeline and the potential capital supply/demand imbalance, investors should be cautious in their expectation of exit valuations and timing on developments.

Having $1.8 trillion of data centers entering the market could weigh heavily on real estate equity capital's ability to absorb the supply without activating some new sources of demand or compromising on price.

ABOUT THE AUTHORS

Scot Bommarito is Vice President, Research; William Maher is Director, Strategy and Research; Andrew Janko is Managing Director; and Amber Hughes is Senior Associate for RCLCO Fund Advisors, which provides customized, aligned, and executable real estate advisory and investment management solutions to institutional investors.

NOTES

[1] See ULI's Emerging Trends in Real Estate 2025 and IREI's 2025 Institutional Real Estate Investor Trends report.

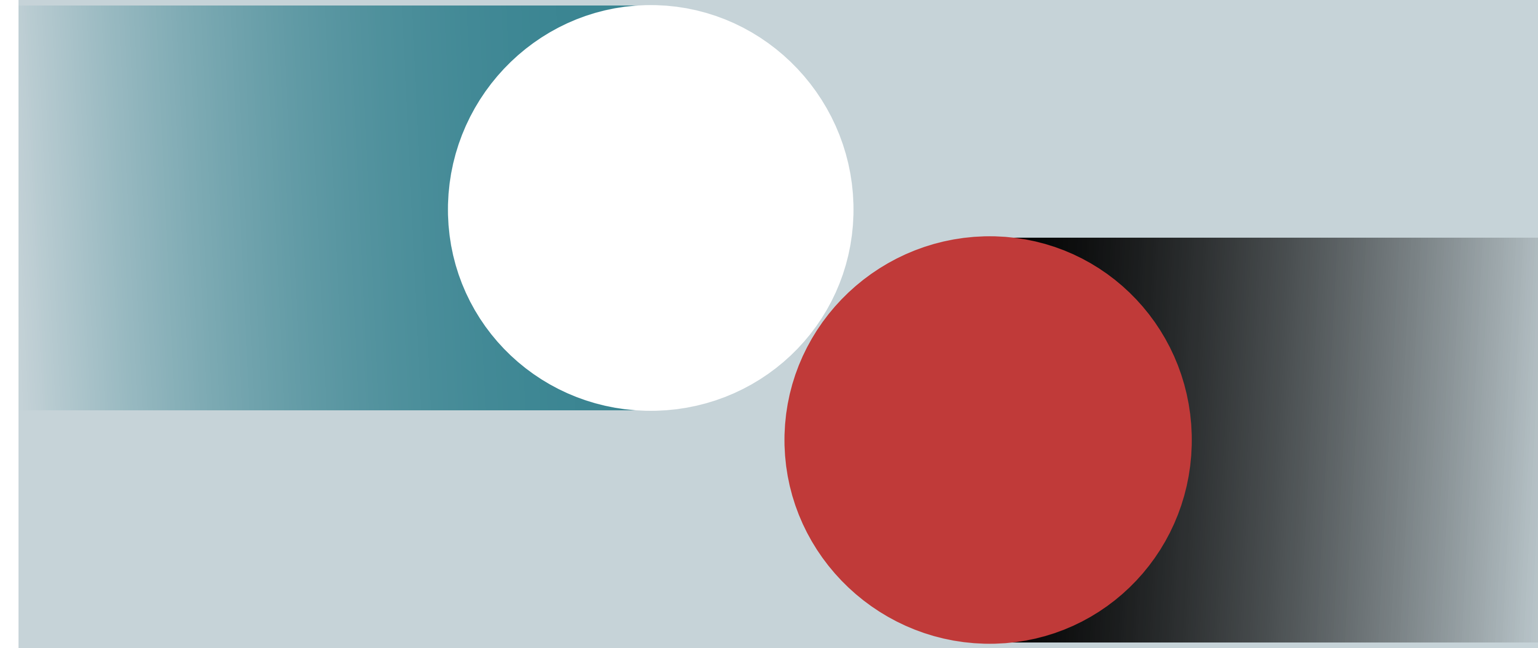
[2] See MSCI. Unlike other property types, data centers are sized by power not by square footage.

[3] Cloud / hyperscale data centers are single-tenant facilities that cater to the scalable applications revolving around the cloud, big data, or distributed storage; multitenant / colocation data centers accommodate multiple companies that lease space within the data center.

[4] New demand forecasts come from Deloitte, BCG, McKinsey, and Bain.

[5] As of 2025 Q3, LTVs in the NCREIF Fund Index – Open End Diversified Core Equity (NFI-ODCE), a commonly used industry benchmark among core real estate investors, averaged 26%.

[6] See "Big Tech has built the future. Now it has to deliver on the present" in Quartz, visited on 10/29/2025 and "When AI Hype Meets AI Reality: A Reckoning in 6 Charts" in *The Wall Street Journal*, visited on 12/1/2025.



It will likely take several years to know if we are in a data center boom or bubble. In the meantime, investors should focus on projects with near-term roadmaps to power and stabilization.

AUTONOMOUS INTELLIGENCE

Francis Huang
Co-Founder
Apers AI

Rather than replacing human judgment, automated systems can formalize conviction into adaptive frameworks that evolve alongside market conditions.

Institutional investors are confronting a widening paradox: macroeconomic shocks transmit globally within seconds, yet investment frameworks remain anchored to quarterly review cycles. The mismatch between signal speed and institutional response is growing costlier, particularly for cross-border allocators managing mandates shaped by delayed and localized insight.

This article introduces a strategic architecture for global real estate CIOs—autonomous systems that synthesize macro developments, simulate sector- and asset-level impacts, and continuously validate investment theses. Rather than replacing human judgment, these systems formalize conviction into adaptive frameworks that evolve alongside market conditions.

As global capital navigates rate divergence, policy fragmentation, and volatile cross-border flows, competitive advantage will rest not on static foresight but on dynamic reflection—the capacity to update conviction faster and with greater precision.

THE GLOBAL CIO'S PARADOX

In 2025, the informational edge in global real estate is both abundant and elusive. Massive data availability has not solved the structural lag between macro events and asset-level implications. The global cycle is tightening. Central bank balance sheets have contracted by nearly $12 trillion since 2022.[1]

The Federal Reserve maintains policy rates near 5.25%, the ECB near 4%, and the BOJ has begun a cautious exit from yield curve control.[2] Liquidity fragmentation is now structural, not cyclical.

For a European insurer underwriting US multifamily exposure or an Asian sovereign fund rebalancing toward logistics in the US Sunbelt, shocks travel instantly—yet interpretation remains delayed. A rate signal from Washington can shift credit spreads in the Midwest overnight, while a policy shift in Beijing or Tokyo ripples into capital flows for US data centers days later.

This disconnect reflects a structural inertia in how institutions think. Investment theses, once approved, often outlive their conditions. Quarterly reviews and consultant memos remain dominant feedback loops, while markets evolve daily, reshaped by rate policy, behavioral shifts, and geopolitics.

The result: global investors deploy capital with local conviction but distant information. The solution lies in engineering systems that update belief as quickly as the world changes.

STRUCTURAL FRICTION: INFORMATION DELAY AND STATIC BELIEF SYSTEMS

Institutional capital now circulates faster than the frameworks guiding it. Roughly $1.9 trillion in US commercial real estate debt will mature by the end of 2026, yet most global allocators revisit their sector assumptions quarterly or semiannually.[3]

This lag is embedded in how conviction is built: consultant research, historic precedent, and political consensus. Once institutionalized, these beliefs persist as dogma.

When US fiscal recalibration, climate incentives, or energy policy shifts occur, their localized effects—on logistics rent in Texas or construction spreads in Arizona—are often filtered through interpretive layers before reaching boardrooms in London or Singapore. By the time they do, pricing signals have already moved.

Data abundance compounds the problem. Global investors now track thousands of indicators, yet without contextual prioritization, relevance sorting becomes the bottleneck. Without adaptive infrastructure to triage and test new data, institutions default to intuition and consensus—costly under accelerating change.

FROM DISCRETION TO DESIGN: BUILDING FORMALIZED INVESTMENT INTELLIGENCE

The transition from episodic updates to continuous adaptation requires a new decision substrate.

Historically, thesis formation has been handcrafted—macro narrative at the top, local color at the bottom, refined by experience. Once approved, a thesis becomes a filter rather than a framework for discovery.

Formalized information systems invert this logic. They continuously ingest, simulate, and stress-test incoming information against standing conviction.

For example, a Middle Eastern sovereign's AI engine might simulate how a 25bps rise in US 10-year yields changes the relative appeal of Sunbelt multifamily vs. European infrastructure spreads. Or a Japanese pension's system might model how US Inflation Reduction Act incentives shift CapEx demand for ESG-aligned logistics.

The outcome for these simulations and models is not automation—it's alignment. Systems contextualize macro shifts by mapping them to mandate goals. When policy or sentiment diverges from underlying theses, the system flags friction between belief and reality before it metastasizes into performance drag.

Over time, governance evolves from static compliance to active thesis management—a continuous dialogue between data and conviction.

The recursive process transforms static analysis into living reasoning. Each iteration sharpens confidence metrics, documenting how belief evolves.

THE MACRO–MICRO FEEDBACK LOOP

The power of such formalized systems lies in feedback: connecting macro movement with micro outcomes, then looping that learning back into strategy.

When rate expectations shift, the model recalibrates financing assumptions and cap-rate drift by market. When local leasing data diverges—say, Dallas logistics rents hold steady despite tightening spreads—the system can revise its causal map.

This recursive process transforms static analysis into living reasoning. Each iteration sharpens confidence metrics, documenting how belief evolves.

Crucially, it institutionalizes contrarian discovery. When reality persistently defies consensus—say, strength in secondary data centers or resilience in prime hospitality—the anomaly is recorded, tested, and potentially promoted to a sub-thesis. Skepticism becomes procedural, not personal.

Boards gain an auditable timeline of conviction: when assumptions shifted, under what evidence, and with what confidence. Institutional memory becomes structured intelligence.

DISTANCE, LATENCY, AND THE ADVANTAGE OF REFLECTION

For non-domestic investors, informational decay magnifies with geography. A 25bps Fed move translates instantly into global bond repricing, yet its real estate implications—leasing velocity, credit spread migration—unfold unevenly across regions.

Autonomous systems reconcile these temporal asymmetries by aligning signal velocity with decision cadence. European insurers can recalibrate sector weights within hours; Asian sovereigns can re-rate logistics exposure in Phoenix or Atlanta based on sentiment feeds.

Local insight becomes structured input: leasing data, permitting delays, construction costs—continuously absorbed and contextualized. "Boots on the ground" evolve from anecdote to quantified input.

Operationally, strategy teams move from commentary to calibration. Culturally, organizations shift from defending conviction to governing it.

For non-domestic investors, informational decay magnifies with geography. A 25bps Fed move translates instantly into global bond repricing, yet its real estate implications—leasing velocity, credit spread migration—unfold unevenly across regions.

APPLIED CASE: SIMULATING A FEEDBACK-DRIVEN CORE+ PORTFOLIO

To illustrate, we simulated a Core+ global real estate portfolio inspired by publicly available frameworks from PIMCO Prime Real Estate and MSCI Real Assets. The goal: observe how an autonomous system might behave when new macro data outpaces committee consensus.

Sensing: Context Before Volume

Across a 48-hour data window, the system processed macro releases and sector updates—CPI surprises, OPEC announcements, ESG incentives, and China property headlines. Each signal was scored by its connection to exposure *(Exhibit 1)*.

EXHIBIT 1: PROCESSING MACRO RELEASES AND SECTOR UPDATES

EVENT	MOST AFFECTED SECTOR	URGENCY	PORTFOLIO RELEVANCE
US CPI below expectations	Multifamily; credit	High	Floating-rate risk within US multifamily
China property distress	Logistics; capital flows	Medium	LP appetite and global risk premiums
OPEC+ output boost	Construction; energy	Medium	CapEx relief for energy-intensive ops
EU AI construction incentives	Smart infrastructure	Low	Emerging tailwind for ESG logistics

Source: Apers AI

Interpreting: Mapping Pressure Points

Signals were tested under four macro regimes—disinflationary resilience, soft landing, stagflation-lite, liquidity constraint—each with modeled implications for lending spreads and cap-rate drift. Instead of forecasts, the system produced a map of stress vectors showing where conviction might stretch or hold.

Testing: Friction as Intelligence

Divergence between public and private data was treated as insight.

EXHIBIT 2: CONFIDENCE SCORES AND RESPONSES

SECTOR	SHORT-TERM SIGNAL	LONG-TERM ALIGNMENT	RESPONSE
Data infrastructure	Policy-backed; income-resilient	Positive	Maintain; monitor power constraints
Logistics (US Sunbelt)	Oversupply; capital rotation	Mixed	Trim exposure; refine tenant mix
Office	Primary vs. secondary bifurcation	Weak	Reclassify; no new entry
Hospitality	Limited macro hedge	Fragile	Retire thesis

Source: Apers AI

Revising: The Living Ledger of Conviction

Each thesis was recoded with confidence scores and rationale, creating a traceable record of belief. The entire cycle—analysis, synthesis, reflection—occurred in under 24 hours, rather than what typically takes weeks in traditional formats. The result was not prediction but posture: an institution thinking in motion.

REFLECTION AS INFRASTRUCTURE

For decades, global investors have optimized reaction. In a world where information velocity outpaces process, reaction is no longer enough.

The next advantage is reflective responsiveness: the ability to continuously learn, revise, and re-justify conviction in real time. Systems that absorb volatility and translate it into structured insight will separate those who navigate cycles from those who are trapped by them.

Geography no longer determines informational disadvantage; latency does. And in the next cycle, the edge will not belong to those who predict best, but those who learn fastest. Reflection is not a retreat from conviction—it is its highest form.

ABOUT THE AUTHOR

Francis Huang is a Co-Founder of Apers AI, an AI-powered platform that automates real estate investment research with institutional-grade precision.

NOTES

Illustrative simulation referencing publicly available commentary from PIMCO Prime Real Estate, MSCI Real Assets, and BIS data; no affiliation or endorsement implied.

[1] Board of Governors of the Federal Reserve System, Recent Balance Sheet Trends (Washington, DC: Federal Reserve, 2025).

[2] Congressional Research Service, "The Fed's Balance Sheet and Quantitative Tightening," CRS IF12147 (Washington, DC: CRS, 2025).

[3] MSCI Real Assets, "Real Capital Analytics / Debt & Distress Data," Q1 2025.

In the next cycle, the edge will not belong to those who predict best, but those who learn fastest.

A HOME GENOME PROJECT: HOW A CITY LEARNING COHORT CAN CREATE AI SYSTEMS FOR OPTIMIZING HOUSING SUPPLY

Brookings

AI systems can help city decisionmakers optimize housing supply by accelerating data integration and supporting scenario modeling. But human expertise remains crucial to ensuring tangible outcomes.

Cities in the U.S. and globally face a severe, system-wide housing shortfall—exacerbated by siloed, proprietary, and fragile data practices that impede coordinated action. Recent advances in artificial intelligence (AI) promise to increase the speed and effectiveness of data integration and decisionmaking for optimizing housing supply. But unlocking the value of these tools requires a common infrastructure of (i) shared computational assets (data, protocols, models) required to develop AI systems and (ii) institutional capabilities to deploy these systems to unlock housing supply. This memo develops a policy and implementation proposal for a "Home Genome Project" (Home GP): a cohort of cities building open standards, shared datasets and models, and an institutional playbook for operationalizing these assets using AI. Beginning with an initial pilot cohort of four to six cities, a Home GP-type initiative could help 50 partner cities identify and develop additional housing supply relative to business-as-usual projections by 2030. The open data infrastructure and AI tools developed through this approach could help cities better understand the on-the-ground impacts of policy decisions, while also providing a constructive way to track progress and stay accountable to longer-term housing supply goals.

(Note: This article was originally published by Brookings on October 27, 2025. The original can be viewed at brookings.edu/articles/home-genome-project-ai-housing-supply.)

INTRODUCTION

More than 150 U.S. communities now participate in the Built for Zero initiative, a data intensive model that has helped several localities achieve "functional zero" chronic or veteran homelessness and dozens more to achieve significant, sustainable reductions.[1] For instance, Rockford, Illinois, became the first U.S. community to end both veteran and chronic homelessness by establishing a unified command center that used real-time, person-specific data to identify individuals experiencing homelessness and strategically target resources to achieve functional zero.[2] The work has revealed an important formula: pairing real time, person level data integrated across agencies with nimble, cross functional teams can drive progress on seemingly intractable social problems.

Homelessness is typically downstream of shortages of housing supply. In the U.S. alone, there is an estimated 7.1 million unit shortage of homes for extremely low-income renters.[3] But no equivalent playbook, standardized taxonomy, or shared data infrastructure exists to holistically address housing supply at the city or regional level. Developers, school districts, transit agencies, financing authorities, and planning departments each steward partial information and property assets that could translate into expanded housing supply.

Without shared accountability for meeting community housing needs, chronic coordination failure results. Homelessness is one stark result. Individuals and families shuttle between services, attempting to qualify for housing and income assistance while competing for limited housing options. Meanwhile, opportunities to increase housing supply—through repurposing idle land, preserving at-risk units, streamlining development approvals, or other strategies—go unrealized because critical information remains fragmented across agencies or never collected at all.

When attempting to integrate city-level housing data, most cities confront an unsatisfying choice: license an expensive proprietary suite, outsource a one-off dashboard to consultants, or manually assemble spreadsheets in-house. Some jurisdictions run dual systems—an official internal view and a vendor dashboard—further fragmenting workflows and complicating institutional learning. Among the commercial vendors trying to fill the information void are those offering proprietary suites with parcel visualization, market analytics, scenario modeling features, and/or regulatory particulars. Many are built on public data but packaged behind paywalls that limit transparency, interoperability, and reuse. Several also only cover a handful or a finite number of geographies.

Without open interfaces, common data standards, or accessible tools, even well-staffed departments struggle to maintain the continuous data integration that drives real outcomes. The manual processes that have enabled breakthrough successes require dedicated teams and sustained funding that most cities cannot maintain through personnel changes and budget cycles. Equally important, fragmented or proprietary data ecosystems can persist because existing arrangements benefit from the opacity—whether by limiting public scrutiny of how housing assets are managed or, as recent cases against rent-setting platforms illustrate, by enabling landlords and data vendors to leverage nonpublic information in ways that reinforce market power and reduce competition.[4] What emerges is a patchwork of partial views—each typically anchored in narrow mandates and reinforced by opaque systems that resist integration.

While many cities have prototyped tools and surfaced effective approaches to optimizing their housing assets despite these challenges, sustaining and scaling them across contexts requires more than heroic individual efforts. The path forward to unlocking hidden housing supply at scale lies in durable data pipelines, cross-functional teams with clear shared goals, and shared data and playbooks that reduce the transaction costs of doing this important work city-by-city.

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AI'S POTENTIAL AS AN ACCELERANT

Recent breakthroughs in generative AI, computer vision, and geospatial analytics—many of which have only been commercialized since 2023—drastically lower the cost and increase the speed of data integration and analytics.[5] For housing data, early pilots show that machine-learning models can rapidly reconcile parcel IDs across assessor, permit, and utility records; detect latent development sites—such as vacant lots, single-story strip malls, or underutilized garages—by triangulating land-use data with computer-vision analysis of aerial imagery; and forecast supply impacts of zoning tweaks or financing incentives across thousands of parcels.[6]

However, lessons from Built for Zero and elsewhere would suggest that new forms of technical automation must be paired with common infrastructure and institutional capabilities to drive measurable outcomes. For instance, meta-analyses of cross-agency Integrated Data Systems (IDS) in the U.S. are associated with better targeting and continuous program improvement when paired with governance, standards, and security protocols.[7]

Early experiments applying machine learning (ML) to housing data (discussed in the next section) suggest that computation alone does not eliminate complexity. Legal nuance, inconsistent document formats, and context-specific exceptions routinely defeat even state-of-the-art data integration and machine learning techniques, requiring manual verification and domain expertise. Even when AI delivers efficiency gains, those improvements alone do not build housing. Without clear protocols, shared taxonomies, and durable governance that elevates domain expertise and supports capacity building, even efficient AI tools risk automating the wrong tasks—or failing when local conditions shift.

The core challenge of optimizing housing supply is not simply an absence of tools, but the absence of a common and underlying infrastructure, taxonomy, institutional capacity, and incentives for transparent data sharing needed to support computational tools.

THE CASE FOR A CITY-LEVEL "HOME GENOME PROJECT"

Against this backdrop, a coalition of city housing leaders, community-development practitioners, technologists, and funders gathered in "Room 11"—a 17 Rooms flagship working group aligned with Sustainable Development Goal 11 for sustainable cities and communities—to explore how to harness AI tools to increase housing supply.[8] In a rapid sequence of virtual meetings, the group identified data gaps, transaction costs, and governance hurdles that stall housing production and allocation and identified the key technical and institutional ingredients required to harness AI's potential value for local decisionmakers.

Drawing on these insights, this memo suggests standardizing and integrating city-level public data and capabilities should be a primary focus for leveraging AI's potential value. A concerted international movement, starting with a learning network of cities, could generate the necessary shared inputs required to develop AI systems (a shared data model, data standards and datasets, and machine learning models) and the playbooks for the infrastructure, human capacities, and institutions needed to operationalize AI systems for optimizing city-level housing supply.

As discussed in Room 11 meetings, the siloed status quo resembles biomedical research before the step-change advances in data sharing and management initiated through the Human Genome Project. By mandating 24-hour public release of DNA sequences across participating laboratories, the HGP's Bermuda Principles ignited a wave of global discovery that later underpinned AI-driven feats like CRISPR and AlphaFold.[9] When researchers openly shared SARS-CoV-2 genomic sequences in early 2020, it enabled parallel vaccine development that would have been impossible under traditional closed models.

Housing needs an analogous shift—a "Home Genome Project" (Home GP)—defined by shared data standards, open pipelines, and reciprocal learning norms that convert local experiments into a global commons of actionable knowledge. A de-siloed approach to housing data infrastructure and shared learnings could also provide a more structured brokering mechanism for connecting front-line teams with the resources, expertise, and partnerships they need to scale their solutions.

Whereas DNA data is inherently structured and universally interpretable, housing data reflects diverse, locally determined rules and contexts, making integration and standardization far more complex. Achieving a Home GP will require careful, collaborative design of data models and standards from the outset, ensuring consistent definitions, quality inputs, and governance frameworks that can sustain large-scale, cross-jurisdictional use.

By coupling open data standards and city-contributed datasets and ML models with peer-to-peer capacity building, Home GP could help catalyze collaboration, learning, and innovations for increasing housing supply above baseline in 50 partner cities by 2030. Like the Human Genome Project, Home GP would be designed to treat data as critical infrastructure and collaboration as a force multiplier for AI system development. While the start-up phase of Home GP would likely focus on larger cities, the development of the approach would enable integration of data from communities of every size and type—including towns, villages, and counties with unincorporated areas.

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HOME GP FOUNDATIONS: A CROSS-SECTION OF CITY-LEVEL APPROACHES AND PROGRESS

Room 11 discussions unearthed a rich cross-section of city-level experimentation across three key barriers to housing supply. Several cities in the U.S. and globally are making noteworthy inroads. Teams are integrating data and prototyping digital tools to help map existing land assets, simulate the effects of policy interventions on development, and detect and forecast vacancies.

Different cities possess different raw ingredients—data, models, talent, or political capital—to influence decisionmaking for optimizing housing supply. Cities with massive metropolitan areas like Atlanta are developing bespoke solutions, while data and resourcing constraints faced by smaller cities like Santa Fe (U.S.) are developing more nimble and leaner solutions.

Mapping existing land assets and development proposals: Atlanta (U.S.) has merged tax-assessor records with other agency spreadsheets into the city's first live map of every publicly owned parcel; its new Urban Development Corporation can now identify and package land deals across departments instead of hunting for records one by one.[10] London (U.K.) leverages its tight regulatory framework to systematically collect and standardize data from multiple organizations, capturing information on roughly 120,000 development proposals annually.[11] This regulatory process creates opportunities for comprehensive data gathering that feeds into what functions as a digital twin of the planning system. The Greater London Authority's planning data map has been accessed 23.4 million times in the past year and serves as the evidence base for public-sector planning across the region.[12] Boston's (U.S.) citywide land audit surfaced a substantial inventory of underutilized public parcels.[13]

These approaches point toward a "digital twin" approach that gives cities real-time insight into how their built environment is changing—helping planners do long-range scenario planning with more accurate, up-to-date information. A tool like this can also strengthen accountability—by transparently tracking new development, cities can measure progress against housing goals (similar to California's Regional Housing Needs Allocation process) and hold themselves responsible for delivering results.[14]

Simulating the effects of policy interventions: Denver (U.S.) is coupling parcel-level displacement-risk models with zoning-and-feasibility simulators so that staff can test how ordinances (like parking minimums or inclusive housing regulations) could impact housing developments before policies reach decisionmakers. Charlotte (U.S.) is moving to automate updates to its Housing Location Tool (an Esri workbook that scores parcel-level properties on development potential based on four dimensions: proximity, access, change, and diversity) and to allow the process to proactively score all parcels and recommend areas for development.[15]

Vacancy detection: Water-scarce Santa Fe (U.S.) is beginning to mine 15-minute water meter readings to flag homes that sit idle for months and explore incentives for releasing those units for rental use—an information loop that turns a utility dataset into a housing-supply radar.

Together this range of efforts shows that cities possess different raw ingredients to accelerate the development of new housing supply. What is missing is the infrastructure to convert these opportunities and one-off accomplishments into standardized, repeatable, and shareable playbooks. Just as the Human Genome Project transformed genomics by creating structured vocabularies for machine readability and cross-jurisdictional collaboration, a similar infrastructure and lexicon for describing and cataloging assets such as parcels, vacancies, and zoning types could unlock the innovation and progress needed to meet the country's urgent housing needs.

Together this range of efforts shows that cities possess different raw ingredients to accelerate the development of new housing supply.

DIAGNOSING THE DECISION PROBLEM IN CITY HOUSING MARKETS

Room 11 meetings surfaced several incentive, capacity, and governance barriers that need to be overcome to secure more housing.

1. DEMAND-DRIVEN SOLUTIONS FOR SURVIVING THE "DASHBOARD VALLEY OF DEATH"

The allure of technology-driven reform is hardly new. Over the past decade, several public funders and technology companies have supported housing dashboards as potentially scalable solutions to generating real-time insights for local decisionmakers.[16] But most, particularly those built top-down, have achieved only limited uptake owing to the fragility of public data and capacity ecosystems underneath them. Where cities have developed their own tools—like Charlotte's Housing Locational Tool—the data pipelines often rely on manual, once-a-year updates. This so-called "dashboard valley of death," a key challenge discussed in Room 11, suggests the need for an alternative strategy to technology development, one where front-line agencies are equipped with common infrastructure and capabilities to self-generate tailored solutions to locally defined problems.

In this vein, a new generation of tools demonstrates that success is possible when technology serves clearly defined user needs. The Terner Housing Policy Simulator, developed by UC Berkeley's Terner Center, for example, models housing supply impacts at the parcel level across 25-30 jurisdictions.[17] By combining zoning analysis with economic feasibility modeling—running multiple pro-formas to assess development probability under different scenarios—the tool provides actionable intelligence that cities like Denver are using to evaluate parking minimum reforms and inclusionary housing policies. Similarly, initiatives like the National Zoning Atlas have achieved traction by tackling a foundational data challenge: digitizing and standardizing the country's fragmented zoning codes, having already mapped over 50% of U.S. land area, including major metros like Houston and San Diego.[18]

2. FRAGMENTED OWNERSHIP AND AUTHORITY

Basic facts about land are often missing. In many local jurisdictions, no single office can confirm which public entity owns which parcel, let alone coordinate how those assets are deployed for housing. In Atlanta, a dedicated central team eventually stitched together assessor files, handwritten ledgers, and transit-authority spreadsheets to build the city's first unified public-land map. Armed with this new data—and inspired by Copenhagen's municipal land corporation—the city established an Urban Development Corporation in 2024 to broker multi-agency approvals and unlock dormant parcels for housing.[19] The exercise surfaced more than 40 developable acres that had been hiding in plain sight. Fifty new development projects are underway.

3. CAPACITY BOTTLENECKS

Most local housing departments operate with lean staffing and tight budgets; larger cities may command more resources, but must navigate correspondingly larger and more complex operating environments. Smaller communities may not have data or geospatial departments, or may even have difficulties accessing or understanding their own regulations, including zoning. Either way, the personnel and financial headroom required to sustain continuous data collection, community engagement, and policy iteration remain in short supply. Denver's team, for example, is forced to guess how inclusionary-housing tweaks will land on developers' pro-formas—an impossible task without automated modeling support.

WHAT AI CAN—AND CANNOT—DO FOR HOUSING SUPPLY

In theory, AI systems can be leveraged to assist in data integration processes by reconciling parcel tables, flagging underused land, and running zoning simulations in minutes rather than months. Successful implementation of these functions could, in turn, help free up local teams to focus on higher-impact activities that move from identifying potential supply to building supply—such as creating new agencies like Atlanta's Urban Development Corporation, reviewing property records that automated systems cannot interpret, and engaging communities in housing production efforts.

In practice, however, there are many constraints when attempting to use ML to integrate data and automate inference. As learned in Room 11 conversations, the National Zoning Atlas' two-year collaboration with Cornell Tech, backed by NSF funding, found that even leading ML models could not reliably parse zoning codes.[20] Despite processing thousands of pages of text, researchers concluded that legal nuance, inconsistent formatting, and local exceptions rendered zoning documents effectively unreadable by AI alone. Atlanta's experience mapping public land similarly revealed that property ownership records required manual verification—automated systems failed to detect transactions between public agencies that did not trigger tax records. In Charlotte, displacement monitoring still depends on human review to distinguish qualified transactions from multi-parcel or otherwise unqualified sales that the model can't classify automatically. Collectively, these examples demonstrate that civic data often embeds ambiguity and context-specific nuance that resist full automation.

In practice, there are many constraints when attempting to use ML to integrate data and automate inference.

A STRATEGY FOR SUPPORTING CITIES TO LEVERAGE AI FOR HOUSING SUPPLY

Room 11 conversations validated the hypothesis that developing more standardized city-level data infrastructures and institutional capabilities will help unlock more opportunities for AI systems to be used to optimize housing supply. Local staff with context and domain expertise are needed to design the inputs and ground-truth the outputs of AI systems, while interpreting and using those inputs in real-world negotiations with developers, residents, and finance authorities. In short, algorithms can deliver speed; local knowledge and policy judgment can turn speed into supply.

To harness this potential, Home GP's proposed learning cohorts could be designed to convert isolated pilots into shared public infrastructure. In the same way that the Human Genome Project transformed biomedical research through open datasets, protocols, and collaborative standards that supported downstream AI-enabled technologies like CRISPR, Home GP could create the data commons and institutional capacities cities need to support AI systems for optimizing housing supply.

This approach builds three core functions:

- **"Vertical ladders"** that help each city climb from basic data auditing and management to increasingly sophisticated tools and competencies in its chosen domain. For example, following its first public land use dataset, Atlanta was able to add more and more sophisticated layers of data (e.g., zoning and market data), which in turn enabled more sophisticated inference informing project development.
- **"Horizontal branches"** for peer exchange: The city that perfects a vacancy-detection model can lend that module as a template for others to adapt while borrowing, say, a permitting-analytics script in return.
- **Cross-sector brokerage** that connects city teams with technical experts, funders, and peer cities—facilitating the partnerships and resource flows essential for turning pilots into sustainable programs. This brokering function, exemplified by organizations like Community Solutions in the homelessness space, has proven critical for scaling local innovations.

The initial phase of Home GP would develop two pillars of support architecture: (1) shared computational tools (data definitions and standards, datasets, and ML models) that can support context-calibrated AI applications for data integration, pattern recognition, and forecasting housing supply; and (2) an institutional readiness playbook that helps any jurisdiction develop institutional capacities for data integration and AI system deployment.

1. **Shared computational tools:** Initial Home GP efforts to develop shared resources might include data integration standards and tools, integrated city-level datasets (land use, zoning, market data), and historical time series data (on either actual as-built conditions or policies) that can be federated and used to train ML predictive models and develop applications. Innovative approaches to inference developed in specific contexts (e.g., Santa Fe's water use proxy data for vacancies) could be made available for adaptation to other relevant contexts.
2. **Institutional readiness playbook:** Room 11 discussions identified at least five institutional enabling conditions for harnessing the potential value of AI tools for which playbooks could be developed through a community-of-practice model:

a. **Impact-focused mandate.** A concrete, numeric, and time-bound housing supply target shared across city-level stakeholders and tied to public reporting—e.g., "add 20 percent versus baseline affordable units by 2030."

b. **Empowered cross-functional teams.** Land bank, planning, IT, community liaison—everyone who touches parcels or permits at one table. As in Denver, Atlanta, and Santa Fe, often these mission-driven, cross-functional teams sit within the mayor's office.

c. **Minimum viable data foundations.** A clean parcel table, zoning layer, and permitting feed that update on a regular cadence.

d. **Technical literacy and readiness.** Analysts, organizers, and dealmakers who can translate model outputs into negotiations with developers and residents.

e. **Equity guardrails.** Bias audits, open-source code, and transparent processes that protect against unintended harm. Denver has already begun developing internal equity review processes as part of its housing data modernization efforts, while Charlotte is focusing on transparent use of displacement data to monitor outcomes.

While cities serve as the natural starting point for this work, the long-term sustainability of these systems may require thinking beyond municipal boundaries. London's success in collecting standardized data from roughly 120,000 development proposals annually stems from national legislation—the Town and Country Planning Act—that creates regulatory leverage for data collection. This demonstrates how state and federal policy frameworks can enable the data standardization that cities need. Similarly, Metropolitan Planning Organizations (MPOs) could coordinate cross-jurisdictional housing strategies, while state agencies might maintain regional databases and technical infrastructure at scale. The institutional readiness playbook should therefore anticipate how governance structures can evolve from city-led experiments to more distributed models that leverage policy frameworks and regional coordination.

Building an integrated and scalable national or international infrastructure may require specialized partners and/or a unified platform with capabilities no single organization currently possesses.

NEXT STEPS AND OPEN CONSIDERATIONS

Home GP—hosted initially by a working group of Room 11 organizations—could convene four to six U.S. cities as a proof-of-concept cohort over 12 months. The ultimate goal is to produce open dataset layers released under permissive licenses, reusable AI modules (e.g., for vacancy detection, land-assemblage scoring), and implementation playbooks covering procurement language, governance, and community engagement. A "story bank" could document use cases that demonstrate what cities can achieve with better data.

Cities would select an appropriate peer-learning format, for example, rotating as lead developer and fast follower can ensure that expertise diffuses rather than concentrates; while a parallel pilot approach might allow cities to adapt quickly to local conditions.

Critically, the working group would also consider the technical and institutional architecture requirements for data and model standardization. The National Zoning Atlas discovered that standardizing data across jurisdictions was among its consultants' most technically complex projects. Building an integrated and scalable national or international infrastructure may require specialized partners and/or a unified platform with capabilities no single organization currently possesses.

To reach this proof-of-concept stage, a prior planning phase would likely be needed to develop a detailed implementation roadmap, including governance structure, data sharing protocols, and potential funding models. This phase could convene municipal Chief Technical Officers, or equivalent, and housing leaders from those cities—bringing together those with technical expertise, housing expertise, and local commitment to investment in housing innovation capacity.

CHOOSING TO BUILD TOGETHER

Local leaders already possess many important raw ingredients—granular parcel data, courageous front-line teams, and a new generation of AI tools—to close information gaps that have long stymied housing production. The key need is for civic leaders, government partners, philanthropy, and investors to knit those ingredients into a durable, shared infrastructure— analogous to scientific open-data protocols. By treating data pipelines and AI models as shared public infrastructure—and by learning in public through a cohort architecture that amplifies shared competencies and brings relevant stakeholders together—cities can unlock the transformative potential of AI to close housing supply gaps and make homelessness rare and brief. The goal—50 cities each identifying and unlocking more homes than the currently projected new supply by 2030—is ambitious yet reachable.

ABOUT THE AUTHORS

This memo was produced by Room 11, a working group linked to Sustainable Development Goal 11 on making cities and human settlements inclusive, safe, resilient, and sustainable as part of the 17 Rooms global flagship in 2025. 17 Rooms is a platform for advancing the economic, social, and environmental priorities embedded in the world's 17 Sustainable Development Goals. The initiative is co-hosted by the Center for Sustainable Development at the Brookings Institution and The Rockefeller Foundation. In 2025, each Room was asked to develop and advance a big idea—a practical action or mechanism that could make a material difference to some aspect of the world's 17 SDG outcomes by 2030.

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One of the room members, Sara Bronin, is the founder, CEO, and president of The National Zoning Atlas, housed within a 501(c)(3) nonprofit organization, Land Use Atlas, Inc.

NOTES

[1] https://community.solutions/built-for-zero/the-movement/

[2] https://community.solutions/case-studies/case-study-rockford-illinois-reaches-and-sustains-functional-zero-for-veteran-and-chronic-homelessness/

[3] https://nlihc.org/news/nlihc-releases-gap-2025-shortage-affordable-homes

[4] https://www.justice.gov/archives/opa/pr/justice-department-sues-realpage-algorithmic-pricing-scheme-harms-millions-american-renters?utm_source=chatgpt.com

[5] https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai-2024; https://www.lifewire.com/metas-new-segment-anything-model-for-identification-is-a-big-deal-experts-say-7481367; https://www.deloitte.com/us/en/about/press-room/deloitte-launches-geospatial-and-ai-scenario-planning-monitoring-platform.html

[6] http://urban.org/urban-wire/we-need-better-zoning-data-data-science-can-help; https://www.shovels.ai/blog/integrating-parcel-and-permit-data-in-partnership-with-regrid; https://www.igd.fraunhofer.de/en/media-center/customer-magazine/artificial-intelligence-accelerates-identification-of-suitable-land-for-housing.html

[7] https://pmc.ncbi.nlm.nih.gov/articles/PMC9693710/

[8] https://www.brookings.edu/projects/17-rooms/

[9] https://dukespace.lib.duke.edu/communities/9bf2e54b-6912-407e-90a7-22213ff0c90a; https://ssir.org/articles/entry/human-genome-project-artificial-intelligence; https://wellcome.org/news/human-genome-project-new-era-scientific-progress; https://deepmind.google/discover/blog/putting-the-power-of-alphafold-into-the-worlds-hands/

[10] https://www.atlurbdevco.com/

[11] https://www.london.gov.uk/programmes-strategies/planning/digital-planning/planning-london-datahub; https://www.london.gov.uk/who-we-are/governance-and-spending/promoting-good-governance/decision-making/assistant-directors-decisions/add2691-planning-london-datahub-data-quality-improvement

[12] https://apps.london.gov.uk/planning/

[13] https://www.boston.gov/departments/housing/citywide-land-audit

[14] https://planning.lacity.gov/odocument/6e79ba73-689a-4f6f-95e4-057dd85b5b57/What_to_Know_about__RHNA_Site_Selection_and_Rezoning.pdf_

[15] https://community.charlottenc.gov/pages/housing-locational-tool

[16] https://en.wikipedia.org/wiki/Sidewalk_Labs

[17] https://www.ternerlabs.org/data-solutions-lab

[18] https://www.zoningatlas.org/

[19] https://www.atlurbdevco.com/

[20] https://www.zoningatlas.org/research

By treating data pipelines and AI models as shared public infrastructure—and by learning in public through a cohort architecture that amplifies shared competencies and brings relevant stakeholders together—cities can unlock the transformative potential of AI to close housing supply gaps and make homelessness rare and brief.

C-PACE IN THE STACK

Jonathan Seabolt
CEO
Clearwater PACE

What began as a municipal policy tool for energy upgrades has matured into an institutional credit product embedded directly in the capital stack.

Commercial Property Assessed Clean Energy (C-PACE)— a state policy-enabled financing mechanism that allows owners and developers to make energy-related building upgrades, support new construction, and access renewable energy—has progressed from early policy experimentation to an emerging institutional asset class.

Initially developed to support energy-efficiency upgrades at the municipal level, it has become a scalable capital source embedded directly within the commercial real estate finance ecosystem. C-PACE ties repayment to the property rather than the borrower and uses a tax assessment mechanism to deliver long-term, fixed-rate, non-recourse financing that aligns with the useful life of the improvements.[1]

THE STRUCTURAL SHIFT TOWARD LONG-TERM, PROPERTY-BASED FINANCE

The structure of C-PACE has proven particularly relevant in a market defined by elevated interest rates and constrained liquidity. By funding 100% of eligible capital expenditure costs, generally up to 40% or more of total project costs or 35% of its stabilized value, C-PACE reduces the weighted average cost of capital (WACC) and allows sponsors to reallocate capital more efficiently. Clearwater PACE, a leading institutionally capitalized C-PACE lender, notes that the product has become a standard part of modern capital stacks, reducing senior lender exposure while improving their debt yield and improving overall project viability.[2]

For investors, C-PACE offers long-duration fixed-rate yield at spreads typically between 275 and 325bps over the US 10-Year Treasury. For property owners, the ability to amortize sustainability improvements over extended periods enhances cash flow, operational efficiency, and long-term asset value. Senior lenders have broadly accepted C-PACE without requiring formal intercreditor structures, although larger and more complex transactions increasingly incorporate intercreditor agreements alongside standard lender consents.

CAPITAL STACK EFFICIENCY IN A CONSTRAINED CREDIT ENVIRONMENT

The institutionalization of C-PACE has followed a familiar pattern observed in other structured finance products. Originations have traditionally taken the form of Delayed Draw Term Loans that fund eligible improvements over time. As volume has grown, exit strategies have evolved to include 144A securitizations, private 4(a)(2) placements, and rated feeder funds designed for direct investment by insurance companies in addition to other long-duration capital providers. These mechanisms have expanded liquidity while maintaining consistency with the statutory lien at the asset level.[3]

Rating agencies have codified the credit characteristics of the product. Morningstar DBRS and Fitch Ratings each maintain criteria that evaluate property cash flow, sponsor quality, lien structure, and municipal servicing reliability. These frameworks align C-PACE with large-loan and CMBS methodologies, and the resulting rated issuances have shown stable performance with minimal loss history.[4]

INSTITUTIONAL CAPITAL FORMATION AND EVOLVING EXIT PATHWAYS

C-PACE's statutory design is central to its credit profile. Because the assessment is collected through the property tax system and cannot be accelerated, only the delinquent installment becomes senior to the mortgage. This produces exceptional payment stability and low loss severity. The structure combines public-sector enforceability with private-sector capital formation and has become a rare example of a credit instrument that is simultaneously yield oriented and impact aligned. Each C-PACE assessment finances measurable energy or resiliency improvements that reduce emissions, conserve water, or strengthen building resilience.[5]

For property owners and developers, C-PACE embeds sustainability within the economics of the project itself. Improvements that once relied on incentive programs or additional equity are now capitalized through self-amortizing, off-balance-sheet assessments that improve project economics and long-term asset performance.

At scale, this structural stability has done more than institutionalize C-PACE. It has created the conditions for its first true derivative structure.

The C-PACE structure combines public-sector enforceability with private-sector capital formation and has become a rare example of a credit instrument that is simultaneously yield oriented and impact aligned.

THE EMERGENCE OF STRETCH PACE AND THE REDEFINITION OF SENIORITY

Traditional C-PACE executions generally cap at approximately 35% Loan-to-Value or 40% Loan-to-Cost and operate as non-accelerable tax liens senior to the mortgage. In a conventional capital stack, this leaves a 60 to 65% last-dollar position filled by a combination of senior debt, preferred equity, and mezzanine capital. In large institutional projects, particularly in hospitality, mixed-use, and adaptive reuse, that constraint can leave meaningful leverage stranded. Stretch PACE has emerged as an evolution of C-PACE to address that gap, but not by reducing a borrower's equity requirement.

In select jurisdictions, most notably Florida, statutory flexibility now permits a bifurcated C-PACE structure consisting of two tranches within a single assessment. The C-PACE A-Note retains its traditional senior tax-lien priority and long-duration fixed-rate profile. The subordinate C-PACE B-Note extends leverage beyond conventional limits while remaining embedded within the same statutory instrument.

This integrated A/B structure allows total C-PACE proceeds to reach approximately 55% o even up to 65% or more of total project cost. Functionally, it creates a unitranche execution that consolidates senior and mezzanine style capital (Stretch Senior) into a single tax-secured instrument. The result is extended leverage, fixed-rate duration, non-recourse execution, and structural simplicity without intercreditor friction.

For sponsors, Stretch PACE replaces high-cost mezzanine or preferred equity with fixed-rate, long-term capital. For senior lenders, it preserves the passive nature of the tax assessment while enabling more efficient basis management. For institutional investors, it introduces a tranched, scalable structure increasingly compatible with forward-flow programs, trust vehicles, and structured securitization formats.

In other words, as C-PACE has entered the capital stack, Stretch PACE is beginning to reshape it.

Each program anchors long-term sustainability improvements to the property while mobilizing private capital without government credit exposure.

C-PACE and its international counterparts now represent a new category of policy-aligned, investment-grade infrastructure credit.

CREDIT MECHANICS THAT SUPPORT PERFORMANCE AND ESG INTEGRITY

The US C-PACE model is now informing parallel programs abroad. In the UK, Property Linked Finance is being introduced across England and Wales, with Scotland expected to follow. The structure closely mirrors the U.S. approach by attaching repayment to the property and utilizing local authority collection to secure private capital for energy performance improvements.

Similar developments are underway in Canada, where several provinces have enacted enabling legislation, and in Australia, where commercial building decarbonization priorities are driving demand for property-linked finance. These emerging frameworks affirm the global adaptability of the approach. Each program anchors long-term sustainability improvements to the property while mobilizing private capital without government credit exposure.[6]

C-PACE and its international counterparts now represent a new category of policy-aligned, investment-grade infrastructure credit. With the emergence of Stretch PACE, the asset class is no longer limited to a narrow senior slice of the stack. It is evolving into a structured, tranched credit platform capable of absorbing duration risk, leverage demand, and sustainability mandates within a unified framework.

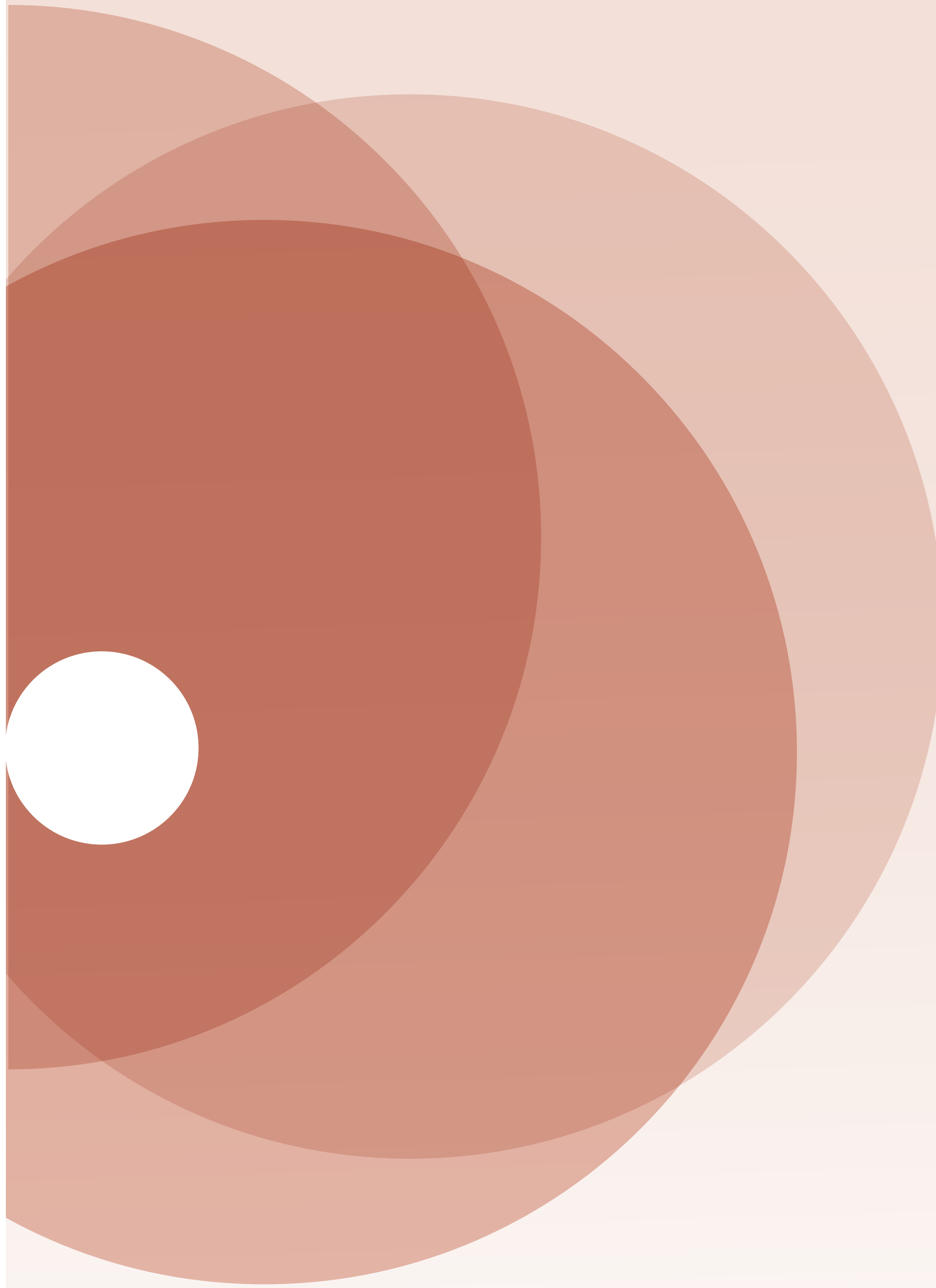
ABOUT THE AUTHOR

Jonathan Seabolt is CEO of Clearwater PACE, an institutionally capitalized direct C-PACE lender based in New York City deploying long-duration, fixed-rate capital across commercial real estate credit and structured finance nationwide.

NOTES

[1] Morningstar DBRS Perspective, 2023
[2] Clearwater PACE Proprietary Research, 2025
[3] Fitch Ratings, U.S. Single-Borrower C-PACE Rating Criteria, 2024
[4] DBRS Morningstar, PACEWELL Rating Methodology Disclosure, 2022
[5] Fitch Ratings, CMBS Large Loan Criteria, 2024
[6] UK Department for Energy Security and Net Zero, Property Linked Finance Consultation Summary, 2024

SOLAR WAVE



Michael Sanduski
Head of Business Development
Lumen Energy

There's a quiet revolution underway in on-site solar and batteries. What it is and why commercial real estate investors should pay attention.

When most commercial real estate investors think about on-site solar and batteries, they typically think about offsetting electric utility expense at a property. Historically, the "split-incentive challenge," whereby tenants own their legal and financial relationship with a utility, has hindered the widespread deployment of solar.

High power prices in many utility jurisdictions—now soaring even higher because of AI-induced demand—can yield healthy savings when offset through on-site solar production. But bringing landlords and tenants together in a legal contract to share in such savings (e.g., through a power purchase agreement) has been a challenge.

There is now a quiet revolution underway in on-site clean energy that avoids the split-incentive challenge entirely. That revolution is community solar.[1]

Through community solar, commercial real estate owners can garner meaningful new lease income—up to high six-figures per year per property for larger industrial buildings—for leasing underutilized space like rooftops and parking lots to host essential community infrastructure under state community solar programs.

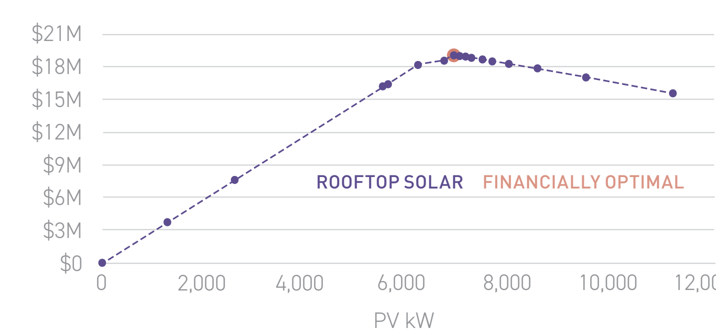
BEHIND-THE-METER (BTM) VERSUS FRONT-OF-THE-METER (FTM)

The physical distinction is exactly as it sounds, whether an on-site clean energy system like a solar array or a battery is in front of (FTM) or behind (BTM) a utilities' electric meter. It's the economic and legal distinction between the two that matters much more.

Many commercial real estate properties in the United States utilize NNN lease structures whereby utilities are the financial and legal obligations of tenants. Landlords can offset house electric expenses with solar, but the bulk of electricity consumption at most properties—and thus the opportunity to garner savings through solar—comes from tenants.

On-site clean energy systems that are installed behind-the-meter must be carefully optimized for both the building's total energy load (total kWh consumed) and load profile (when that kWh is consumed), as well as for net-metering regimes (i.e., compensation that utilities provide for excess power sent to the grid). For many buildings, there is a risk both to constructing a system that may be too large or too small for the building. Finding the right size system for a buildingOne of Lumen Energy's earliest endeavors was a software product that performs such optimizations in a fully automated manner.

EXHIBIT 1: OPTIMIZING SYSTEM SIZE FOR NPV OF NET CASH FLOW



Note: Sample optimization for NPV optimal solar system size performed by Lumen Energy for a 1,500,400sf warehouse in Baltimore, Maryland for a behind-the-meter system purchased with cash by the building owner.

In contrast to BTM, FTM systems like community solar provide one of the few avenues in which commercial solar arrays can compensate building owners for "feeding the grid;" historically impossible under the dominant monopoly system for investor-owned electric utilities in the US. Community solar programs typically involve solar developers setting up entirely new service that does not interact with the building's utility infrastructure, and which can often be installed without formal tenant consent.

Unlike with BTM systems, lease income from FTM or community solar systems generally scale linearly with installed system size. This linear relationship typically provides an incentive for property owners to maximize excess rooftop and parking lot space for solar or batteries (e.g., by leaving only space necessary for future rooftop units through designated reserve area).

WHAT IS COMMUNITY SOLAR?

According to the Coalition for Community Solar Access, "community solar refers to local solar facilities shared by multiple community subscribers who receive credit on their electricity bills for their share of the power produced."[2]

Community solar, sometimes referred to as shared solar, exists inherently as a policy tool that is employed at the state level under state specific legislation. Examples of such legislation include the CSEP program in New Jersey, the Shines program in Illinois, and the SMART program in Massachusetts. Common policy objectives achieved through community solar programs include:

1. **Discounted electricity for renters or income qualifying individuals.** Many state programs, such as those in New Jersey or Massachusetts, require that at least 50% of solar production credits generated by community solar arrays be provided to low or moderate incomes individuals at a substantial discount (often at least 10%) to their current retail utility rates.[3] Renters who do not have access to install rooftop solar on the homes in which they live can also receive meaningful savings benefits from subscribing to community solar.
2. **Avoided cost to transmission and distribution grid infrastructure.** By providing a framework to encourage the deployment of meaningful clean energy production close to consumption, these programs can reduce the need for significant transmission and distribution grid spending, which would otherwise increase consumer bills. Programs like Massachusetts's SMART further encourage resilience through requirements to integrate distribution storage.[4]
3. **Economic and workforce development.** Many programs are set up to benefit local workforces with requirements for prevailing wages or equity eligible contractors. More than 50% of program capacity in the Illinois Shines program is reserved for such Equity Eligible Contractors or through an alternate program that encourages local community participation (Community Driven Community Solar).[5]

In contrast to BTM, FTM systems like community solar provide one of the few avenues in which commercial solar arrays can compensate building owners for "feeding the grid."

EXHIBIT 2: HOW COMMUNITY SOLAR WORKS

1. A community solar developer installs solar panels on a rooftop
2. The community solar developer subscribes eligible customers to purchase the electricity from an array at a discount to what the utility charges
3. Subscribers pay for the solar power and receive discounts on their bill
4. Solar developer pays building owner quarterly or annual roof rent for hosting the community solar project

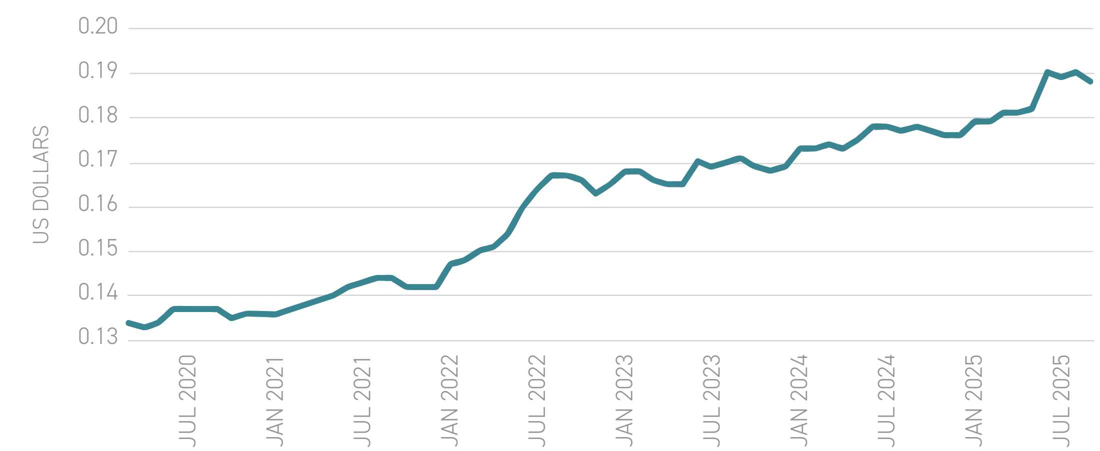
Source. Lumen Energy graphic providing a simplified overview of community solar mechanics.

WHY IS COMMUNITY SOLAR GROWING NOW?

For the first-time in decades, electricity consumption is rising sharply. Much of this rise is the result of AI-induced demand. This rapid growth in consumption has caught both utilities and state regulatory bodies like Public Utilities Commissions in a lurch, with widespread shortages of key equipment that can help utilities meet such demand. Some large-scale natural gas-turbines have five-to-seven-year waitlists according to E-Cubed Policy Associates.[6] By contrast, many community solar installations can achieve time to power in approximately two years, or potentially even faster.

This mismatch of supply and demand for power is resulting in meaningful increases in real prices. In July, PJM, which manages the wholesale electricity market and reliability for thirteen states and Washington D.C., procured energy supplies as part of its annual capacity auction at a 22% increase compared to the prior year.[7] Prices obtained through such capacity auctions has only just begun to bleed into retail customer utility bills. And yet, from the beginning of the pandemic in March 2020 through September 2025, per kWh rates in the US increased from 13.4 cents/kWh to 18.8 cents/kWh, a 40.3% increase.[8]

EXHIBIT 3: ELECTRICITY PER KILOWATT HOUR IN US CITY; AVERAGE



Source: US Bureau of Labor Statistics

Community solar programs are a key policy tool for lawmakers to provide direct utility bill relief to consumers while also providing for system-wide benefits in the form of avoided cost to transmission and distribution grids. In many cases, community solar programs also enable access to clean energy resources that are otherwise infeasible because of inadequate transmission infrastructure.

This was made apparent with the Trump Administration's cancellation of a loan guarantee enabling the 804-mile Grain Belt Express, the largest privately funded transmission line ($11 billion) in US history, meant to move wind power from Kansas to population centers across the Midwest.[9] Community solar enables deployment of quasi-utility scale renewable energy closest to where it is actually demand.

Many community solar installations can achieve time to power in approximately two years, or potentially even faster.

WHAT DOES THIS ALL MEAN OR BUILDING OWNERS?

Community solar developers rely on commercial and industrial building owners to serve as hosts for the essential community infrastructure that is deployed under these programs. This means that owners can lease underutilized space like rooftops and parking lots (for carport solar) on your assets to new tenants in the form of commercial solar arrays. The leases for these commercial solar arrays provide long-term, durable sources of income, typically 20 to 25 years, that scale in a linear fashion with installed system size. These leases are typically fully turn-key with $0 CapEx borne by the building owner and with all obligations for development, maintenance, and operation of the solar array undertaken by the solar developer.

The leases for these commercial solar arrays provide long-term, durable sources of income, typically 20 to 25 years, that scale in a linear fashion with installed system size.

EXHIBIT 4: INDICATIVE LEASE RATES FOR COMMUNITY SOLAR AND FEED-IN-TARIFF PROGRAMS BY STATE.

STATE	LEASE RATE PER MW INSTALLED	LEASE RATE PER 100,000 FT²
MARYLAND	$60,000-$80,000/yr	$60,000-$80,000/yr
ILLINOIS	$20,000-$40,000/yr	$20,000-$40,000/yr
NEW JERSEY	$80,000-$105,000/yr	$80,000-$105,000/yr
PENNSYLVANIA	$15,000-$25,000/yr	$15,000-$25,000/yr
MASSACHUSETTS	$55,000-$85,000/yr	$55,000-$85,000/yr

Crucially, all tax incentives associated with the array (e.g., the 30% investment tax credit, which provides a dollar-for-dollar tax credit against eligible project basis) are effectively monetized by the community solar developer, typically through tax equity facilities, with the value indirectly passed to the building owner in the form of higher rents than otherwise would be provided.

While the future is uncertain, the policy environment that benefits these systems grows stronger every day. It's no wonder that community solar legislation has been introduced to states such as Michigan, Ohio, and Wisconsin.[10]

Community solar is a wave, is your portfolio ready to catch it?

ABOUT THE AUTHOR

Michael Sanduski is Head of Business Development for Lumen Energy, modern solar broker that partners with leading real estate owners to turn their rooftops into revenue, modeling every property's returns, securing the most competitive bids, and providing white-glove service throughout.

NOTES

1 The U.S. Department of Energy defines community solar as any solar project or purchasing program, within a geographic area, in which the benefits flow to multiple customers such as individuals, businesses, nonprofits, and other groups. In most cases, customers benefit from energy generated by solar panels at an off-site array. Community solar customers typically subscribe to—or in some cases own—a portion of the energy generated by a solar array, and receive an electric bill credit for electricity generated by their share of the community solar system. Community solar can be a great option for people who are unable to install solar panels on their roofs because they are renters, can't afford solar, or because their roofs or electrical systems aren't suited to solar.

2 "Community Solar 101," Coalition for Community Solar Access, n.d., accessed December 8, 2025, https://communitysolaraccess.org/community-solar-101.

3 Exploring Community Solar – Illinois Shines, n.d., accessed December 8, 2025, https://illinoisshines.com/exploring-community-solar/.

4 "SMART 3.0 Program Details | Mass.Gov," accessed December 8, 2025, https://www.mass.gov/info-details/smart-30-program-details.

5 Block Capacity Dashboard – Illinois Shines, n.d., accessed December 8, 2025, https://illinoisshines.com/project-status-and-capacity-dashboard/.

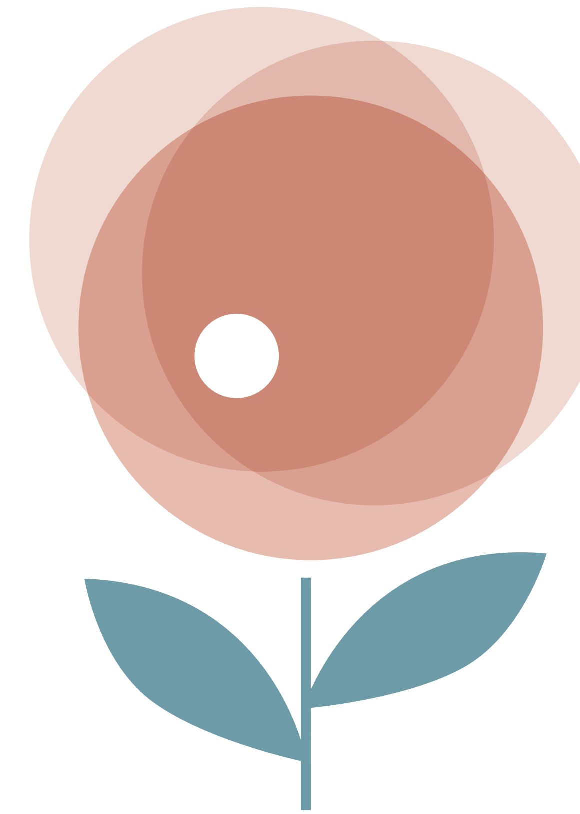
6 Jinjoo Lee, "Rushing to Meet AI's Energy Needs: Oil-Field Servicers," Markets, Wall Street Journal, September 11, 2025, https://www.wsj.com/business/energy-oil/rushing-to-meet-ais-energy-needs-oil-field-servicers-865e94e1.

7 Martha Muir, "AI Demand Drives Record Electricity Supply Costs in Largest US Market," US Economy, Financial Times, July 22, 2025, https://www.ft.com/content/f1bcd674-5ce4-4bcd-a3a5-4c35649add1b.

8 "Average Price: Electricity per Kilowatt-Hour in U.S. City Average," October 24, 2025, https://fred.stlouisfed.org/series/APU000072610.

9 "A Power Line for Clean Energy Was in the Works. Now, an Investigation Looms. - The New York Times," accessed December 8, 2025, https://www.nytimes.com/2025/07/02/climate/grain-belt-express-missouri-power-line.html.

10 "Wisconsin Lawmakers Look to Break Utility Grip on Community Solar," Canary Media, November 19, 2025, https://www.canarymedia.com/articles/solar/wisconsin-community-energy-bill-utility-pushback.; Stephen Cortes, "Bipartisan Bills Introduced to Expand Community Solar Access in Michigan," Coalition for Community Solar Access, September 4, 2025, https://communitysolaraccess.org/news/bipartisan-bills-introduced-to-expand-community-solar-access-in-michigan.; "Ohio Senate Moves to Unleash Community Energy in Bid to Power Rising Demand and the State Economy | Coalition for Community Solar Access," accessed December 8, 2025, https://communitysolaraccess.org/news/ohio-senate-moves-to-unleash-community-energy-in-bid-to-power-rising-demand-and-the-state-economy.



While the future is uncertain, the policy environment that benefits these systems grows stronger every day.

TRADE WINDS REDRAWN

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

Marshall Swett
Associate, Strategy and Research
New York Life Real Estate Investors

Elevated tariffs may represent more than a mere adjustment in trade policy—they could be signaling a fundamental departure from the long-standing US commitment to global economic integration.

Elevated tariffs may represent more than a mere adjustment in trade policy—they could be signaling a fundamental departure from the longstanding US commitment to global economic integration. For decades, the US championed open markets, maintaining an average tariff rate of just 2.2%, considerably lower than Canada's 3.4% and the European Union's 2.7%, according to 2023 data from the World Trade Organization.

Today, these figures appear to reflect a bygone era, as new dynamics reshape the nation's approach to international commerce. US tariff policy has been changing rapidly, and it is not known what the scope and magnitude of the levies on each country will ultimately be. Nevertheless, it appears that a new paradigm will be in place once the dust settles.

There is some level of bipartisan agreement that onshoring of manufacturing in certain sectors represents a national security imperative—one unlikely to be reversed. Since 2017, and accelerating in the wake of the pandemic, the US has sought to reduce its reliance on China and other countries for critical supplies, including semiconductor chips, active pharmaceutical ingredients, generic medicines, naval vessels, drones, and personal protective equipment.

Similarly, the US has been actively working to lessen its reliance on imports for critical materials such as aluminum and steel. These efforts are driven by concerns over national security, supply chain resilience, economic independence, and geopolitical tension. The strategies involve a combination of domestic investment, trade policy shifts, and international partnerships.

The full extent of the shift away from China has yet to be determined, and there is constant news of adjustments to proposed tariff levels. This ongoing negotiation—often conducted openly, almost theatrically, in the public sphere—has fueled uncertainty. Investors observe every move, every opening bid, every counter, and react with anxiety or at some point resignation, even exhaustion. For manufacturers, this creates a dilemma of trust and timing. They are asked to commit—to invest, to build, to root their operations—without knowing whether the rules of trade will change tomorrow. Will tariffs be imposed? At what levels? And for how long? These unknowns sow hesitation where there should be momentum.

Despite this uncertainty, a handful of large firms have taken meaningful steps forward. Initial onshoring activity includes Hyundai Steel announcing that it is opening a plant in Louisiana[1] and Honda announcing that Civics will be produced in Indiana.[2] TSMC, the world's largest contract chip manufacturer, pledged to invest a total of $165 billion in advanced semiconductor manufacturing in the US[3] More recent announcements include Eli Lilly and Company, a global leader in pharmaceutical products, stating that they are moving forward with plans for a $5 billion state-of-the-art manufacturing facility in the Richmond, VA area.[4] President Trump announced that Japanese auto maker Toyota is going to invest $10 billion in auto plants in the US, coming as Tokyo released some details about the over half a trillion dollars it has pledged to invest in America as part of a trade deal.[5]

Since April 2, 2025, when tariffs were announced on every nation in the world with elevated levies on Chinese imports, the President has been negotiating with many nations and has reached agreements or trade frameworks with the European Union, United Kingdom, Japan, Indonesia, Vietnam, and other countries. These agreements have resulted in less uncertainty, however, with the administration's tariffs now before the supreme court—the outcome is not firm.

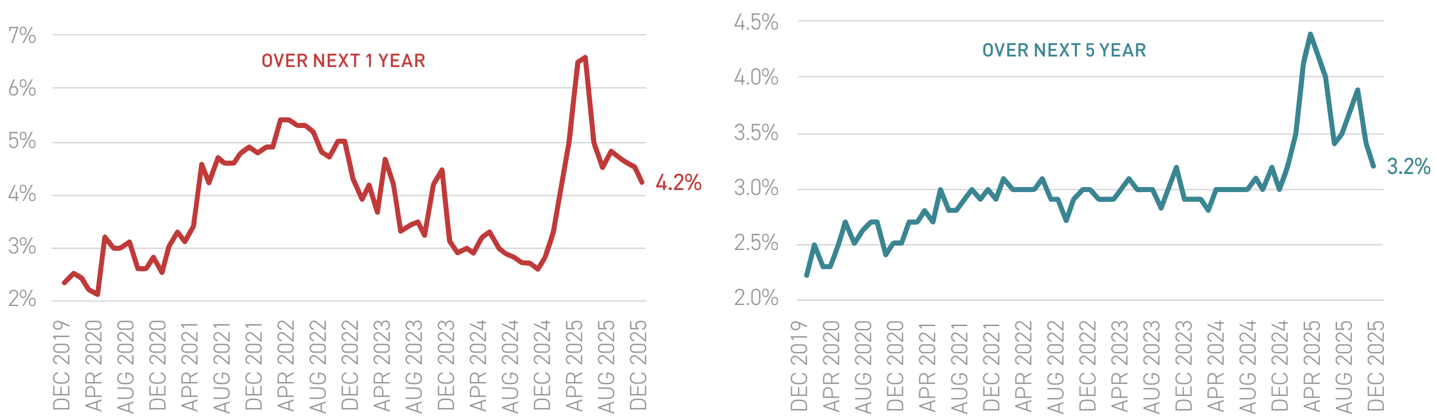
While the retail and industrial sectors are more directly impacted by tariffs, all CRE is influenced by broader macroeconomic trends that tariffs influence, including inflation, interest rates, and capital flows. Certain sectors and regions may start showing signs of resilience or vulnerability depending on their exposure to global trade and sensitivity to construction costs.

MACROECONOMICS

The implementation of recent tariffs carries the risk of generating widespread distortions across the US macroeconomic landscape. When policy actions disrupt the natural dynamics of free-market exchange, the consequences often extend beyond their initial scope, potentially elevating inflation expectations, disrupting bond market stability, and distorting established trade flows.

In consequence, individuals—whose decentralized knowledge is far superior to any central authority's—now anticipate markedly higher prices. The University of Michigan's survey reveals that the public expects a 4.2% rise in prices over the coming year. Over a five-year horizon, inflation expectations stand at 3.2%. While these measures have retreated from their highs seen in the wake of Liberation Day, they remain elevated relative to recent history.

EXHIBIT 1: UNIVERSITY OF MICHIGAN CONSUMER INFLATION EXPECTATIONS: OVER NEXT YEAR/OVER NEXT FIVE YEARS



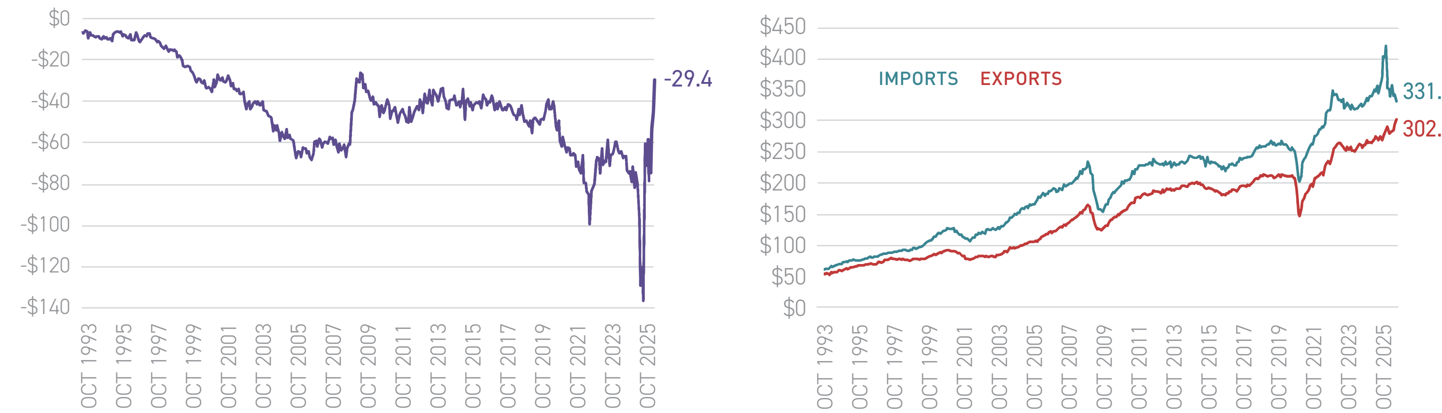
Source: University of Michigan. As of December 2025

The effects of recent trade interventions have quickly made themselves felt in the broader economy. After real GDP contracted at an annualized rate of -0.6% in the first quarter—the first such decline since early 2022—it rebounded an impressive 3.8% in the second. But behind the initial contraction lies a more telling story of how government-imposed distortions can ripple through a complex market system.

A key contributor to the initial decline was trade. The sharp increase in imports was not a reflection of genuine demand growth, but rather the result of businesses and consumers rushing to bring in goods ahead of expected tariff hikes. These actions, entirely rational from the perspective of individual firms, effectively pulled future demand into the present. Imports surged 38% in Q1, then dropped -29.3% in Q2, disrupting the natural timing and flow of trade. Because imports are subtracted from GDP calculations, this surge—outpacing any offsetting rise in exports—led to a widened trade deficit. This imbalance became the largest single drag on economic growth, overshadowing improvements in other sectors.

The University of Michigan's survey reveals that the public expects a 4.7% rise in prices over the coming year. Over a five-year horizon, expectations have climbed to 3.6%.

EXHIBIT 2: US TRADE DEFICIT; GOODS AND SERVICES: GOODS AND SERVICES/IMPORTS AND EXPORTS



Source: U.S. Census Bureau; U.S. Bureau of Economic Analysis. As of October 2025

We also saw this anticipatory behavior in consumer spending, particularly in retail and the auto sector. Households, expecting higher prices due to tariffs, increased their purchases to avoid paying more in the future. This kind of forward-looking action by millions of individuals underscores a truth often ignored in economic planning: the market is not a machine to be engineered, but a process of constant adaptation by people responding to prices, expectations, and uncertainty.

Commercial construction inputs have grown 41.5% and multifamily construction 39.1% while CPI grew 25.2% during that time period.

COMMERCIAL REAL ESTATE

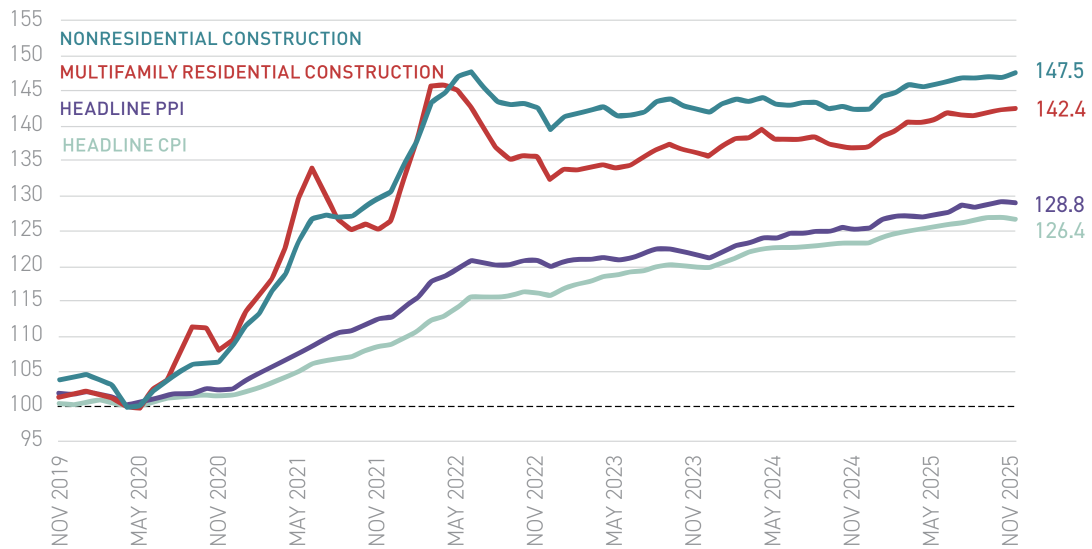
The CRE market is confronting a complex set of macroeconomic dynamics in the wake of new tariffs. Though tariffs do not directly target real estate, they influence the sector in ways such as higher construction and labor costs, potential changes in interest rates, and shifts in tenant demand.

A tariff-induced recession would weigh on property fundamentals, yet real estate's contractual cash flows, inflation resistance, and domestic orientation offer some protective characteristics. Investors and operators must remain vigilant as these broad economic forces shape investment outcomes. Uncertainty around tariff policy can cause investors to pause, particularly foreign investors in US real estate.

The construction industry faces significant headwinds due to rising material costs, constrained labor supply, and general economic uncertainty. Since the pandemic, construction costs have consistently outpaced overall inflation. Commercial construction inputs have grown 47.5% and multifamily construction 42.4% while CPI grew 26.4% during that time period.

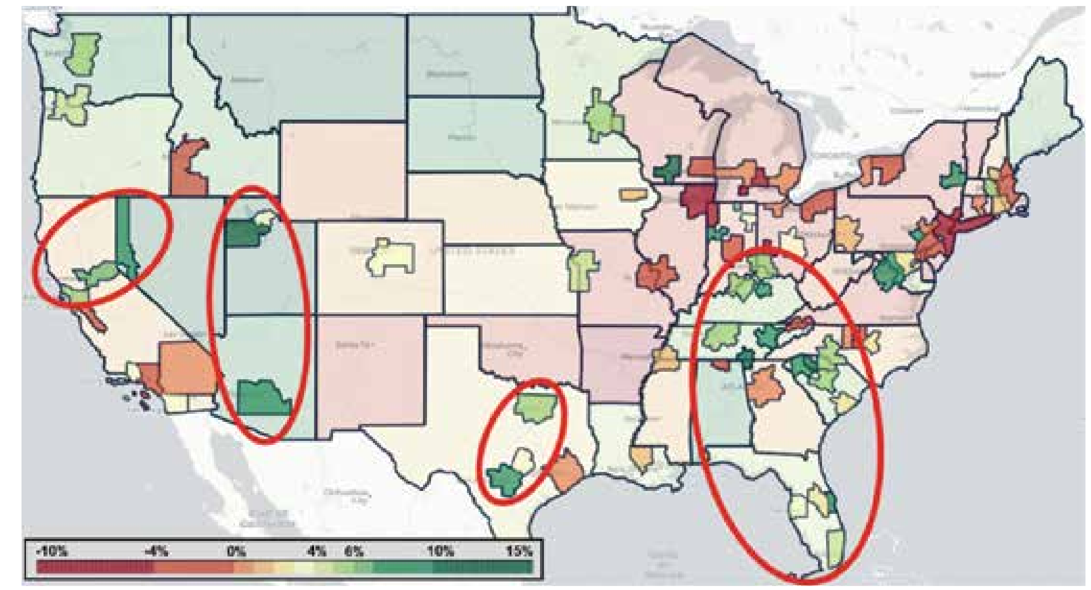
Tariffs on key materials such as steel, aluminum, and lumber raise costs for all property types. With these new tariffs, expenses related to construction, renovation, repairs, maintenance, and capital projects are likely to rise even higher.

EXHIBIT 3: PRODUCER PRICE INDEX: NET INPUTS TO CONSTRUCTION



Source: Bureau of Labor Statistics. As of November 2025

EXHIBIT 4: IDENTIFYING POTENTIAL ONSHORING HOTSPOTS



Source: Oxford Economics; as of Q3 2025.

INDUSTRIAL

Coastal logistics assets, long favored for their proximity to ports and international shipping lanes, may see tempered demand. As tariffs and trade uncertainty ripple through supply chains, dependence on global flows becomes a vulnerability. In contrast, inland warehouse and distribution centers—particularly those near domestic manufacturing hubs and along the US–Mexico border—may emerge as more durable, even strategic, components of a new industrial map. These markets will benefit, even if the new facilities include a substantially higher share of robots and automation than in the past.

A resurgence in US manufacturing may prove transformational for select local economies, catalyzing demand not only for labor but for the physical infrastructure of production: logistics parks, cross-dock facilities, last-mile hubs. In the Midwest, cities like Columbus and Chicago stand to benefit from reshoring, especially in sectors like industrial logistics. These cities, deeply rooted in distribution networks, are now positioned as vital nodes of a possible partially re-nationalized supply chain.

The Southeast continues to rise, driven by its demographic momentum and the maturity of its industrial corridors. Markets like Nashville and the I-85 corridor have become magnets for advanced manufacturing, supported by infrastructure, workforce availability, and competitive costs. In the Southwest, Texas and Arizona stand out—not just for proximity to Mexico and access to nearshoring benefits, but also for their roles in the expansion of domestic chipmaking and automotive production. Austin, Dallas, and Phoenix may become anchor points in this type of production resurgence.

Traditional high-tech manufacturing clusters in Silicon Valley and Los Angeles continue to be important while growing hubs including Austin, Phoenix, Columbus, and Raleigh may gain more relevance, particularly as supply chain security and domestic tech independence take center stage. At the same time, the risk of trade disruption with North American partners—particularly Canada and Mexico—remains a negative factor.

States in the Midwest and Southwest are especially exposed, while at the same time may benefit from their importance as manufacturing hubs and logistics engines. Looking ahead, strategic opportunities may rise in automotive and motor parts production—particularly in Texas, Georgia, Michigan, Ohio, Kentucky, Tennessee, Missouri, South Carolina, and Alabama.

The map in *Exhibit 4* highlights the 77 markets with the largest current employment across electrical, auto, chemical, pharmaceutical, medical equipment, and high-tech manufacturing sectors, illustrating where jobs in these industries are expected to increase or decline over the next five years. Markets shown in green represent areas that may benefit from reshoring activity within these sectors.

Among these markets, chemical manufacturing employment is projected to grow most significantly in Washington, DC (16.3%), Salt Lake City (14%), and Miami (13.8%). Growth in computer and electronic product manufacturing is expected to be led by Atlanta (8.3%), Denver (7.4%), and Seattle (5.5%). Pittsburgh and Tampa are each projected to see 9.4% gains in electrical equipment, appliance, and component manufacturing, followed closely by Madison, WI (8.8%). Tampa is also positioned for growth in medical equipment and supplies manufacturing (5.9%). Meanwhile, pharmaceutical and medicine manufacturing employment is projected to expand significantly in Greenville, NC (14.3%), Atlanta (12.5%), and Ogden–Clearfield, UT (8.0%).

In the motor vehicle manufacturing sector, the strongest gains are expected in San Antonio (14.3%), Nashville (5.6%), alongside smaller markets such as Lafayette, IN, Tuscaloosa, AL, Elkhart, IN and Lexington, KY.

Digging deeper, the automation risk will likely be most pronounced in manufacturing industries across California, Illinois, and Michigan. Real GDP in sectors expected to benefit from onshoring is projected to grow by a combined 19% over the next five years in these states, while employment is forecasted to decline by 1%.

MULTIFAMILY

The multifamily sector presents a dual narrative: while broader tariff-induced recessionary pressures may weaken rents and occupancy, a slowdown in construction activity due to high input costs supports asset values in growth markets such as the Sunbelt and Intermountain West. Coastal multifamily properties also stand to benefit from reduced construction activity and consistent demand. Southwest cities like Austin, Dallas, and Phoenix are positioned to gain in the multifamily sector.

The construction industry faces significant headwinds due to rising material costs, constrained labor supply, and general economic uncertainty. Tariffs are increasing the price of key inputs such as steel, aluminum, and glass, while tighter immigration laws limit labor availability. As noted, construction costs have increased approximately 47.5% since the pandemic. At the same time, elevated interest rates add further stress to underwriting new developments. As a result, new project pipelines are thinning, becoming a tailwind to the relative value of existing stabilized assets, especially in supply-constrained markets.

RETAIL

Tariffs can have a significant and multi-layered impact on the retail sector, as it sits at the front line of global supply chains and consumer behavior. Here's a breakdown of how tariffs affect retail real estate, operations, and consumer dynamics: If tariffs lead to inflation or economic uncertainty, consumer confidence may decline. Discretionary spending slows first, hitting fashion, dining, and entertainment tenants hardest. Budget-focused tenants may see a short-term bump in demand, but long-term cost inflation erodes that advantage.

Local goods, services, healthcare, and experiential retail may become more dominant. Some categories—like fast fashion, consumer electronics, and discount furniture—may shrink due to rising import costs. Many retail goods—apparel, electronics, furniture, toys, appliances—rely heavily on imports, especially from China and Southeast Asia. Tariffs raise wholesale costs, which will likely be passed on to consumers, leading to higher prices, weaker demand, and thinner profit margins. Value-oriented retailers (e.g., Walmart, Dollar General) may struggle to absorb costs, while luxury brands may pass them along more easily. Tariffs exacerbate already-tight margins for brick-and-mortar retailers, especially as they compete with e-commerce.

OFFICE

The office market, in this moment, is undergoing a decisive recalibration because of remote work.[6] Not all markets are equal in this evolution. Metros like New York and Dallas continue to show resilience—buoyed by talent density, innovation capital, and institutional depth. Washington, D.C., by contrast, offers substantially less optimism as its existing problems are exacerbated by government cutbacks.

Office real estate is fundamentally linked to the dynamics of the labor market—encompassing where and how work is conducted, as well as corporate confidence in future growth. The imposition of tariffs adds complexity to this environment. Should tariffs disrupt global supply chains or create sustained uncertainty, businesses may adopt a more cautious stance—deferring hiring decisions, postponing office expansion plans, and reassessing capital investments. These shifts could potentially have a cascading effect on leasing activity, ultimately dampening overall demand.

Multinational firms, especially those in manufacturing, logistics, and technology, are particularly exposed. When strategy must be rewritten in response to shifting trade winds, office space becomes not just a cost center but a variable in a larger equation. Cities with strong ties to global trade—Houston, Seattle, San Diego—may feel this strain more acutely, as their office fundamentals soften under the weight of hesitation.

Secondary markets with more domestically oriented economies—Nashville, Raleigh, Columbus—may emerge as relative winners, because of demographic growth. In a fragmented environment, they offer what the market increasingly values: stability, affordability, and proximity to a workforce.

Cities with strong ties to global trade—Houston, Seattle, San Diego—may feel this strain more acutely, as their office fundamentals soften under the weight of hesitation.

In an environment of economic contraction, the hotel sector feels the chill early. Travel, especially discretionary and business-related, is among the first expenditures to be paused.

HOSPITALITY

In an environment of economic contraction, the hotel sector feels the chill early. Travel, especially discretionary and business-related, is among the first expenditures to be paused. As demand softens and price sensitivity grows, pressure mounts across the performance spectrum, from midscale to luxury.

Yet the burden is not limited to the top line. It is also deeply structural. Hotels are built and refreshed with goods that cross oceans—textiles, furniture, electronics, and fixtures. These imports form the backbone of capex cycles, particularly Furniture, Fixtures, and Equipment (FF&E), and when tariffs intervene, they do so with consequence. A 10–30% increase in procurement costs can shift a project's economics entirely, forcing brands to make trade-offs between experience and affordability, quality and feasibility.

The challenges extend beyond design and development. If tariffs fracture global trade relationships or provoke retaliation, the effects ripple through the business travel and international tourism subsectors. In cities like New York, Chicago, and Houston, where corporate clients and global visitors form a dependable foundation of occupancy, the ground becomes less stable. A chill in cross-border commerce translates quickly to emptier rooms and tighter margins.

Meanwhile, rising costs sneak into operations. Imported linens, cleaning supplies, minibar items, and energy systems become more expensive, especially for full-service and luxury brands that rely on elevated standards. In this way, tariffs do not hit the lodging sector in a single blow—they erode it quietly, through procurement, through policy, and through the invisible recalculations of travelers deciding whether to go or stay.

PROFOUND TRANSFORMATION

The shifting role of tariffs in today's geopolitical and economic environment marks a profound transformation in the US approach to global commerce. No longer just levers of trade, tariffs have become strategic tools used to recalibrate national priorities, signal geopolitical allegiances, and redefine economic resilience. As the US moves away from decades of advocacy for open markets, this new era is characterized by onshoring, supply chain realignment, and heightened uncertainty that reverberates far beyond factory floors.

This emerging paradigm introduces volatility that challenges business planning, investment strategies, and long-term commitments. Manufacturers are caught in limbo, uncertain of future policy, while consumers and investors adjust their behavior in anticipation of inflation and market distortions.

In commercial real estate, the ramifications are equally complex. Tariffs indirectly reshape the sector by inflating construction costs, altering tenant demand, and heightening capital risk. While some regions and asset classes—like inland logistics hubs and multifamily properties in resilient metros—stand to benefit from any shift toward domestic production, others face a more complicated path. Retail, office, and hospitality sectors, particularly those with high exposure to international trade or consumer price sensitivity, must brace for both structural and cyclical headwinds.

Ultimately, the future of US trade policy remains uncertain, but its impact is already here. As the nation recalibrates its place in a fractured and multipolar global economy, strategic clarity and operational flexibility will become paramount. Stakeholders across industries—policy makers, investors, developers, and consumers—must adapt to a world where economic integration is no longer a given, but a choice shaped by political will, national interest, and evolving global power dynamics.

As the nation recalibrates its place in a fractured and multipolar global economy, strategic clarity and operational flexibility will become paramount.

No longer just levers of trade, tariffs have become strategic tools used to recalibrate national priorities, signal geopolitical allegiances, and redefine economic resilience.

ABOUT THE AUTHORS

Stewart Rubin is Head of Strategy and Research, Senior Director, for New York Life Real Estate Investors. Marshall Swett is an Associate, Strategy and Research, for New York Life Real Estate Investors.

NOTES

1 Reuters. "Hyundai Steel to Build Plant in Louisiana with Annual Output of 2.7 Million Tonnes." March 25, 2025. reuters.com/markets/commodities/hyundai-steel-build-plant-louisiana-with-annual-output-27-million-tonnes-2025-03-25/

2 Reuters. "Honda to Produce Next Civic in Indiana, Not Mexico, Due to US Tariffs – Sources." March 3, 2025. reuters.com/business/autos-transportation/honda-produce-next-civic-indiana-not-mexico-due-us-tariffs-sources-say-2025-03-03/

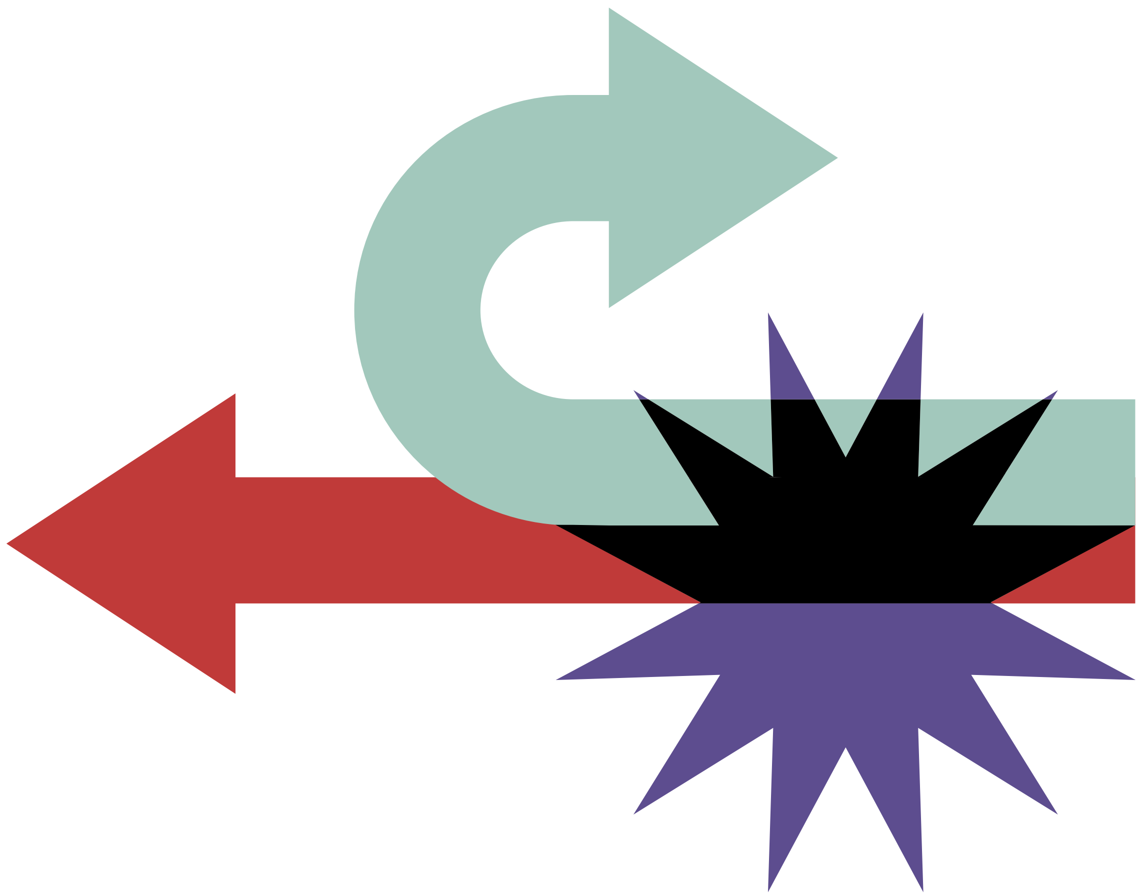
3 CNBC. "TSMC Shares Rise as World's Largest Chipmaker Expands Production." July 17, 2025. cnbc.com/2025/07/17/taiwan-semi-tsmc-stock-chip-production.html

4 Office of the Governor of Virginia. "Governor Youngkin Announces Major Investment Project in Virginia." September 16, 2025. governor.virginia.gov/newsroom/news-releases/2025/september/name-1058892-en.html

5 Wall Street Journal. "Japan, US Outline Investment Plan; Trump Says Toyota to Invest $10 Billion in US Auto Plants." October 28, 2025. wsj.com/economy/trade/japan-u-s-outline-investment-plan-trump-says-toyota-to-invest-10-billion-in-u-s-auto-plants-dcf3d8a2

6 Stewart Rubin and Dakota Firenze. "Not Back to the Office." IRE Americas, Fall 2024. irei.com/publications/article/not-back-to-the-office-and-common-sense-expectations-for-a-recalibration/

THE COMPLEXITY PREMIUM



Donal Warde
Real Estate Investment and Operations Consultant

Richard Cadena MBA Candidate
Columbia Business School MS, Real Estate ('17)
Zicklin School of Business, Baruch College

Wenpeng Ding
MS, Real Estate Candidate, Baruch College
Zicklin School of Business

Through a combination of limited new supply, significant non-market rate inventory, and robust long-term demand drivers, the New York City rental market—while volatile and complex to navigate—offers the potential of outsized returns for patient and sophisticated investors.

While institutional capital has chased Sunbelt growth markets, sophisticated operators have quietly captured outsized risk-adjusted returns in America's most complex real estate market: New York City.

The operating model that best leverages the opportunities at hand requires vertical integration, conservative capital structures, and a willingness to treat regulatory navigation as a core competency rather than an administrative burden.

THE CONSENSUS VIEW IS MISTAKEN

The capital flow to Sunbelt markets follows a well-defined path: chase population growth and business-friendly regimes such as Phoenix, Dallas, and Austin, while avoiding coastal and Gateway market regulatory uncertainty.

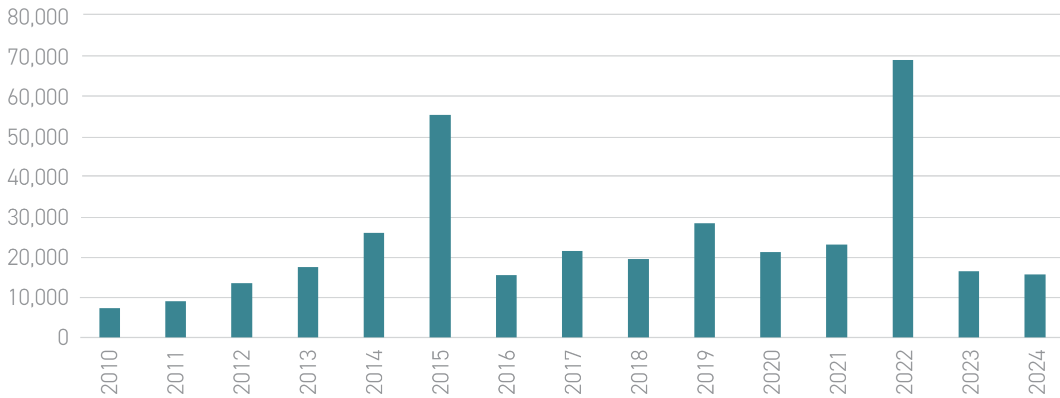
However, this consensus contains a critical flaw: the ease of doing business (especially new housing construction) is available to all market participants, which creates elastic supply dynamics that compress rents, and thus, risk-adjusted returns. These free-markets work as intended—with local developers and national players heeding the signal to create new supply to meet growing demand.

New York City's free-market multifamily rental housing operates under different dynamics. The regulatory complexity that gives investors reasons to pause—Good Cause Eviction caps, Local Law compliance escalation, stringent tenant protections—creates persistent supply-demand imbalances that function as a durable competitive moat for patient operators.

PART 1: STRUCTURAL HOUSING SHORTAGE

The largest residential real estate market in the country—the New York City MSA—has several factors that combine to create secular tailwinds for real estate investors: low new supply addition, consistent waves of in-migrants with high willingness to pay, limited market-rate inventory, and burdensome regulations

EXHIBIT 1: NYC PERMITS TIMELINE, 2010–24

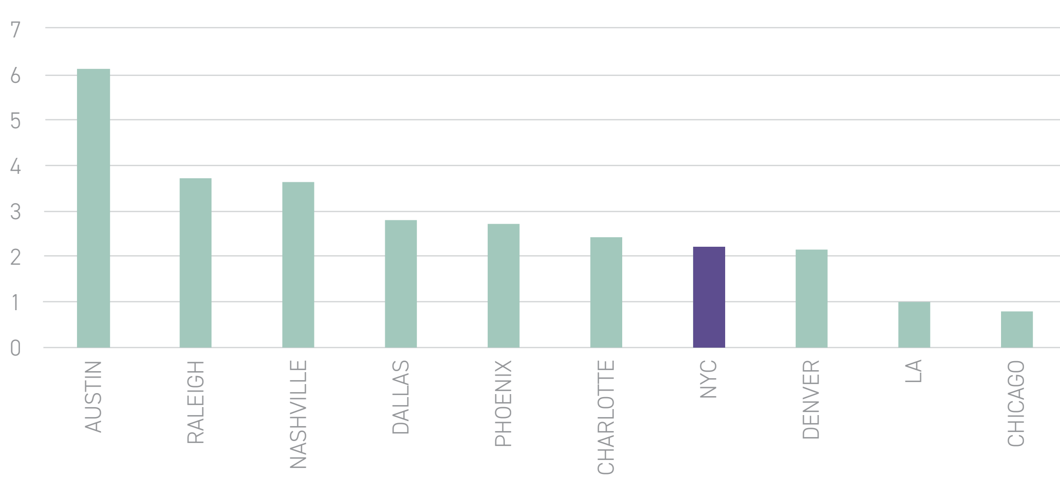


Source: NYU Furman Center

Well-intentioned regulatory interventions have contributed to structural housing scarcity, leading to long-term rent inflation in free-market rental units. As development becomes entangled in procedural and legislative hurdles, future supply is suppressed, and scarcity drives a premium for existing units. The cumulative effect of these constraints results in structurally higher rents for market-rate units over time. Following the 2019 Housing Stability and Tenant Protection Act (HSTPA), building permit volumes fell by 25% in 2020, according to data from the NYU Furman Center.

The decline continued in subsequent years despite renewed demand, with permits dropping by 76% in 2023 following the expiration of the 421-a tax exemption program in 2022. While 69,077 permits were issued in 2022 in anticipation of the incentive's end by developers hoping to "get in the ground," permitting volumes plummeted to just 16,420 the following year. Changes in permit volumes around the 2019 HSTPA and 2022 421-program expiration reflect how demand-side restrictions resulted in supply-side constraints, creating barriers to competition from new rental developments.

EXHIBIT 2: SUPPLY CONSTRAINTS, MULTIFAMILY PERMITS PER 1,000 RESIDENTS, 2023



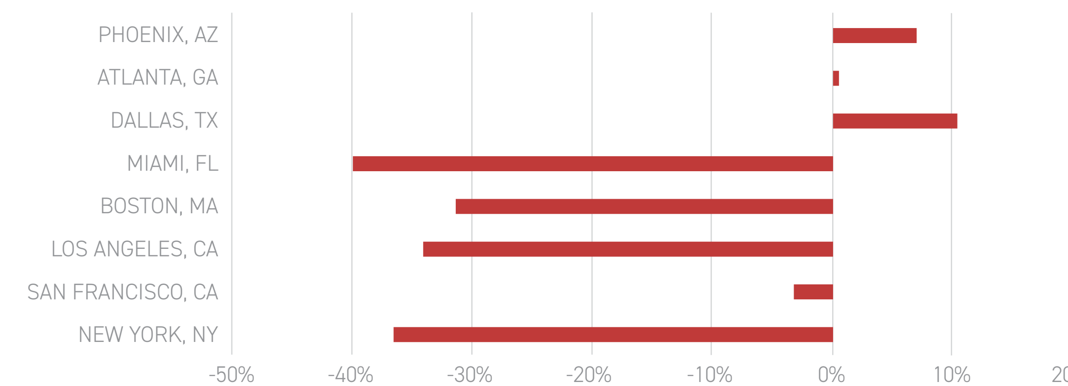
Source: Arbor Realty Trust/Chandan Economics; New Geography/Census Building Permits Survey

During the same period, median asking rents fell from $2,897 per month in 2019 to $2,845 in 2020, and $2,648 in 2021, according to StreetEasy.com data (NYC Median Asking Rent 2010-2025). This 8.7% decline reflected a combination of pandemic-era disruptions: a temporary collapse in leasing activity, a sharp uptick in vacancy rates, and a behavioral shift as renters fled high-cost urban centers for more affordable and flexible living arrangements in "Sunbelt" cities. Yet the retreat in rents proved short-lived and as public health restrictions eased and urban migration patterns normalized, pent-up demand returned to the rental market. In 2022, StreetEasy's median asking rents jumped by 28.5%, followed by another 6.9% increase in 2023, reaching $3,700 per month by Q3 2023.

These double-digit gains were not merely a post-pandemic rebound but rather a reflection of deepening supply-demand imbalances: against the backdrop of renewed demand and constrained new supply, rents surged. Importantly, the sharp escalation in rents occurred while the city's total housing stock grew by less than 1% annually according to Furman Center data, a rate far below what would be required to absorb returning demand and maintain affordability city-wide. The policy agenda advanced by Mayor Zohran Mamdani—particularly its emphasis on expanded regulatory oversight—is likely to further increase development friction, with the full effects on housing supply and market rents becoming evident in coming years.

The income gap data reveals a striking pattern: NYC renters earn 36% less than the income required to afford the median apartment, yet they continue to pay. By contrast, renters in Dallas, Atlanta, and Phoenix earn more than required, signaling price elasticity that doesn't exist in NYC. This willingness to pay despite affordability constraints demonstrates the depth of demand for NYC housing.

EXHIBIT 3: WILLINGNESS TO PAY (RENTER INCOME VS. REQUIRED INCOME GAP)



Source: Redfin Rental Affordability Report

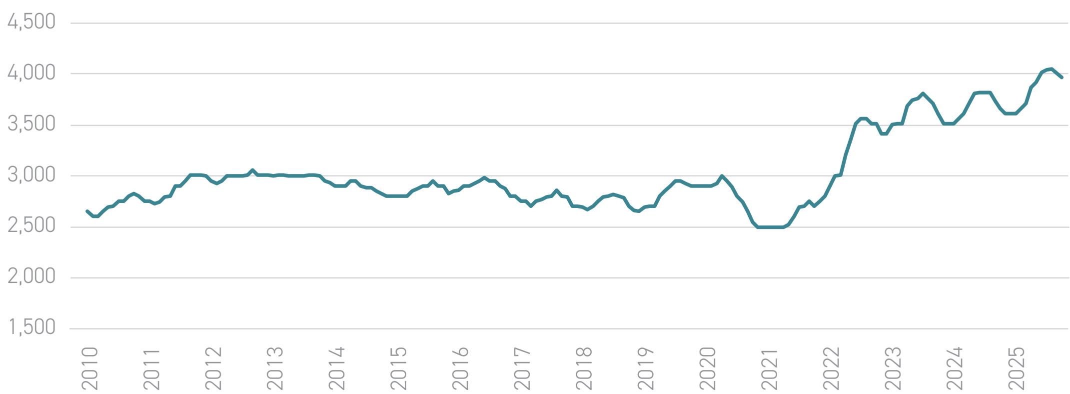
The Furman Center provides further evidence of the structural imbalance, as reflected in the change in median price per unit (market-rate and affordable 5+ unit residential buildings). From 2013 to 2018—a period marked by mounting policy uncertainty and flatlining permit activity—the median price per unit rose from $183,000 to $318,000, an increase of more than 70%. By 2019, the year HSTPA was enacted, median price per unit remained elevated at $300,000, signaling that investors continued to assign long-term value to income-generating rental assets despite intensifying political headwinds.

The 2020 pandemic brought temporary price compression, with values dipping 12.5% to $263,000 amid higher vacancies and investor uncertainty. Per-unit prices stabilized above $220,000 through 2024, suggesting that the retreat reflected transient conditions, not a fundamental change in asset desirability. Valuations never returned to pre-2013 levels. In a supply-constrained, policy-restricted market, pricing power accrues to incumbents, particularly those holding stabilized assets with minimal near-term exposure to permitting and capital market cycles.

In this context, the median price per rental unit functions as a proxy for expected long-term income durability and capital appreciation. As rent regulation becomes more unpredictable and development timelines extend, investors focus less on short-term cash flow and more on embedded upside from a chronically under-supplied demand center.

The resulting pricing behavior underscores a core feature of New York City's "Complexity Premium" market-rate rents rise not only because of cyclical economic forces but because regulatory inertia consistently suppresses new supply.

EXHIBIT 4: NYC RENT TIMELINE; MEDIAN ASKING RENT 2010–23



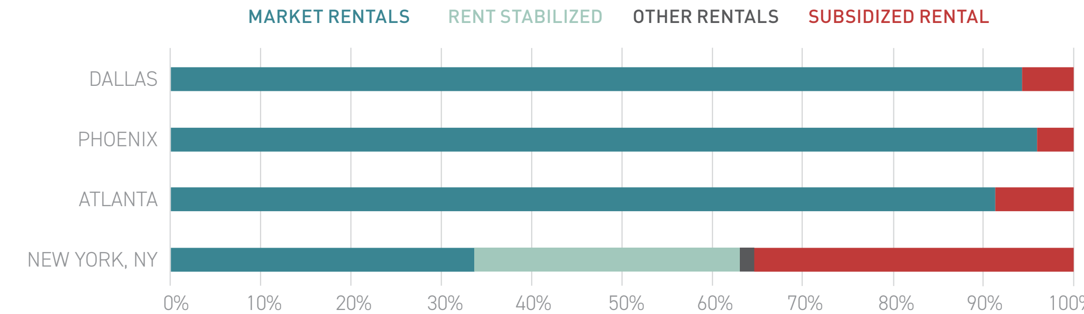
Source: StreetEasy Median Asking Rent

Unlike rent-stabilized units, which are partially insulated from market dynamics, free-market units are highly sensitive to shifts in available inventory. When development slows and population growth resumes, the imbalance between demand and available units intensifies, particularly in high-opportunity neighborhoods. The result is upward pressure on rents and strengthened pricing power for landlords, notwithstanding suppressed rents in the rent-stabilized segment because of regulatory restrictions.

The dynamic generates a scarcity premium for existing assets and bolsters underwriting assumptions for new construction. Said another way, existing market-rate units face less competition from new development and benefit from the broader supply-demand imbalance as new projects stall under regulatory and procedural constraints. Investors developing free-market buildings stand to benefit from the market distortion created by policy constraints, assuming tight cost budgeting through the initial stages of the project and monitoring conditions throughout the investment's time horizon.

Only 48% of NYC's rental stock consists of market-rate housing, compared to upwards of 94% in some Sunbelt markets.

EXHIBIT 5: INVENTORY COMPOSITION (% OF RENTAL STOCK BY STATUS)



Source: NYC Housing & Vacancy Survey; National Low Income Housing Coalition Gap Report

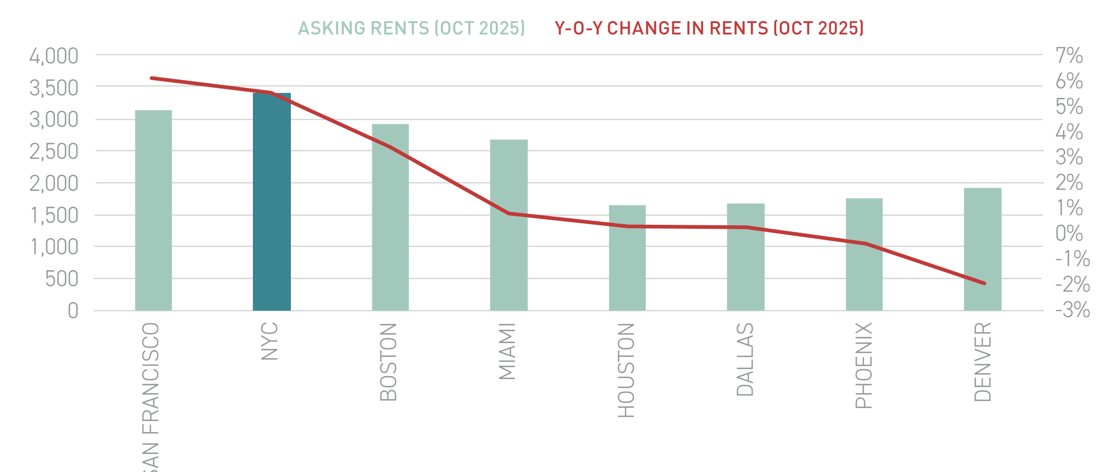
The constrained addressable market is visible in *Exhibit 5*—only 48% of NYC's rental stock consists of market-rate housing, compared to upwards of 94% in some Sunbelt markets. Against this backdrop of disproportionately limited market-rate supply, examining long-run housing production patterns becomes essential to understanding the persistence of elevated rents across municipalities.

US Census data indicates that the number of authorized housing units (by private investors/developers) in NYC has consistently exceeded both the national average and the number of units authorized in Sunbelt markets. This is not a one-off occurrence. On an absolute basis, NYC has authorized more units than Austin almost every year over the past fifteen years, underscoring NYC's uniquely strong and persistent demand for multifamily housing and the size of its addressable market.

Even so, the demand is not matched by sufficient supply. Per-capita authorizations of new privately owned housing units in NYC have remained below the national average for the past 9-years. Moreover, over the past fifteen years, NYC's per-capita authorization rate has averaged about 1/5 of Austin's. This chronic underproduction suggests that NYC's rental market operates under a persistent structural supply deficit, especially when compared to Sunbelt markets.

Despite this chronically limited supply, NYC's average rent has remained 1.6x to 2.1x that of Austin since 2015 (according to Zillow data). Even amid declining new-construction activity, NYC's YoY rent growth has stayed above 2.8% every year since 2021. In contrast, Austin expanded its housing supply far more rapidly during the same period and has now experienced two consecutive years of negative rent growth, with a projected decline of -3.6% (2024/25).

EXHIBIT 6: RENT GROWTH DIVERGENCE, YEAR-OVER-YEAR RENT CHANGE



Source: Zillow; Observed Rent Index

Taken together, these diverging trajectories between supply expansion and rent outcomes reinforce the conclusion that NYC's high and rising rents are a direct consequence of long-term supply constraints, rather than short-run cyclical demand pressures.

For long-term investors, these patterns suggest that rent appreciation in market-rate housing is not merely cyclical but structurally supported by persistent underbuilding. NYC's layered regulatory framework—although aimed at tenant protections—contributes to a chronic supply-demand mismatch benefiting market-rate housing investors. This structural shortfall underlies the pricing power of market rate inventory and offers a durable foundation for investment strategies oriented around long-term income growth and asset appreciation.

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PART 2: HOW TO LEVERAGE THE ALPHA OPPORTUNITY

The complexity premium is not universally available to all investors. It requires three conditions that filter many investors:

1. operational sophistication to transform regulatory burden into competitive advantages
2. conservative capital structures that survive regulatory volatility
3. time horizons long enough to compound the benefits of supply constraints

Consider the case of StuyTown (Stuyvesant Town–Peter Cooper Village), one of the most famous and recognizable real estate properties in New York's history. When Tishman Speyer acquired the 11,200-unit property in 2006 at 80% leverage, they projected NOI reaching $504 million by 2017. Actual NOI was $197 million. They defaulted in January 2010.

When Blackstone and Ivanhoé Cambridge acquired the same property in 2015 for more than $5.3 billion, they deployed 50% leverage ($2.6 billion of equity vs. $2.7 billion of debt). The regulatory thesis failed identically: all units became permanently rent-stabilized after court rulings eliminated the decontrol pathway. But the capital structure survived.

Same asset. Different operating model.

THE THREE-PART OPERATING MODEL TEST

Foreign institutional investors evaluating NYC multifamily should apply a three-part test to any operating partner. Failure on any dimension may limit the premium capture opportunity.

1. Regulatory Velocity

How quickly can the operator respond to compliance events? A C-class ("Immediately Hazardous") violation from HPD—covering heat, hot water, lead paint, window guards, and rodent infestation—must be addressed within 24 hours, including weekends and holidays. An operator managing 5,000 units without dedicated compliance infrastructure cannot achieve this velocity at scale.

"I now have a full-time violations coordinator," notes Marc Kaplan, President at Lisa Management, a property management company with 5,000 units affiliated with Hudson Companies, a NYC-based development group. "It's already paid dividends because I have a regular report and person dedicated to managing violations removal." The role is as distinct to NYC as the doorman. It doesn't exist in Sunbelt operating structures.

The lease renewal notice requirements illustrate the stakes. Under Good Cause Eviction, landlords must provide thirty, sixty, or ninety days' notice (depending on tenancy length) for rent increases above 5% or non-renewals. Missing the notice doesn't just delay turnover—it locks the operator into below-market rents, and because future increases compound from the current base, that missed increase permanently lowers the trajectory. As Remy Raisner of Raiser Group, an investment firm focusing on 1-5 unit properties in emerging submarkets of Brooklyn, explains: "If you don't give them the 90-days' notice, mid-October, you're on the market in low season. Your lease expiration schedule is off and the rent may be locked for years. It can hurt the value creation plan from unit renovations."

"If you get the compliance wrong, if you get the leasing wrong, if you get the abatements wrong . . . you could wind up losing 60-70% of the value of a piece of real estate. You could be rolling free-market back to rent stabilization," warns Robert Morgenstern, CEO at Canvas Property Group, a vertically integrated investment firm in NYC.

2. Capital Structure Discipline

NYC multifamily CMBS distress rates reached 14.4% at year-end 2024, up from 7% in 2023. The distress concentrates predictably: pre-1974 buildings show 25.1% distress rates vs. 2.9% for post-2000 construction. Pre-1974 is effectively a proxy for rent-stabilized status, as the Emergency Tenant Protection Act of 1974 established the modern stabilization regime.

The distress is regulatory, not physical; these loans were underwritten on deregulation assumptions that no longer exist. Building age is a proxy for leverage discipline as much as regulatory exposure. Target 55-60% LTV for positive leverage at current rates.

Debt yield must be managed carefully. The $930bn CRE debt maturity wall in 2026, with 60% of 2021-2022 vintage loans reflecting the rate shock from 3-4% origination to 6-7%+ refinancing, will create acquisition opportunities for disciplined capital—and distress for overleveraged competitors.

3. Vertical Integration Depth

Third-party management can be challenging for generating outsized returns in high-complexity markets for structural reasons. The economics are misaligned: third-party managers optimize for fee revenue and ease of operation (i.e., their labor cost to perform services), not the asset value creation. They cannot make the trade-offs that capture complexity premiums.

"When I was a third-party manager, I wasn't losing money on a client," explains an industry veteran of both the third-party and owner-operator management sectors. "Why would I? I'm not a nonprofit."

But within a vertically integrated structure, operating platforms can think holistically about value creation. In the NYC context, that means long-term price appreciation—and navigating potentially volatile interim cash flows from operations.

"If the development team needs me to make changes to my fees or the property staffing model, I can move things around to make it work," explains that same industry veteran. "And the compliance portion needs to be tight. We can't have violations impacting financing or relationships with government entities when it comes to new developments. Relationships with the City are our lifeblood."

The vertically integrated operator can accept short-term property management losses to secure development deals and gives them an entry point to the capital appreciation benefits. Persistent regulatory issues can lead to firms being effectively shut out of the market and suffer reputational damage that extends beyond the NYC real estate market.

The implication for institutional allocators is clear: evaluate talent density, not platform size.

THE NEW PLATFORM ECONOMICS

Vertical integration in most industries, including real estate operations, requires minimal viable scale for positive unit economics. In NYC, 1,000 units could be considered a reasonable estimate of this scale. However, technology and distributed workforces have altered this threshold.

Offshore back-office staffing in low-cost countries achieves 50-70% cost savings on accounting and assistant property management functions. Modern property management software platforms such as Yardi, AppFolio and others, streamlines operations that previously required more manual coordination. One operator reports maintaining a New York City operation of 21 staff supported by two offshore back-office employees handling bookkeeping and assistant PM functions—a model implemented this year as NYC real estate labor costs rose.

As the required platform scale drops, the constraint shifts from financial capital to human capital. Technology replaces low value tasks and amplifies the returns on judgement. A senior operator with integrated data infrastructure can make ten times the high-quality decisions of a traditional manager drowning in spreadsheets. This creates a "superstar effect": in complex markets, small differences in operator quality produce disproportionate differences in returns. The implication for institutional allocators is clear: evaluate talent density, not platform size.

"It doesn't scale as well as a SaaS business," explains Morgenstern of Canvas. "You need human talent and human talent is hard to find. But that's also the secret sauce of why an international or domestic partner will always rely on an operating partner."

THE COMPLIANCE ESCALATOR

Local Law compliance costs have escalated predictably, driven by safety incidents that trigger regulatory expansion. Understanding this pattern is essential for underwriting.

Local Law 11 façade inspections illustrate the trajectory. In 2010, the requirement was straightforward: hire an engineer, pay $10k-$20k, and conduct a visual inspection. The 2019 updates to the Facade Inspection and Safety Program (FISP) eliminated purely visual inspections, requiring "close-up" inspections every sixty feet, mandating scaffolding or boom lifts. After a fatal balcony collapse, bolt testing requirements were added. Parapet walls were folded into Local Law 126. Today, a typical cycle costs $150k-$450k depending on building conditions.

"What drives the amount of money that we need to spend—these regulatory 'goalpost-moving' operations—happens because of an event," explains an operations director. "A garage collapses. We've got to fix Local 126. A brick fell off the thirtieth floor and caused a fatality. We have to up the ante. Parapet walls are failing. Well, we never looked at buildings below seven stories before, so let's just stick it into Local Law 126."

The strategic response: budget for the next regulatory expansion, not just current requirements: "When we go into these projects, we don't look just to get through what the minimum requirements are now. We're looking at the next cycle in case it changes, what else needs to be done. And we're looking at a budget to do it now".

VIOLATIONS AS ACQUISITION INTELLIGENCE

Sophisticated NYC operators use violation patterns as their first due diligence screen—not their last. The HPD and DOB databases reveal intelligence that broker pitch decks obscure.

"If I see a C violation that's been sitting for more than a year, it tells me one of two things," explains Marc Kaplan of Lisa Management. "One, they can't get access and I'm going to be spending a fortune on legal fees. Or Two, they just don't have the available cash to cure the violation".

The corollary insight: certain violations appear severe but cost little to cure. Means of egress violations—a back door locked that should be unlocked—registers as C-class fire hazards but may only cost $100-$500 to resolve. Missing smoke detectors, window guards, defective self-closing doors: all easily addressable. What looks scary to passive capital becomes a buying signal for operators who understand the actual remediation cost.

The information asymmetry is the complexity premium in action. The spreadsheet investor sees risk, but the integrated operator sees solvable mispricing.

THE PLAYBOOK FOR FOREIGN INSTITUTIONAL CAPITAL

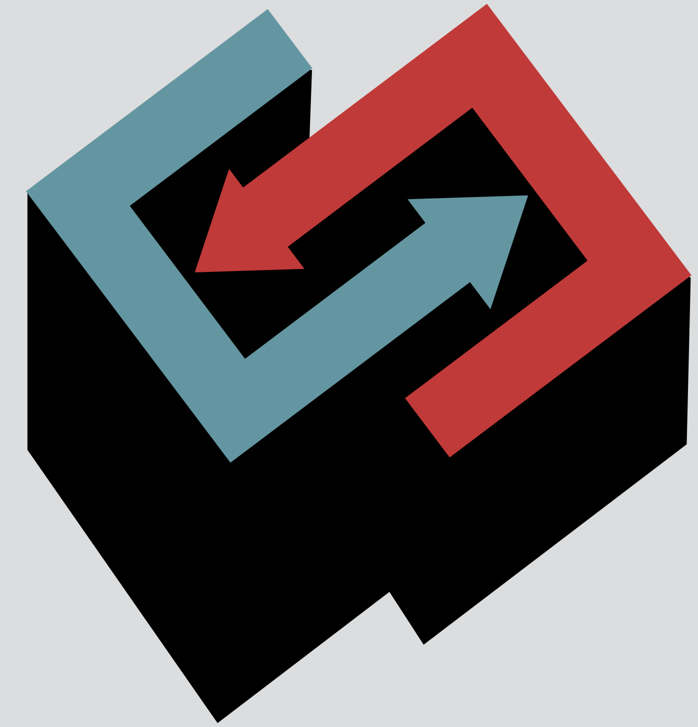
Foreign institutional investors with $100-$500 million allocations should structure NYC exposure through programmatic joint ventures with experienced local operators. The entry requirements are clear: post-2009 construction exempt from Good Cause caps (exempt for thirty years from certificate of occupancy); emerging submarkets with attractive cap rates; 55-60% LTV maximums; and 7-10 year (or perpetual) hold assumptions.

For investors willing to partner with operators who have built the infrastructure to transform regulatory burden into competitive moat, NYC's supply-constrained multifamily market offers risk-adjusted returns over long hold periods.

The barriers that deter many investors are precisely what protect the returns for those who navigate them.

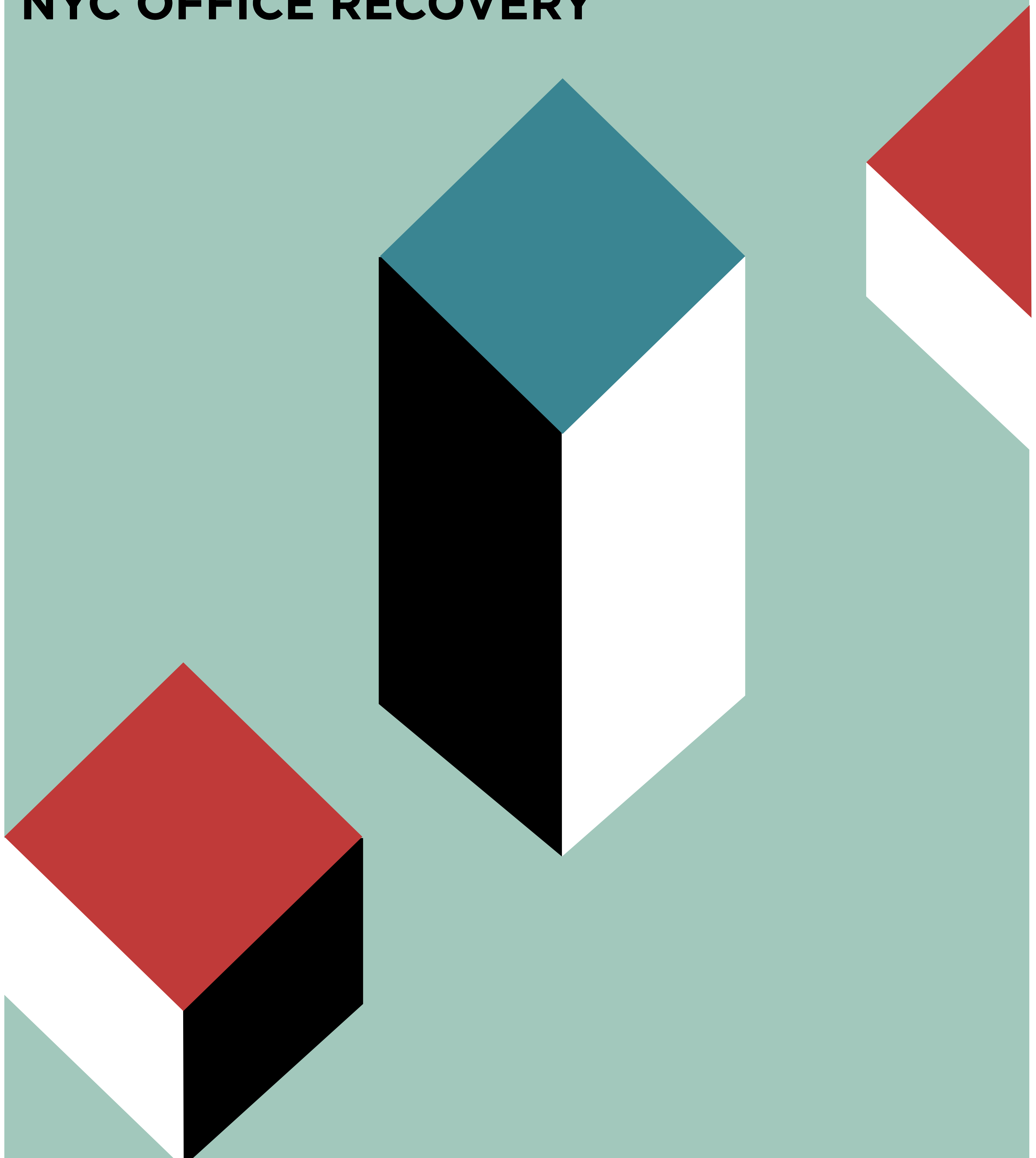
ABOUT THE AUTHORS

Donal Warde is a Real Estate Investment and Operations Consultant. Richard Cadena is Vice President, Commercial Real Estate Credit, for Bank Hapoalim. Wenpeng Ding is an MS, Real Estate Candidate, at the Zicklin School of Business at Baruch College.



The barriers that deter many investors are precisely what protect the returns for those who navigate them.

NYC OFFICE RECOVERY



Scott Crowe
Chief Strategy Officer & Head of Equity Capital Markets
RXR

A boom is building in New York's office market, where rising demand, limited supply, and discounted pricing have made the physical infrastructure of human capital one of the most compelling investment opportunities of this cycle.

THE VALUATION DISLOCATION AND THE NEXT BUILDING BOOM

While investor attention has been fixated on the AI boom and digital infrastructure, a quieter, less obvious bull market has been unfolding in one of the most overlooked sectors globally: New York City office. Although bifurcation remains a defining feature of the new normal, the rebound is broadening beyond trophy assets to include high-quality Class A buildings.

The recovery is well underway, with vacancy for New York prime office assets approaching single digits, and net effective rents are growing at double-digit rates. Crucially, with WFH being replaced by RTO, tenant demand is now clear—both in volume and in the specific, modern requirements tenants are seeking. In turn, this dynamic is catalyzing significant opportunity to invest through several defined strategies.

Strengthening occupier demand, coupled with years of constrained new supply, has led to rents and cap rates now supporting the required returns to make new development economically viable. These conditions place New York City on the doorstep of the next "building boom," which will create a new generation of modern office assets, and create a compelling investment opportunity for select new development, where the ability to create premium space in prime locations is achieving exponential pricing power.

Outside the trophy and newer-vintage segments of the office market, capital markets continue to lag, providing an investment window. The next tier—high-quality Class A buildings— remain approximately 30% below pre-COVID valuations and roughly 50% below replacement cost.[1] This discount represents an attractive entry point into the office market, even when assuming a structurally higher exit cap-rate regime. As the market recovery broadens, the investment opportunity will also expand to include value-add and renovation plays, focusing on modernizing and amenity-rich upgrades to bring well-located, structurally sound assets into the modern era.

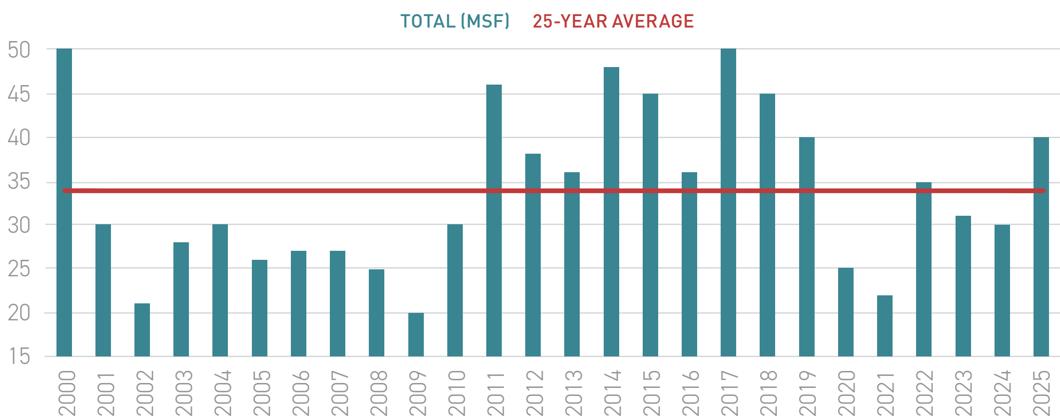
As digital infrastructure develops, the physical infrastructure for human intelligence is just as important. In many ways, Manhattan's office towers are the original data centers—the physical architecture where complex ideas are exchanged, creativity is processed, and large-scale, coordinated human capital is deployed. In this new age of AI, the indispensable value of both human and digital infrastructure presents an opportunity for investors to profit from the essential physical layer where innovation, the fuel of the digital age, is generated.

DEMAND NORMALIZES—CLARITY REPLACES DISTORTION

The post-pandemic office debate was dominated by extrapolation. A short but extreme labor-market shock was extended into a permanent structural thesis where office assets were painted with the same brush, often without adequate attention to geography, asset quality or tenant demand. The market did undergo a prolonged pause in occupier decision-making, but New York City never ceded its role as a global command center for finance, law, professional services, media, and technology.

Following a period of recalibration in which tenants reduced footprints, prioritized quality, delayed commitments, and waited for clarity on attendance norms, the market is now in recovery mode, with Manhattan recording approximately 23.2 million square feet of leasing in the first nine months of 2025—the strongest pace in nearly two decades.[2]

EXHIBIT 1: NYC OFFICE LEASING (2000–2025)

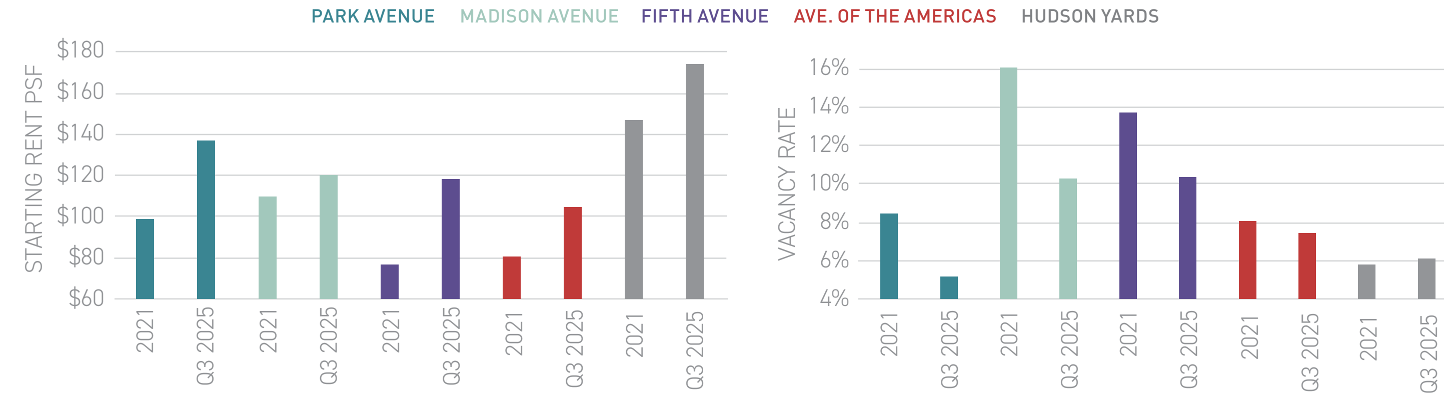


Source: JLL Research Q3 2025; Avison Young Research Q2 2025

This recovery is not national. While overall US office vacancy remains elevated, gateway markets account for a disproportionate share of leasing activity, with Manhattan representing the single largest contributor to US demand.[3] Manhattan vacancy has declined by around 350 bps from its peak as of Q3 2025, marking the first time since 2014 that the rate decreased for six straight quarters.[4]

One of the most important post-pandemic shifts has been the renewed premium on location and transit efficiency. As employers reassert in-office expectations, employees have become acutely sensitive to commute time and reliability. In New York, one-seat-ride accessibility has re-emerged as a structural advantage for transit proximate assets.

EXHIBIT 2: VACANCY RATE AND STARTING RENT PER SQUARE FOOT (SELECT NYC SUBMARKET)



Source: JLL Research Q3 2025, RXR estimates based on proprietary analysis of competitive set

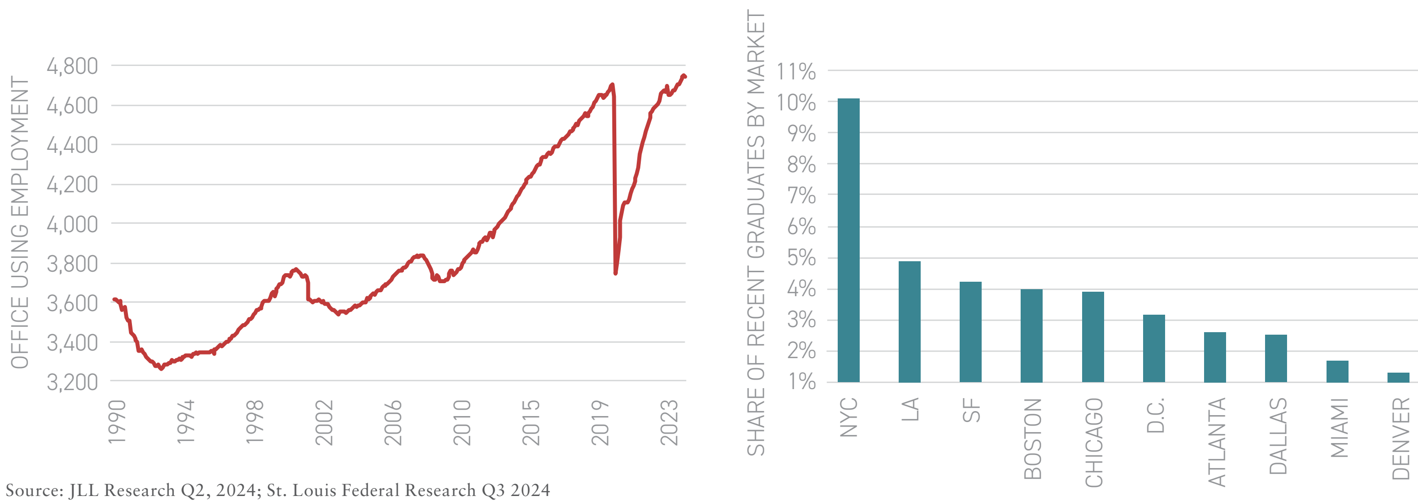
New York's resilience reflects the same forces that sustained its dominance through prior technological transitions: deep labor pools, proximity to capital, institutional expertise, and unmatched network density.

HUMAN INTELLIGENCE STILL CLUSTERS

AI value creation depends not only on compute power, but on people power—the dense human networks responsible for deploying, financing, regulating, and commercializing technology. AI has accelerated productivity and automated standardized tasks. It has not replaced judgment, leadership, trust, or coordinated decision-making. As repeatable work is absorbed by machines, the marginal value of differentiated human capital increases—and that capital continues to cluster spatially. New York's resurgence has coincided with the rise of AI, reflecting the same forces that sustained its dominance through prior technological transitions: deep labor pools, proximity to capital, institutional expertise, and unmatched network density.

New York sits at the center of this ecosystem. Since the pandemic, New York's tech sector has grown at a rate far exceeding that of the broader city economy, accounting for a disproportionate share of new jobs.[5] While other parts of the country have certainly grown, New York City is in a league of its own. Since 2021, nearly 500,000 recent college graduates have chosen to locate in New York City—more than any other US city—with roughly one in seven relocating workers nationally moving to New York.[6]

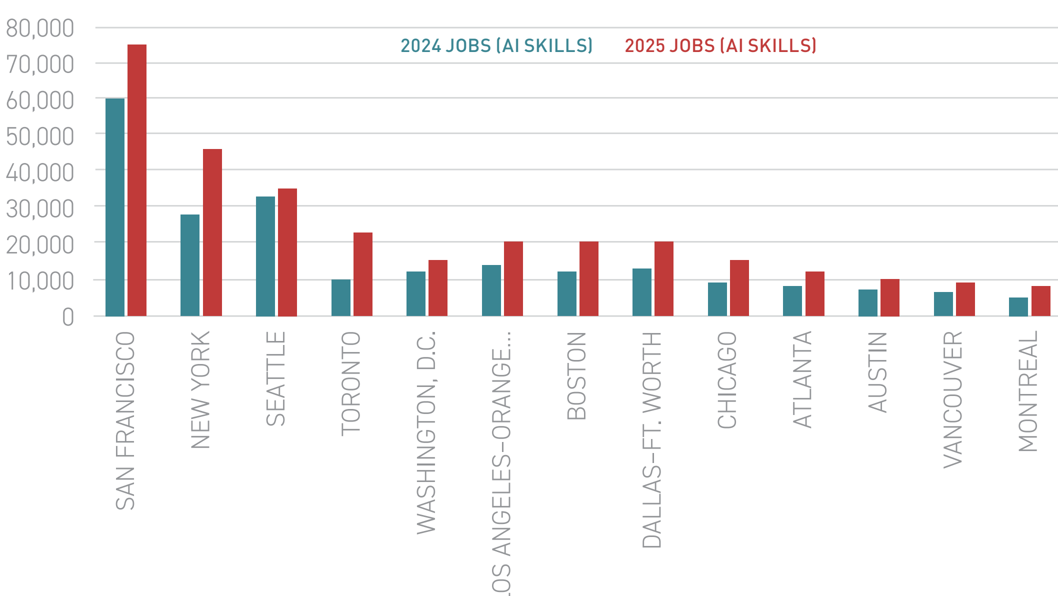
EXHIBIT 3: NYC OFFICE USING EMPLOYMENT AND RECENT GRADUATE MIGRATION BY MARKETS



Source: JLL Research Q2, 2024; St. Louis Federal Research Q3 2024

Leasing data also corroborates the trend. Through the third quarter of 2025, AI-focused firms leased approximately 486,000 square feet of Manhattan office space—already surpassing full-year 2024 totals and nearly doubling 2023 activity.[7] These firms overwhelmingly prefer Class A environments that support in-person collaboration.[8]

EXHIBIT 4: NORTH AMERICA AI SKILL JOB GROWTH



Source: CBRE Research Q3 2025

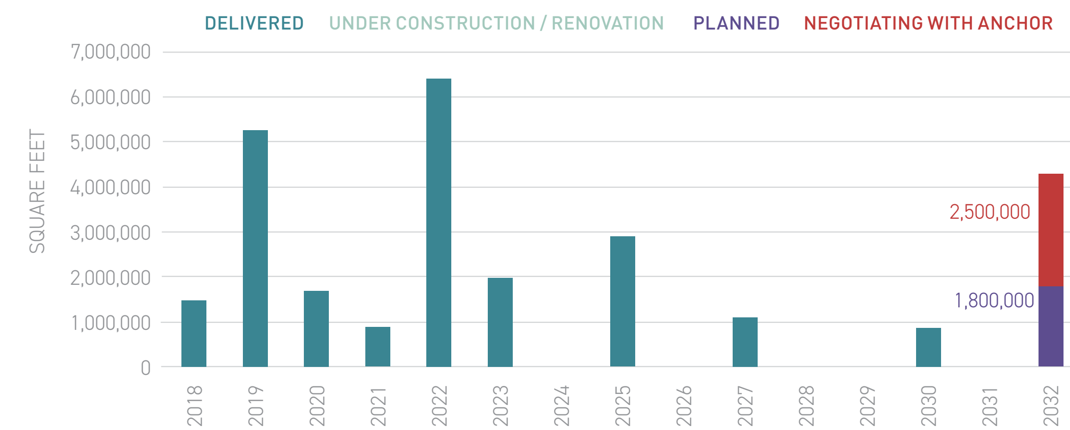
THE NEXT OFFICE CYCLE BEGINS WITH SCARCITY

One defining feature of the next New York office cycle is that demand is returning into a situation of scarcity. The development pipeline that historically refreshed Manhattan's inventory has shrunk dramatically. At the same time, a number of office-to-residential conversions are permanently removing functionally obsolete space. The scale is meaningful: current and contemplated conversions are equivalent to approximately five percentage points of vacancy reduction across Manhattan, accelerating tenant migration toward modernized and newly built assets.[9]

Demand is therefore strengthening into a market without the traditional release valve of new supply—a dynamic that historically precedes development cycles.

As a consequence, the seeds of the new development cycle are being sown today, with a cohort of new assets slated for the end of this decade and into the beginning of the next.

EXHIBIT 5: NYC OFFICE DELIVERY PIPELINE



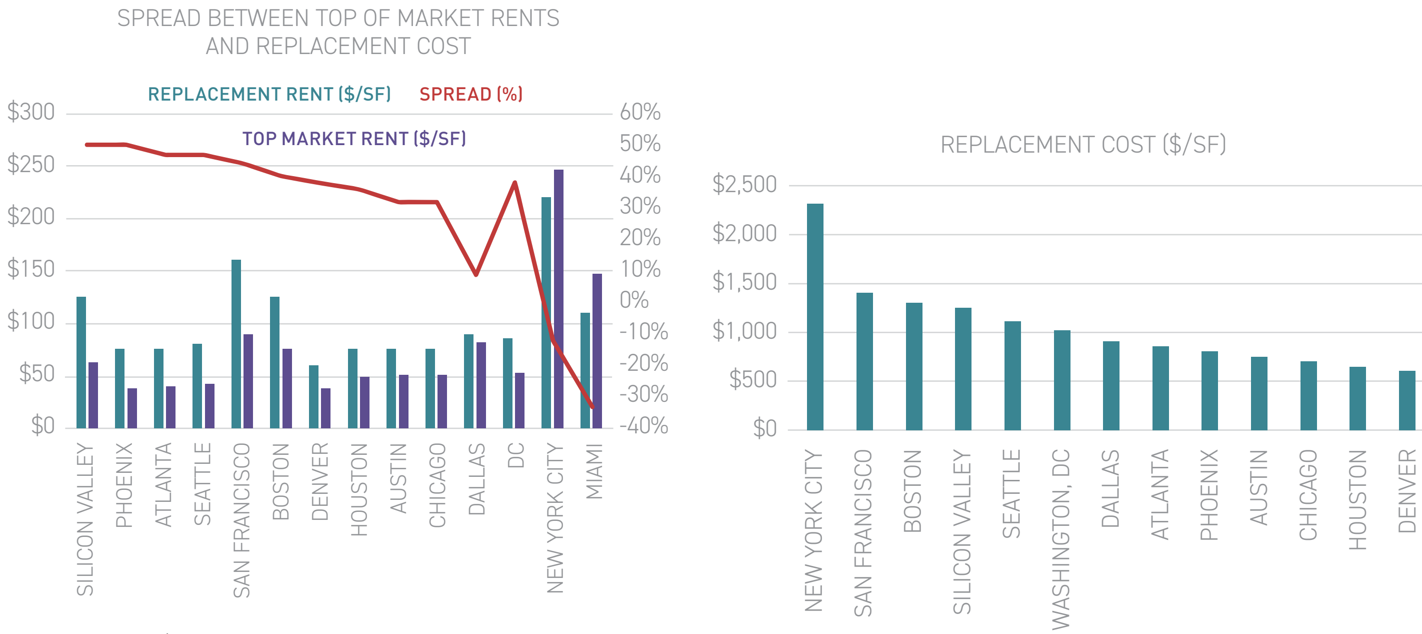
Source: JLL Research Q3 2025

WHY DEVELOPMENT WILL RETURN

Development is returning to the New York office conversation because the fundamental economics have aligned. The prolonged period of supply constraint, coupled with the clear rebound in premium demand, has reset the financial feasibility equation, with the scarcity of top-tier space now supporting rents well in excess of $200 per square foot for the best sites, while cap rates for well-located new assets are consistently below 5%. This renewed feasibility provides institutional investors with a critical opportunity to deploy large amounts of capital into high-quality assets at scale, satisfying the need for durable, long-term value in a market with visible demand durability.

The second key driver is crystallized demand. Tenant requirements have become clearer, making the choice of physical attributes and location far more certain for developers. Modern systems, sustainability credentials, transit adjacency, flexible layouts, curated amenities, and architectural distinction are now prerequisites. This clarity about what tenants want simplifies development choices while creating a structural need that much of the existing inventory cannot meet economically. The high-rent threshold required to justify new construction, therefore, functions as a structural governor on supply, ensuring that only best-in-class projects proceed and are insulated from competition in the lower-tier market.

EXHIBIT 6: SPREAD BETWEEN TOP OF MARKET RENTS AND REPLACEMENT COST AND REPLACEMENT COST PER SQUARE FOOT



Source: JLL Research Q3 2025

CAPITAL MARKETS LAG FUNDAMENTALS, PRESENTING OPPORTUNITY

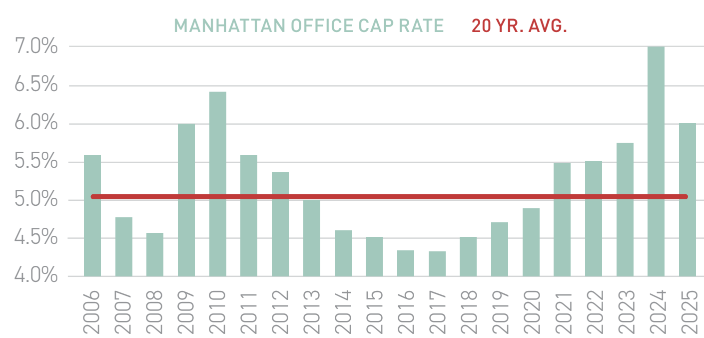
Despite improving operating metrics, capital markets have been slower to reprice New York office. Transaction volumes remain below historical norms, bid-ask spreads persist, and financing remains selective. This lag is precisely what creates opportunity.

Pricing data confirms a transition from paralysis to price discovery. While commercial real estate values declined materially from mid-2022, they have begun to recover. US office values are up approximately 5.4% over the past twelve months[10]—one of the first sustained periods of positive price movement since the downturn began—suggesting values are beginning to put in a cyclical bottom, particularly for higher-quality assets.

Debt markets are reinforcing this transition. Office lending spreads tightened through 2025, particularly for low-leverage loans. Senior office debt at conservative loan-to-value levels is now pricing just north of 200 bps over the 10-year Treasury, signaling growing lender confidence at the top of the capital stack.[11]

The largest remaining uncertainty lies in exit cap rates. However, current pricing already embeds a substantial adjustment. Underwriting to 5–6% exit cap rates for Class A assets—roughly 100–150 bps wider than historical norms—still generates attractive risk-adjusted returns.[12] These Class A assets will continue to benefit from replacement costs that have moved structurally higher, providing an opportunity for value-add investment and rent growth.

EXHIBIT 7: NYC OFFICE CAP RATES (2006–2025)



Source: Newmark Research, RXR estimates based on proprietary analysis of market comparables

As values stabilize, investor underweights are consequential. After several years of underperformance, many institutional investors reduced office exposure materially relative to benchmarks. Once prices begin rising, the focus will shift from a comfortable consensus underweight to the acknowledgement of opportunity, with capital flows and repricing are likely to follow.

THE "MAMDANI DISCOUNT" PROVIDES OPPORTUNITY

While the New York City office market resurgence flies under the radar, the election of Democratic Socialist Zohran Mamdani as mayor has dominated headlines. His far-left platform has sparked concern regarding taxes, rent regulation, and public safety.

Mamdani has proposed policies requiring significant funding, including free buses, universal childcare, and city-owned grocery stores, funded by tax hikes on the wealthy and corporations. However, real-world limitations constrain this rhetoric. Unlike in Los Angeles or San Francisco, New York's Governor exerts significant control over city operations and tax policy. Governor Kathy Hochul remains steadfast in her opposition to tax increases, citing the risk of capital flight.

Headlines regarding a "rent freeze" similarly lack attention to detail. The Mayor's control is limited to rent-regulated apartments (roughly one-third of supply) via appointments to the Rent Guidelines Board. Even if rents are "frozen" for this segment, they are already heavily regulated, averaging only 2.5% annual increases over the last five years. While affordability goals are admirable, price controls historically reduce supply, driving market-rate rents higher.

Notably, some of the Mayor's housing measures are encouraging, including incentives for new development. Regarding public safety, Mamdani is retaining the NYPD Commissioner, under whose leadership crime rates remain low.

On the ground, real estate fundamentals continue to power ahead. Leasing volumes are at post-COVID records, and luxury Manhattan home sales are up 25% month-over-month. While capital markets show a temporary impact—such as a 25-basis-point expansion in multifamily cap rates—we believe this "Mamdani discount" is an opportunity. NYC has weathered political changes before and continued to thrive long-term.

CONCLUSION

The recovery of the New York City office market is in full swing, yet it is not a simple return to prior norms; it is the emergence of a stratified, supply-constrained market where quality, location, execution, and operational capability matter most.

The central investment opportunity arises from a fundamental valuation dislocation. Operating metrics for high-quality Class A buildings are recovering with tightening vacancy, and double-digit rent growth, yet capital markets lag. These assets remain significantly below pre-COVID valuations and dramatically below replacement cost, providing a rare entry point into essential physical infrastructure.[13]

This recovery is reinforced by structural scarcity. Prospective deliveries for development have collapsed, and permanent inventory removal is driving demand into limited, high-quality supply. This dynamic sets the stage for the next building cycle, with best-in-class new developments commanding premium rents.

Crucially, Manhattan's office towers are the necessary physical layer for managing human intelligence—the irreplaceable architecture for deploying and commercializing AI. The New York market is serving as the organizational platform for the digital economy.

As AI reaches ever high valuations, the physical infrastructure enabling human intelligence is quietly repricing. For opportunistic investors ready to underwrite this new paradigm, New York City office offers a rare combination of discounted entry, improving demand visibility, and long-term strategic relevance.

A boom is building in New York office—not indiscriminately, but in the places where scarcity, talent, and capital still converge—it's important not to miss it.

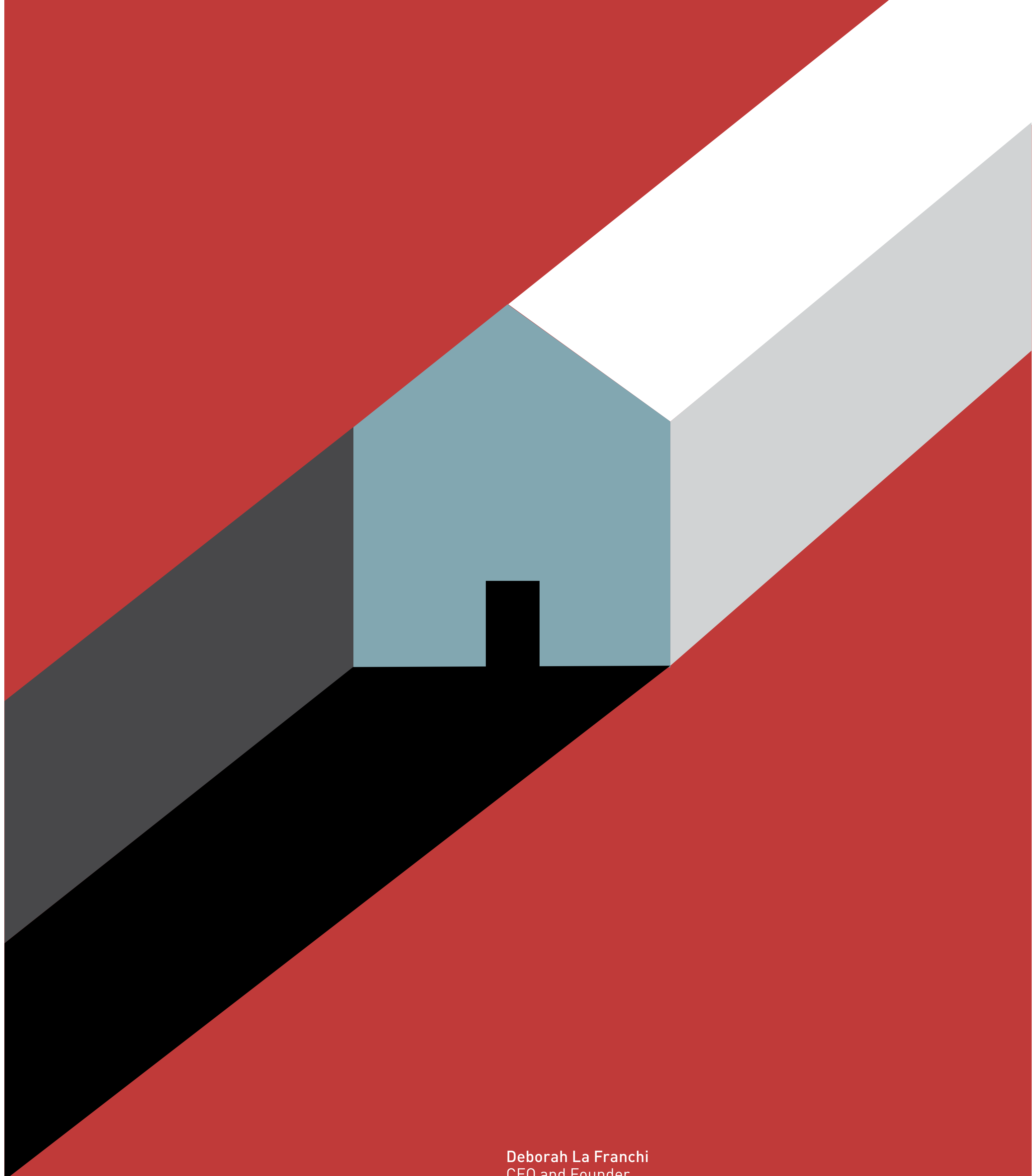
ABOUT THE AUTHOR

Scott Crowe is the head of investment strategy and capital formation at RXR, where he collaborates with partners to develop and implement the firm's investment and corporate strategies, and oversees the Equity Capital Markets team while serving on the RXR Investment Committee. Prior to joining RXR, he was the President and Chief Investment Strategist at BNY Mellon's CenterSquare, and previously held senior roles at Cohen & Steers, and UBS. Scott holds a Bachelor of Commerce and an Honors Degree in Finance, along with a Certificate of Real Estate Development from Cornell University.

NOTES

[1] RXR estimates based on proprietary analysis of recent transactions
[2] JLL Research Q3 2025
[3] JLL Research Q3 2025
[4] Colliers Research Q3 2025
[5] Center for Urban Future (CUF), "New York's Tech Sector: Driving the City's Post-Pandemic Jobs Recovery"
[6] JLL Research Q2 2024
[7] Savills Research, Q3 2025
[8] Ibid.
[9] CBRE Research Q2 2025
[10] Trepp Data Q4 2025
[11] Trepp, "Office Commercial Real Estate Spreads Hit 2025's Lowest Level as Lender Optimism Returns"
[12] RXR proprietary analysis
[13] RXR estimates based on proprietary analysis of recent and historic transactions

BEYOND MOTIVATION



Deborah La Franchi
CEO and Founder
SDS Capital Group

For institutional investors, it has been a longstanding perception that an investment in affordable housing could not generate alpha. However, over the past several years, economic and demographic forces are upending that perception and turning a social challenge into a compelling financial opportunity.

> There has been a longstanding perception that an investment in affordable housing could not generate alpha, but over the past few years, new economic and demographic forces are turning a social challenge into a compelling institutional opportunity.

THE PERFORMANCE AND RESILIENCE OF AFFORDABLE HOUSING IS DRIVEN BY A HISTORIC SHORTAGE OF UNITS

In the US, there is an estimated shortage of seven million affordable housing units; and it is a gap that continues to grow.[1] The consequences have been severe, with drastic increases in housing instability, rising homelessness, and families burdened by high rents.

Regrettably, this shortage is worsening as housing production slows. Higher interest rates and inflation have made new development far more expensive. Based on statistics from the Secured Overnight Financing Rate Index, construction lending rates have jumped over the past few years from around 4.5–5.5% (2018) to as high as 7.5–9%,[2] while the cost of materials such as concrete and steel is up over 40%.[3]

These financial pressures have pushed developers to migrate towards higher-income multi-family projects (or build-to-rent, as they are often known in other countries) where elevated rents can more effectively offset higher construction costs.

Between 2022 and Q4 2025, over two million units (2,122,291) of multifamily housing have been or will be built nationwide.[4, 5] with 13% of those units (272,872) being rent-restricted affordable housing for families earning less than 80 of Area Median Income (AMI).[6] For reference, 80% of the nationwide median income is just over $67,000[7]—in line with earnings for professions such as teachers, therapists, flight attendants, construction and building inspectors, property managers, and industrial mechanics.[8]

These years stand in great contrast to what is expected to occur over the coming four years due to increasing costs. From 2026 to 2029, just 1.6 million (1,623,111) new units are projected to come online (a quarter less than the prior four-year period).[9] In 2029, it is projected that 425,000 units of housing will come online, of which only 38,000 will be made affordable to households earning less than 80% AMI.[10] This scenario sets the stage for a dramatic reduction in the production of affordable housing.

EXHIBIT 1: HOUSING UNITS BUILT IN THE US

	TOTAL HOUSING UNITS BUILT	AFFORDABLE HOUSING UNITS BUILT
2022-2025	2,122,291	272,872 (13%)
2026-2029 (projected)	1,623,111	162,718 (10%)
Decline in affordable units built	110,154 (40%)	
Total Shortage of Housing Units	7,000,000	

Sources: Yardi Matrix, National Affordable Housing Report, October 2025 National Low Income Housing Housing Coalition Gap Report, 2025

These shortages, coupled with the steep slow-down in affordable housing production, are major contributors to more than half of all US renter households being cost burdened, or spending more than 30% of their income on housingknown as "Cost Burden".[11] In most communities, the low inventory of lower-cost housing alternatives, coupled with the limited number of new units being built, adds to this crisis.

This precipitous drop in housing affordability has resulted in a market dislocation that, conversely, creates a significant market opportunity for institutional investors to benefit their portfolios—as well as communities.

THE EVOLUTION OF US AFFORDABLE HOUSING STRATEGIES

Traditional Affordable Housing: Tax Credits for Low-Income Housing

Since 1986, low-income housing has been largely driven by the federal Low-Income Housing Tax Credit (LIHTC) program. The federal tax credits are awarded to real estate developers in a competitive, scored process. The primary subsidy (the 9% credit), has typically covered 70% of the project cost.[12] Of late, with inflation and high interest rates, these subsidies have covered a shrinking percentage of the project cost, necessitating more developers to secure additional government, nonprofit, and foundation financing.[13] In Los Angeles, for instance, a LIHTC project typically has 6-11 sources of government subsidy[14], ballooning the timeframe for such projects to cobble together these funding sources to stretch to an average of 3-5 years for a single project.[15]

Scaling Affordable Housing Using Private Capital

About a decade ago, a range of real estate developers and fund managers, seeing the increasing unmet demand for affordable housing, the increasing need for more subsidy, and growing cost of projects relying on such complex capital stacks, began expanding the use of financing models grounded in tapping private sector debt and equity.

These funds also incorporate a mix of incomes—including workforce housing (typically affordable to incomes of 80% to 120% of the area median income) and market-rate rents, to enable the economics of the project to support the affordable units. Over the same period, as the shortage of affordable housing impacted communities across the country, many cities, counties, and states began innovating with their own incentives to attract more affordable housing development to their communities (see Austin, TX., tax exemption example).

For instance, in Texas, projects can qualify for a 100% property tax exemption. A 200-unit project can claim an annual property tax abatement, worth approximately $900,000 to $1 million a year, if the owners commit through a covenant to a reserving at least 10% of the units for households making less than 60% of AMI, and an additional 40% of the units are affordable to families earning less than 80% of AMI. These incentives typically boost net operating income by a full 20% to 25%. These types of incentives—particularly across the South where states and localities are very competitive for new business—have been very effective at incenting developers to their communities.

Atlanta, GA Apartments

ASCP fund equity supported the development of this 325-unit workforce housing complex. Located in Atlanta's Adair Park neighborhood, this transit-oriented development will have direct access to the Atlanta Beltline Southside Trail. This project is also remediating Brownfield site in compliance with the State of Georgia's Hazardous Site Response Act.

PROJECT DETAILS	
UNITS	325 (300 APARTMENT UNITS, 25 TOWNHOMES)
DEVELOPMENT TYPE	CLASS A MIXED-USE DEVELOPMENT, MULTIFAMILY + TOWNHOMES + COMMERCIAL
TOTAL CAPITAL COST	$98.88M (~304,257 PER UNIT)
EXIT	ACTIVE DEAL
AFFORDABILITY LEVEL	20% OF UNITS AFFORDABLE AT <80% AMI
COST-BURDEN OF COMMUNITY	47%

THE OPPORTUNITY – AND THE PERFORMANCE DATA BEHIND IT

Over the past four decades, the financing for affordable housing has predominantly fallen within the purview of government agencies, nonprofits, and foundations. This reality helped cement the misconception that financing affordable housing was misaligned with the needs of institutional portfolios.

More recently, for the reasons noted in this article, affordable housing has begun to attract serious attention from institutional investors as they consider fund managers that focus on this niche investment strategy. The data on the performance and resilience of this asset class, as well as the growing number of managers executing in this space, have been key catalysts behind this growing interest. By way of example, these projects are often very institutional in nature. The sponsors have often undertaken dozens of similar projects over their careers and understand the space deeply. The returns to the equity investor is often in the mid-teens to low-20's, and the project is of very high quality. The Atlanta, GA and the Austin, TX apartment project profiles in this article both exemplify the types of investments that fall within these parameters.

A range of recent studies from the National Bureau of Economic research[16], RCLCO[17], Nuveen[18], and the National Council of Real Estate Fiduciaries (NCREIF)[19] have aligned findings, often centering on how affordable housing assets exhibit lower vacancy and tenant turnover rates and have a lower correlation to macroeconomic swings compared to multifamily housing targeting higher income tenants.

A 2024 study by the Pension Real Estate Association (PREA) found that over a 16-year period (Q1 2008–Q1 2024), the unlevered average annual return of the most affordable properties serving households at or below 80% AMI outperformed those serving households above AMI by 239 basis points (see table).[20] The primary reason cited for this is lower vacancy rates due to more limited tenant turnover.

EXHIBIT 2: PERFORMANCE OF MOST AFFORDABLE HOUSING VS. LEAST AFFORDABLE

	MOST AFFORDABLE* <80% AMI	MID-MARKET (WORKFORCE) ≤120% AMI	LEAST AFFORDABLE > 120% AMI
Compound Average Annual Return, 1Q 2008 to 1Q 2024	6.54%	5.62%	4.15%

Sources: Yardi Matrix, National Affordable Housing Report, October 2025 National Low Income Housing Housing Coalition Gap Report, 2025

Our firm's recent investment experience through the American South Real Estate Funds mirrors these findings. In cost-burdened communities, where over 30% of households spend more than 30% of their income on housing, the demand-supply gap is glaringly obvious. Newly constructed units lease up rapidly, often with waitlists forming before construction is complete. Once leased, tenants are much less likely to leave, given the scarcity of alternatives at similar price points.

Unlike many real estate asset classes, our team regularly witnesses how market demand for affordable housing increases with macroeconomic uncertainty. Families tighten budgets, seeking stability and lower rents, which contributes to the resilience of affordable housing as a niche investment opportunity.

Austin, TX Apartments

ASCP fund equity supported an innovative, woman-owned developer for the acquisition and rehabilitation of 148 now stabilized, long-term, low-income housing units. The opportunity focused on repositioning this historically under-managed property, improving its performance, and securing a 100% property tax exemption in exchange for hiring a social worker onsite ($75k/year). The abatement saves roughly $400k annually.

PROJECT DETAILS	
UNITS	148
DEVELOPMENT TYPE	VALUE-ADD AFFORDABLE HOUSING PRESERVATION
TOTAL CAPITAL COST	$21M
EXIT	REFINANCED EQUITY FROM DEAL
AFFORDABILITY LEVEL	100% OF UNITS AFFORDABLE AT <60% AMI
COST-BURDEN OF COMMUNITY	48%

A NICHE MARKET WITH A GROWING TRACK RECORD

Twenty years ago, there were few investment vehicles within this space for institutional investors to consider. Early pioneers—such as the Genesis Workforce Housing Fund—were testing unproven theses.[21] Since then, the landscape has dramatically changed. A growing cohort of specialized managers who have launched affordable housing platforms now have a track record of more than a decade within this space, providing investors with the performance data they need to evaluate these options.

Peter Braffman, Head of Real Estate at GCM Grosvenor and one of our most recent investors and strategic partners, has pointed out how his own perception of affordable housing has changed over time: "Before the Global Financial Crisis, we didn't view this strategy as compatible with traditional institutional investing, whether from a return standpoint or in terms of providing sufficient liquidity for shorter-duration vehicles. Today, we see it very differently - and far more positively."

Over the past decade, sponsors acquiring and rehabilitating affordable housing—as well as those constructing new projects (i.e., developers)—have increasingly utilized private-sector debt and equity. More developers perceive the pace of public-sector investment at the federal level as slowing substantially over the years—or being eliminated—and have opted to tap into private capital. For instance, the Austin project profiled in this article, tapped the American South Real Estate Fund II for its equity, rather than undertaking a longer and more time intensive process to secure additional public-sector sources.

Properly structured, private capital is faster and more flexible than government or nonprofit funding sources. Securing public-sector, foundation, and nonprofit financing can often take 4-7 years while private capital can move into projects within a matter of weeks or a few months. Affordable housing developers value the speed, flexibility, and scalability that private equity real estate investment platforms can provide. They also appreciate having equity partners that deeply understand the ecosystem of affordable housing, given the many nuances and complexities involved to make a capital stack work.

While many developers have recently been shying away from federal subsidies, there is a growing number of local and state incentive programs being created to mitigate housing affordability challenges. Developers interested in taking advantage of these programs are finding that these incentives can be quite accretive to their project bottom line. Utilizing private-equity real estate funds enables these developers to move quickly once they leverage into these more straightforward local and state programs (compared to complex federal programs).

The most successful developers in this space are those who are adept at pivoting as the market shifts. Many have refined replicable construction models for greater cost and time frame efficiency, built specialized contractor and subcontractor relationships, or deployed new technology that reduces both development and operating costs. Such innovative development strategies are most successful because they seek out opportunities even in uncertain markets.

WHY NOW?

Investing in affordable housing, due to the range of factors noted above, is increasingly viewed as a solid and strategic option for sponsors seeking more conservative, resilient, and niche strategies that are less correlated to the macro economy. And, for investors who might be overexposed to high-income housing, affordable housing offers a diversifying opportunity.

Affordable housing is not just a moral imperative for society. It's an investment opportunity hiding in plain sight.

ABOUT THE AUTHOR

Deborah La Franchi is CEO and Founder of SDS Capital Group and Managing Partner of the American South Captial Partners. SDS Capital Group is a woman-owned IA 50 Emeritus Manager and pioneer and leader in the field of impact investing.

NOTES

[1] National Low Income Housing Coalition, Gap Report;

[2] Federal Reserve Bank of New York, "Secured Overnight Financing Rate Data," Markets & Policy Implementation: Reference Rates, 2025

[3] Federal Reserve Bank of St. Louis., Producer Price Index by Commodity: Special Indexes: Construction Materials

[4] Yardi Matrix, "U.S. multifamily supply up and rents down," Yardi Matrix, Oct. 30, 2024.

[5] Yardi Matrix, "Yardi Matrix forecasts moderating multifamily development, record deliveries in 2024," Yardi, Feb. 12, 2024.

[6] Yardi Matrix, "National Affordable Housing Report – October 2025," Multi-Housing News, Oct. 24, 2025

[7] U.S. Census Bureau, Income in the United States: 2024, Current Population Reports, no. P60-286, Washington, DC, Sep. 2025.

[8] U.S. Bureau of Labor Statistics, "Occupational Employment and Wage Statistics: Real Estate Brokers and Sales Agents," May 2023.

[9] G. Kalinoski, "A closer look at affordable housing supply challenges," Multi-Housing News, Oct. 8, 2024.

[10] Yardi Matrix, "Multifamily Forecast Sees Higher Completions Through 2027," CRE Daily, Aug. 8, 2025.

[11] Harvard Joint Center for Housing Studies (JCHS), "The State of the Nation's Housing 2025"

[12] Y. Kuai, "The Low-Income Housing Tax Credit Program: A Comprehensive Review," Fannie Mae, Jan. 2024

[13] T. Zahalak, "LIHTC Properties Facing Challenging Times," Multifamily Affordable Housing Commentary, Fannie Mae

[14] United Way of Greater Los Angeles, "Affordable Housing Initiative Investor Report 2023, 2023"

[15] The Affordable Housing Process, Local Initiatives Support Corporation (LISC) Alameda County Housing Development Capacity Building Program, 2019

[16] S. Damen, M. Korevaar and S. Van Nieuwerburgh, "An Alpha in Affordable Housing?," National Bureau of Economic Research, Working Paper 33470, Feb. 2025.

[17] W. Maher and S. Bommarito, "Affordable Housing – Stable Returns With Positive Social Impact," PREA Quarterly, Mar. 2022.

[18] D. Manware and P. West, "Impact Investing: The Continued Resilience of U.S. Affordable Housing Investments," Nuveen Real Estate, 10 Jul 2024.

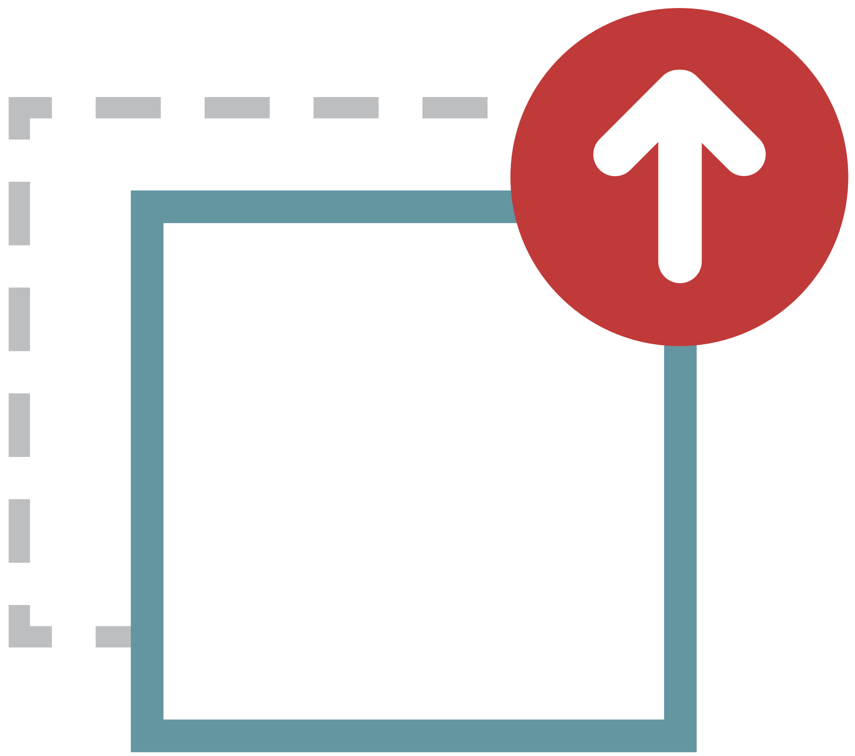
[19] National Council of Real Estate Fiduciaries (NCREIF), Affordable Housing: A Lower-Risk, Stable Return Investment, NCREIF Research Note, Chicago, IL, 2022.

[20] Pension Real Estate Association, Report

[21] https://genesisfund.org/workforce-housing-finds-tremendous-demand/

Affordable housing is not just a moral imperative for society. It's an investment opportunity hiding in plain sight.

REDEFINING THE RENTER



Paul Kolevsohn
Managing Director, Investment Strategy and Research
Stockbridge

Alex Lachman
Managing Director and Portfolio Manager
Stockbridge

Lev Kling-Bronstein
Senior Associate, Investment Strategy and Research
Stockbridge

Don Walker
Managing Principal
John Burns Real Estate Consulting

Kevin Cody
Senior Manager, Consulting
John Burns Real Estate Consulting

Build-to-Rent: Redefining Housing for Renters and Investors.

Build-to-rent (BTR) is emerging as an important segment in the US housing market, offering purpose-built rental communities designed for longer-term occupancy while providing renters with a new, professionally managed alternative to conventional housing options.

Its rise is driven by homeownership affordability challenges, low housing supply, shifting renter preferences, families moving to a new area who want to learn about the market before buying a home, and demand from households that previously owned a home and no longer want maintenance responsibilities.

These favorable dynamics, combined with the fragmented nature of the market, are driving growing interest from institutional investors seeking scalable opportunities. As homeownership becomes less attainable due to high mortgage interest rates and rising home prices, we believe BTR provides an attractive alternative, combining the benefits of single-family living with professional property management across communities of newly built homes.

This article explores the fundamentals of BTR, its appeal to tenants and investors, and the market outlook for this growing asset class.

WHAT IS BUILD-TO-RENT (BTR)?

BTR, as defined by John Burns Research and Consulting (JBREC), refers to purpose-built rental communities with at least twenty-five unstacked units constructed after 1995. Subsidized housing is not included in this definition. BTR developments fall into five primary categories: horizontal apartments or cottages, single-level row homes, townhomes, single-family detached homes, and mixed-product communities.

Unlike traditional apartment buildings, BTR units offer more privacy, often within a detached building with a yard and a garage. The home sizes can range substantially, with the smaller end, usually the same size as a typical one-bedroom apartment, to a larger single-family detached home with up to five bedrooms and around 2,000 square feet.

Compared to scattered-site single-family rentals (SFR) typically managed by smaller "mom-and-pop" investors held across dispersed locations, BTR communities provide uniform design, are built to the latest construction codes with energy efficiency in mind, benefit from centralized maintenance and professional management, and often provide residents with amenities such as walking trails, dog parks, and pools.

Amenitized single-family detached BTR communities with onsite management and maintenance command an average rent premium of 15.6% over scattered-site SFR properties.

While mom-and-pop investors still own the majority of SFR homes (76.8%), institutional operators managing a thousand or more homes comprise just 3.3% of the market. This fragmentation presents an opportunity for sophisticated investors to aggregate portfolios, introduce operational scale, and cost efficiencies.

EXHIBIT 1: BUILD-TO-RENT PRODUCT TYPES

PRODUCT CATEGORY:	HORIZONTAL APARTMENTS (COTTAGES)	SINGLE-LEVEL ROWHOMES	TOWNHOMES	SINGLE-FAMILY DETACHED	MIXED
	Small single-family detached and attached homes	Single-level homes in 2-7 unit building configurations	Multi-story homes in 2-10 unit building configurations	Detached homes on traditional lots	A mixed of product categories
TYPICAL HOME SIZE RANGE:	650 sq. ft. 1 bd/1 ba – 1,350 sq. ft. 3 bd/2 ba	1,000 sq. ft. 2 bd/2 ba – 1,700 sq. ft. 3 bd/2 ba	1,300 sq. ft. 2 bd/2.5 ba – 1,800 sq. ft. 4 bd/2.5 ba	1,400 sq. ft. 3 bd/2 ba – 2,000 sq. ft. 4 bd/3 ba	600 sq. ft. 1 bd/1 ba – 2,000 sq. ft. 4 bd/3 ba

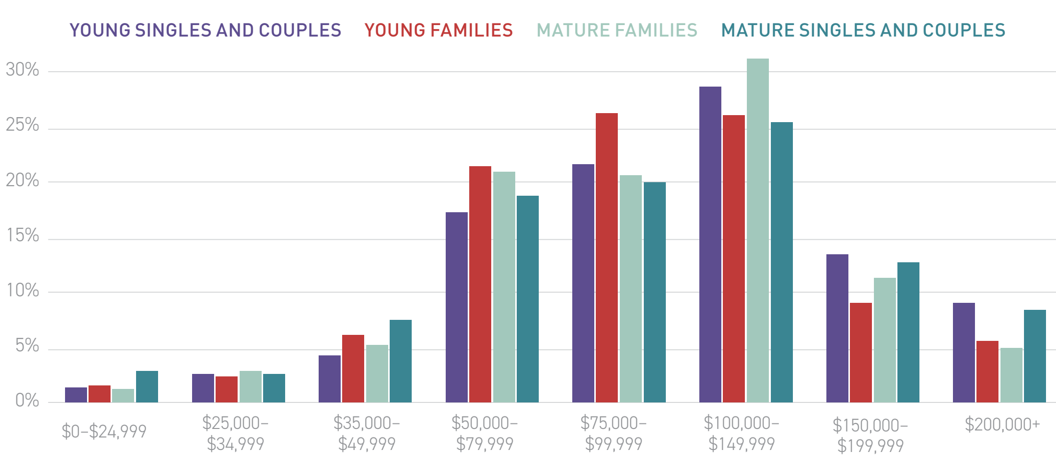
Source: John Burns Real Estate Consulting

BTR APPEALS TO TENANTS, AND BTR TENANTS APPEAL TO INVESTORS

Rising home prices, mortgage rates, and non-housing debts such as student loans and auto loans have put homeownership out of reach for many Americans. Since 2019, the average cost of owning a home has increased significantly, while the US housing market remains undersupplied with attainably priced homes. As a result, rental demand has been strong, particularly for BTR communities that offer an attainable and well-managed alternative to homeownership.

On average, the cost of homeownership is 39% higher than renting in a BTR community. Moreover, BTR tenants tend to be more affluent, with 50% earning a household income of more than $100,000 annually, according to JBREC. For context, just 21% of all renter households have an income over $100,000, per the US Census, whereas approximately 55% of Stockbridge's BTR residents maintain an adjusted household income over $100,000. As a result, BTR tenants may have stronger credit profiles and be more reliable renters than the average tenant.

EXHIBIT 2: ANNUAL HOUSEHOLD INCOME – SHARE OF BTR TENANTS BY LIFE STAGE



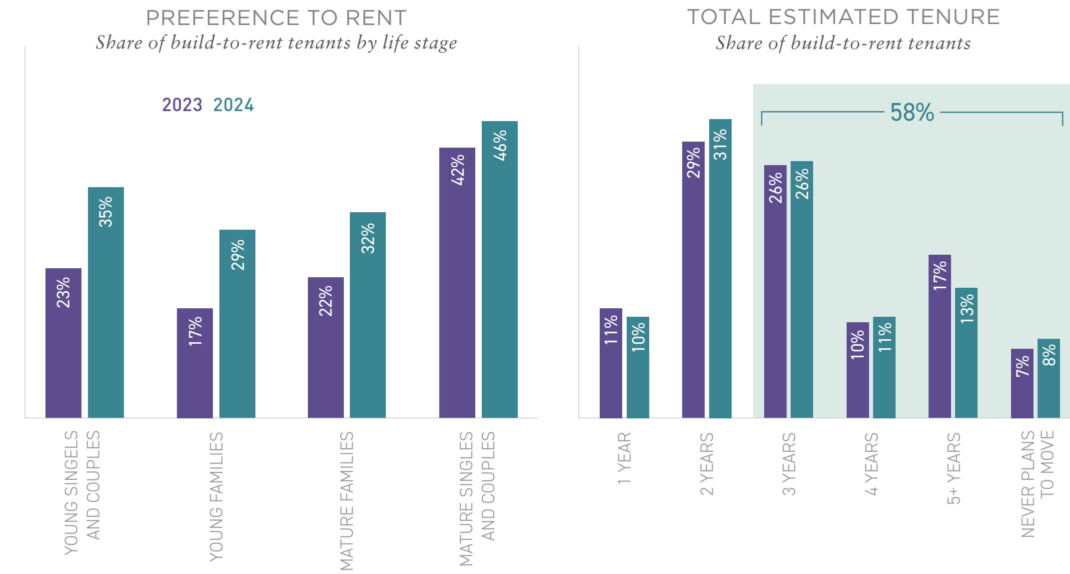
Source: New Home Trends Institute by John Burns Real Estate Consulting, LLC May – June 2024 Survey of 7,625 build-to-rent tenants across the US

BTR tenants tend to be more affluent, with 50% earning a household income of more than $100,000 annually, according to JBREC.

JBREC's New Home Trends Institute survey data underscores BTR's strong retention rates. BTR tenants exhibit a turnover rate of 35–40%, lower than the 40–50% turnover rate typical of traditional apartment renters.

Additionally, nearly 60% of BTR tenants expect to remain in their current home for at least three years, reflecting a growing preference for long-term rental living across all life stages. We believe this more stable renter profile can offer BTR investors and owners a consistent and dependable income stream throughout phases of the market cycle.

EXHIBIT 3: BTR TENANTS PREFERENCE TO RENT AND EXPECTED TENURE



Source: New Home Trends Institute by John Burns Real Estate Consulting, LLC May – June 2024 Survey of 7,625 build-to-rent tenants across the US

MARKET FUNDAMENTALS AND OUTLOOK

Following a period of rapid expansion of completed new rental home deliveries, we believe the BTR sector is entering a phase of healthy stabilization in 2025 and beyond. Occupancy remains strong at approximately 95% nationally, even amid elevated supply levels.

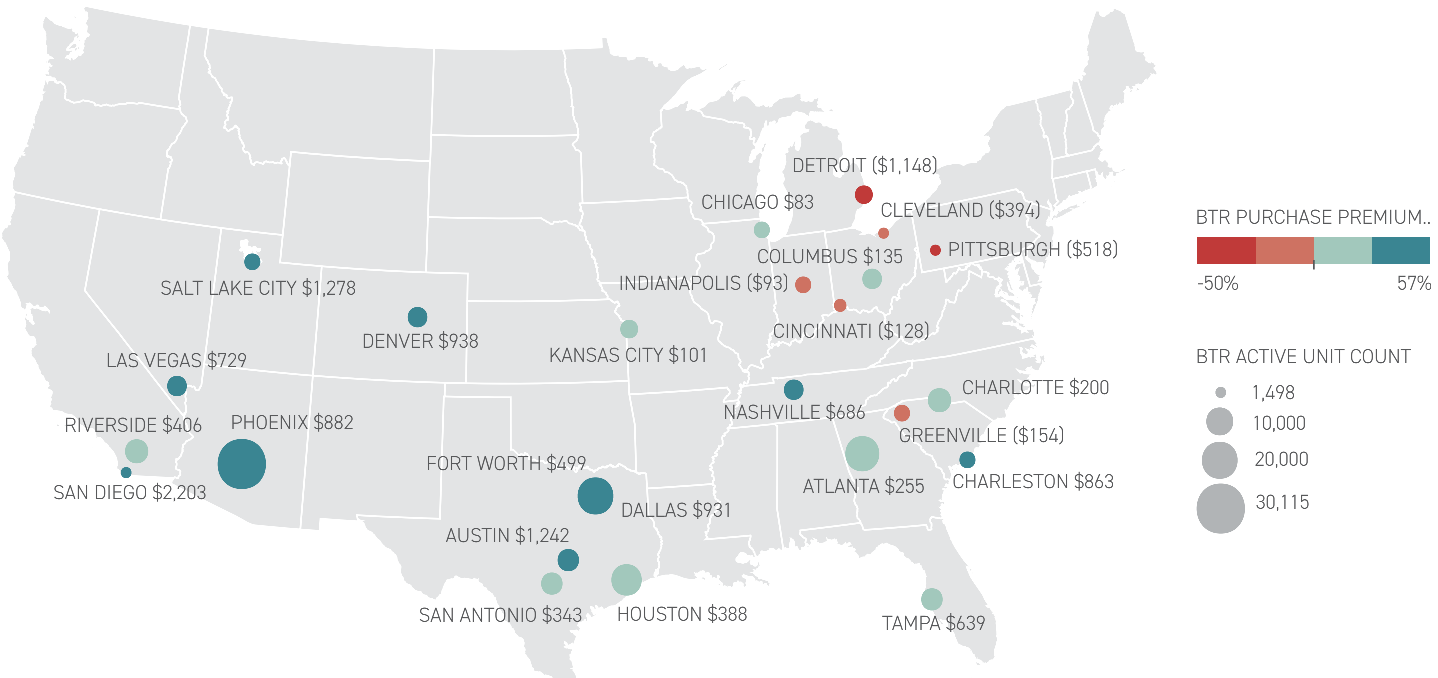
National BTR rent growth has temporarily leveled off but is expected to remain positive in 2025 and increase through 2028, as demand absorbs the recent supply wave. Annual rent growth of 0.8% in 2025 and between 2% and 3.5% from 2026 through 2028 is forecasted.

Importantly, the relative oversupply of BTR homes has been concentrated in a handful of metro areas that exhibited above-normal housing demand following the pandemic but now appear to be reverting to normal growth trends. We believe this suggests that the broader BTR market remains fundamentally sound, with strong long-term demand drivers and resilient performance across cycles.

Looking ahead, we believe the most promising BTR investment opportunities will be in markets experiencing strong migration trends and balanced supply-demand dynamics. We additionally believe that demand will favor regions where homeownership costs significantly exceed BTR rent levels, and local government policies and economic drivers support job growth.

Annual rent growth of 0.8% in 2025 and between 2% and 3.5% from 2026 through 2028 is forecasted.

EXHIBIT 4: FOR SALE COST TO PURCHASE PREMIUM VS. BUILD-TO-RENT MONTHLY RENT BY MARKET



Source: Home payment, entry-level home (mortgage): 5% down payment, 30-year fixed-rate mortgage, PITI payment, plus mortgage insurance payment. Per John Burns Real Estate Consulting based on aggregated data from RealPage, Inc. and Yardi Matrix.

RESHAPING THE LANDSCAPE

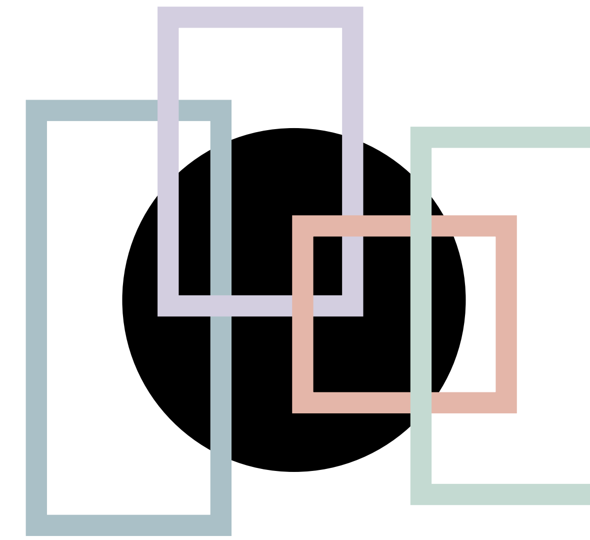
Build-to-rent is reshaping the rental housing landscape, providing a viable alternative to traditional homeownership, apartment living, or scattered single-family rentals, typically in older homes managed by mom-and-pop landlords. With strong tenant demand, lower turnover rates, and operational efficiencies, we believe BTR offers a compelling investment opportunity.

Data suggest that BTR is poised for sustainable long-term growth, particularly in high-demand regions facing ongoing affordability challenges or other supply-constrained markets. Further, BTR is gaining traction in markets with more modest household growth, where institutional competition is limited.

This dynamic supports what we believe to be a favorable supply/demand balance, contributing to a more stable and predictable rent growth trajectory. By offering professionally managed, high-quality rental housing, we believe BTR continues to bridge the gap between renting and homeownership in today's evolving housing market.

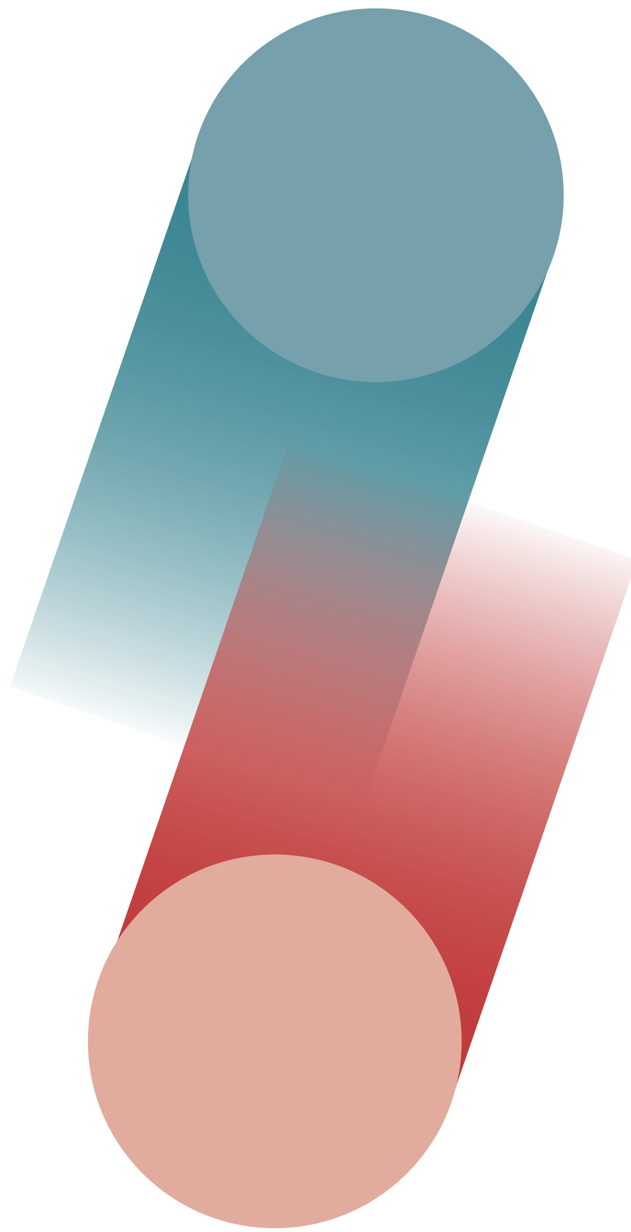
ABOUT THE AUTHORS

Paul Kolevsohn is Managing Director of Investment Strategy and Research; Alex Lachman is Managing Director and Portfolio Manager; and Lev Kling-Bronstein is a Senior Associate of Investment Strategy and Research for Stockbridge. Don Walker is Managing Principal and Kevin Cody is Senior Manager of Consulting for John Burns Real Estate Consulting.



Data suggest that Build-to-Rent is poised for sustainable long-term growth, particularly in high-demand regions facing ongoing affordability challenges or other supply-constrained markets.

INFLATION FIGHTERS



EJ Wislar
Managing Director, Mission-Critical Assets
PRP Real Assets

Amid an extended period of uncertainty, mission-critical triple-net lease (NNN) investing has emerged as a compelling strategy, offering predictable income, contractual rent escalations, and insulation from expense inflation.

Persistent inflation has challenged institutional investors across asset classes. Fixed-income returns have been eroded, equities have become more volatile, and many real estate sectors are struggling with rising operating costs.

Amid this uncertainty, mission-critical triple-net lease (NNN) investing has emerged as a compelling strategy, offering predictable income, contractual rent escalations and insulation from expense inflation. Reshoring and onshoring trends create a unique opportunity to develop or acquire highly functional assets leased to investment-grade tenants for lease terms exceeding ten years.

For global allocators, NNN investments represent a rare opportunity: combining the stability of bond-like income with the upside potential of real assets. Further, cash yields exceed those of the bonds of the underlying tenant while providing long-term upside. By aligning with essential, mission-critical tenants under long-term contracts, NNN provides the inflation protection and resilience that institutional portfolios increasingly require.

THE INFLATION CHALLENGE FOR INSTITUTIONAL INVESTORS

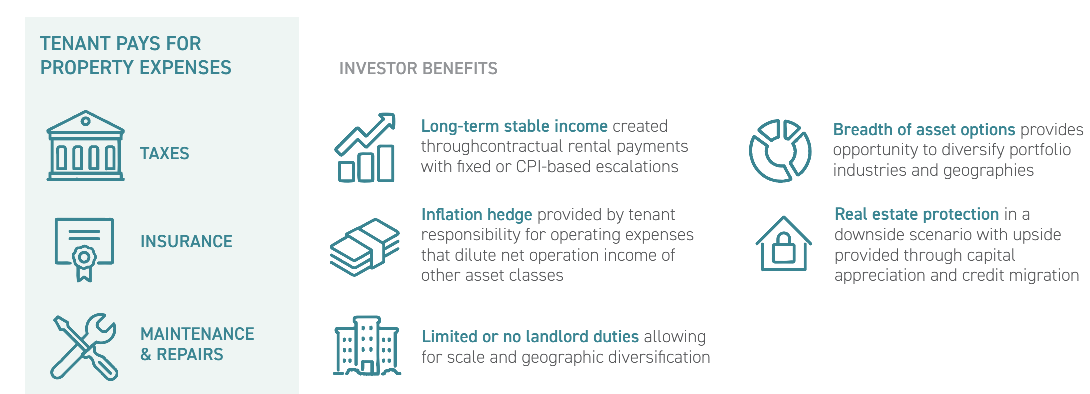
Inflation has reasserted itself as a persistent feature of the global economy. Even as central banks raise rates, core inflation in developed markets remains above policy targets. In emerging economies, energy and commodity price volatility has exacerbated inflationary pressures.

For institutional investors, the consequences are clear:

- Fixed income: Real yields on government bonds remain depressed when adjusted for inflation.
- Equities: Rising wages, materials and energy costs compress corporate margins and amplify earnings volatility.
- Real estate: While real assets are traditionally viewed as an inflation hedge, not all sectors are equally protected. Multifamily and office owners, for example, face higher property taxes, insurance premiums, and maintenance costs, which landlords must absorb, reducing net operating income and depressing valuations.

The challenge is to identify asset classes within real estate that truly hedge inflation. Mission-critical NNN investing is one of the few strategies that delivers this protection consistently.

EXHIBIT 1: THE BENEFITS TO INVESTORS OF NNN LEASES



Source: PRP Real Assets

WHAT IS MISSIONCRITICAL NNN INVESTING?

An NNN lease is a contractual structure in which the tenant, not the landlord, is responsible for property taxes, insurance and maintenance, among all other operating expenses. This structure shifts virtually all operating cost risk away from the property owner. Key features include:

- Long-term leases: Typically 10–20 years, these provide long-term optionality for investors.
- Creditworthy tenants: By focusing on investment-grade counterparties, investors can acquire assets with long-term credit protection.
- Predictable cash flow: Rental payments are contractual, not contingent on variable property-level expenses.

By insulating owners from operating cost volatility, NNN investments deliver a level of income predictability that other real estate sectors cannot match.

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WHY NNN WORKS IN HIGHINFLATION ENVIRONMENTS

- Built-in rent escalations: NNN leases typically include fixed annual increases of 2.5% or more, or in some cases escalations tied to CPI. These mechanisms provide a direct hedge against inflation by ensuring income grows over time. Unlike a bond coupon, which remains fixed, NNN income streams maintain or increase their real value.
- Tenant credit quality: Some mission-critical NNN assets are leased to investment-grade corporates or essential operators. The facilities are mission critical to the tenant's business, reducing the likelihood of default or relocation: for example, a manufacturing facility leased to a Fortune 500 operator that has invested significant capital into the facility or chose the specific location due to its proximity to consumers or suppliers.
- Expense passthroughs: Property taxes, insurance premiums, and maintenance costs, all of which rise during inflationary periods, are paid by tenants. This shields net operating income from erosion.
- Resilience across cycles: As mission-critical NNN assets are tied to operations rather than discretionary activities, tenants prioritize maintaining occupancy and lease payments even during downturns. This operational necessity adds a layer of resilience uncommon in other sectors. This resilience was proven when PRP experienced 100% rent collections during the COVID-induced recession within its NNN portfolio of more than twenty investment-grade tenants.

SECTOR EXAMPLES OF NNN RESILIENCE

- **Logistics and distribution:** The growth of ecommerce and the reconfiguration of supply chains through reshoring and nearshoring have created demand for logistics facilities and shifted demand across the United States. In inflationary environments, transportation and fuel costs rise, further increasing the importance of strategically located warehouses. NNN structures lock in tenant commitments, with inflation protection built into the lease.
- **Manufacturing:** Industrial policy in the US and Europe, from the Inflation Reduction Act, CHIPS Act, and One Big Beautiful Bill Act, has incentivized billions in reshoring and continues to provide a tailwind to mission-critical net lease investing. Manufacturers invest heavily in their facilities, embedding specialized machinery and automation that make relocation costly. NNN leases on these properties create sticky tenant relationships and long-term income security.
- **Data centers:** Digital transformation, cloud migration and AI are driving unprecedented demand for data center capacity. Rising utility and maintenance costs are borne by tenants in NNN structures, while landlords collect stable, escalating rents. With hyperscale tenants often committing to long-term leases, data centers under NNN structures provide one of the strongest inflation hedges in real estate.
- **Healthcare and pharmaceutical manufacturing:** Labs and pharmaceutical and biomanufacturing facilities are capital intensive, highly regulated, and difficult to replicate. Even as healthcare wages and supply costs rise, landlords remain insulated through passthrough structures. For institutions, NNN healthcare manufacturing and logistics investments combine social utility with defensive income.

EXHIBIT 2: COMPARING MISSION-CRITICAL AND LEGACY NNN LEASE STRATEGIES

MISSION-CRITICAL NNN STRATEGY	VS	LEGACY NNN STRATEGY
Tier 1 IG tenants within 'new economy'		Sponsor-backed middle-market with high leverage
Opportunistic hold period to maximize value		Perpetual hold
New generation class A assets		Class B/C tertiary product with high obsolescence risk
Primary markets with strong rent growth		Tertiary and secondary markets with limited upside
Multiple exit strategies		Perpetual hold creating orphaned asset risk
Focus on asset classes with strongest macro-tailwinds		Asset class agnostic

Source: PRP Real Assets

NOT ALL NNN IS CREATED EQUAL

NNN investing spans asset classes, regions and credit quality. Assets such as hospitals, retail, and office may be structured under NNN leases. Further, many NNN leases are with unrated or sub–investment-grade tenants, creating default risk and the potential for complete loss of income. In a period of high inflation and elevated interest rates, these sub–investment-grade tenants with high leverage levels are exposed to rising interest expense and refinance risk, eroding credit quality. Finally, legacy assets may be mission critical to an underlying operation, but they face significant functional obsolescence if they do not boast modern configurations with adequate power, clear heights, column spacing and truck-court depth.

By focusing on recently constructed or build-to-suit assets leased to investment-grade counterparties, a focus on mission-critical NNN assets mitigates many of the risks associated with legacy NNN investments.

COMPARISON TO OTHER ASSET CLASSES

- Bonds: While bonds provide fixed coupons vulnerable to inflation erosion, NNN assets offer contractual income with built-in growth, plus the potential for capital appreciation.
- Equities: Public equities may deliver higher nominal growth but are subject to significant volatility during inflationary cycles. NNN returns are contractual, not dependent on market sentiment.
- Other real assets: Multifamily landlords absorb rising property expenses. Office owners face weak demand, capital expenditure burdens, gross leases (providing operating expense exposure) and tenant improvement costs. Industrial owners without NNN structures remain exposed to expense volatility. Mission-critical NNN stands apart as the most insulated model.

Focusing on recently constructed or build-to-suit assets leased to investment-grade counterparties, a focus on mission-critical NNN assets mitigates many of the risks associated with legacy NNN investments.

THE INSTITUTIONAL ALLOCATION CASE

For global allocators, mission-critical NNN investing offers several advantages:

- Diversification: Exposure can be spread across industries, geographies and tenant credit profiles.
- Scalability: Mission-critical NNN transaction sizes often exceed $50 million, allowing for efficient deployment of institutional capital.
- Stagflation hedge: When both equities and bonds underperform, NNN provides stable, growing income streams.
- Global relevance: Global investors are increasingly pursuing strategies that deliver income with inflation protection and long-term upside. Mission-critical NNN delivers on this mandate.

By acting as an income-producing real asset investment within alternatives allocations, NNN can stabilize portfolio returns in volatile macroeconomic environments.

For institutional investors navigating this environment, NNN investing provides a rare combination: bond-like stability, contractual growth and insulation from operating expense inflation.

RISKS AND MITIGANTS

Like any strategy, NNN investing carries risks, but these can be mitigated through disciplined underwriting:

- Tenant credit risk: Mitigated by focusing on investment-grade tenants and essential operating assets. Further, this can be mitigated by focusing on growth and avoiding potential fallen angels.
- Sector obsolescence: Addressed by targeting logistics, manufacturing and digital infrastructure that benefit from long-term megatrends and are recently constructed or to-be-built assets that are highly functional for today's users.
- Illiquidity: Reduced through portfolio diversification and exit optionality, including sales to REITs or recapitalizations.
- Escalation limits: Fixed escalations may trail actual inflation in extreme environments; inflation-driven rent growth may provide mark-to-market opportunities upon the renewal of the lease.

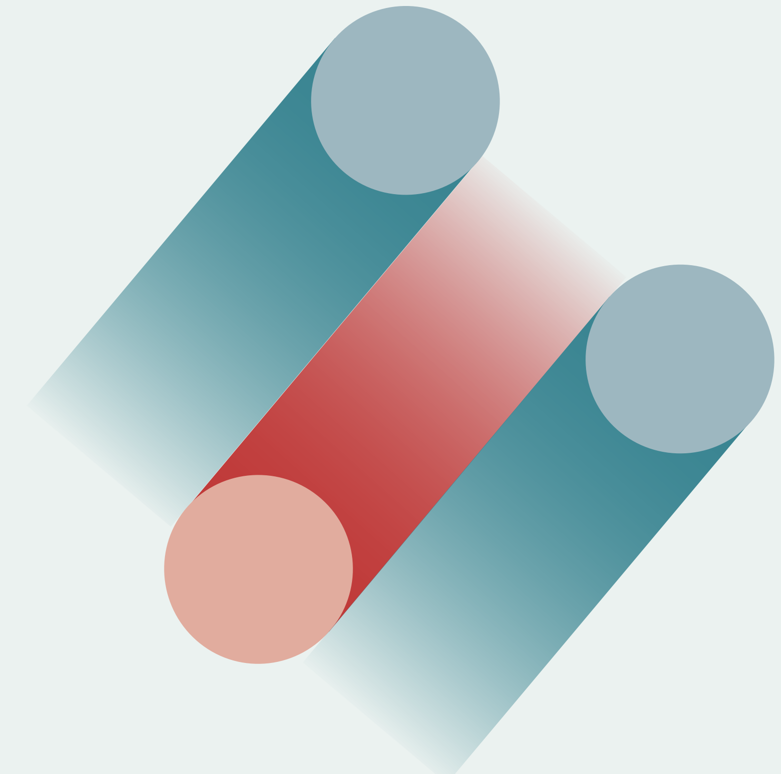
MISSIONCRITICAL NNN AS THE 'INFLATION BUSTER'

Inflation is once again a defining feature of global capital markets. For institutional investors navigating this environment, NNN investing provides a rare combination: bond-like stability, contractual growth and insulation from operating expense inflation. Anchored by essential, mission-critical properties, NNN assets are uniquely positioned to deliver predictable, long-term yield with upside potential.

In short, NNN investing is not only an alternative allocation, but also a true "inflation buster," offering the defensive resilience institutions need in an era of persistent macroeconomic volatility.

ABOUT THE AUTHOR

EJ Wislar is Managing Director, Mission-Critical Assets for PRP Real Assets, which specializes in the acquisition, development, and asset management of high-conviction real estate investments across the US.



NNN investing is not only an alternative allocation, but also a true "inflation buster," offering the defensive resilience institutions need in an era of persistent macroeconomic volatility.

WHY NOT BOTH?

Gleb Nechayev
Head of Research, Chief Economist
Berkshire Residential Investments

Investors looking to achieve the best risk-adjusted returns on their private real estate investments, might consider including private real estate debt as part of their real estate allocation rather than the fixed income allocation.

The case for combining equity and debt investments in a portfolio is almost a century old. Benjamin Graham, who is widely known as the “father of value investing,” was one of the first to suggest that a portfolio should be reasonably split between the two asset classes, often using 50/50 as a starting point.

Ever since the invention of the modern portfolio theory (MPT) in the 1950s, institutional and private investors have been experimenting with various equity and debt allocations to optimize risk-adjusted returns of their holdings, with real estate and alternative asset classes being among the relatively more recent additions to the framework.

In this article we make a similar case for combining equity and debt investments, but in the context in the context of a private real estate portfolio. Traditionally, institutional investors treat private real estate debt as part of their fixed income allocation rather than real estate. While there are some practical reasons behind the current approach, it does not mean that it is always the best one. In fact, we would argue that investors looking to achieve the best risk-adjusted returns on their private real estate investments might consider including private real estate debt as part of their real estate allocation rather than the fixed income allocation.

Just because investors have been following a certain approach for decades does not mean it is their only viable option. For example, Berkshire’s experience of the last two decades suggests that combining private apartment equity and debt investments into an optimized portfolio can produce substantially higher risk-adjusted return relative to investing in them separately.

We also come to a similar conclusion based on the analysis of reported private apartment equity and debt returns since 1978. We find that private apartment equity and private debt investments (in this analysis, represented by senior fixed-rate mortgages) have little correlation with each other and have different exposures/sensitivities to various macro factors, which makes them complementary when investing in different phases of the business cycle.

Additional research can help explore this thesis for private apartment debt investments represented by subordinated variable-rate mortgages whose return/risk characteristics fall between private equity and senior debt. Overall, even this initial analysis offers practical implications both to investors seeking exposure to the US apartment market as well as investment managers whose business focuses on the two quadrants.

COMPARING HISTORICAL PERFORMANCE

The purpose of this viewpoint is to compare historical performance of private apartment debt and equity investments and explore how combining both in a hypothetical portfolio impacts investment performance. We find that an optimized portfolio with balanced equity and debt allocations has the highest potential to improve risk-adjusted return relative to those that allocate to equity or debt only.

The analysis compares returns, return volatilities, and volatility-adjusted returns over the last 47 years and several business cycles during this period, as well as sensitivities of the two quadrants to various macro risk factors (i.e., economic growth, inflation, credit spreads, etc.).[1]

COMPARATIVE RETURN PROFILE

The analysis uses two sources of apartment returns, both of which have quarterly time series starting in 1978. Private equity returns are based off NCREIF's National Property Index (NPI) which tracks unleveraged property-level investment performance for institutional quality real estate assets, including apartments.[2] Private debt returns are based off Giliberto-Levy's index (GL-1) which tracks investment performance (credit loss adjusted) of senior fixed-rate commercial mortgage loans for institutional real estate, including apartments.[3]

While other forms of real estate debt—such as subordinated, mezzanine, or distressed debt—do have risk exposures that are closer to those of equity, prior research suggests that the general thesis presented here will likely hold when applied to subordinated private debt.

Over the last 47 calendar years, apartment returns averaged 9.9% per year for private equity vs. 7.9% for private debt. Private equity outperformed private debt in 28 out of 47 years by an average of 8.5% over those periods, while private debt outperformed private equity in 19 out of 47 years by an average of 7.7%.

The lowest calendar year return for private equity was in 2009 at -17.6% (following -7.3% return in 2008) while the lowest calendar year return for private debt was in 2023 at -9.8%. The lowest five-year trailing average calendar year returns were 3.9% in 2010 for private equity and 1.9% in 2024 for private debt, respectively.

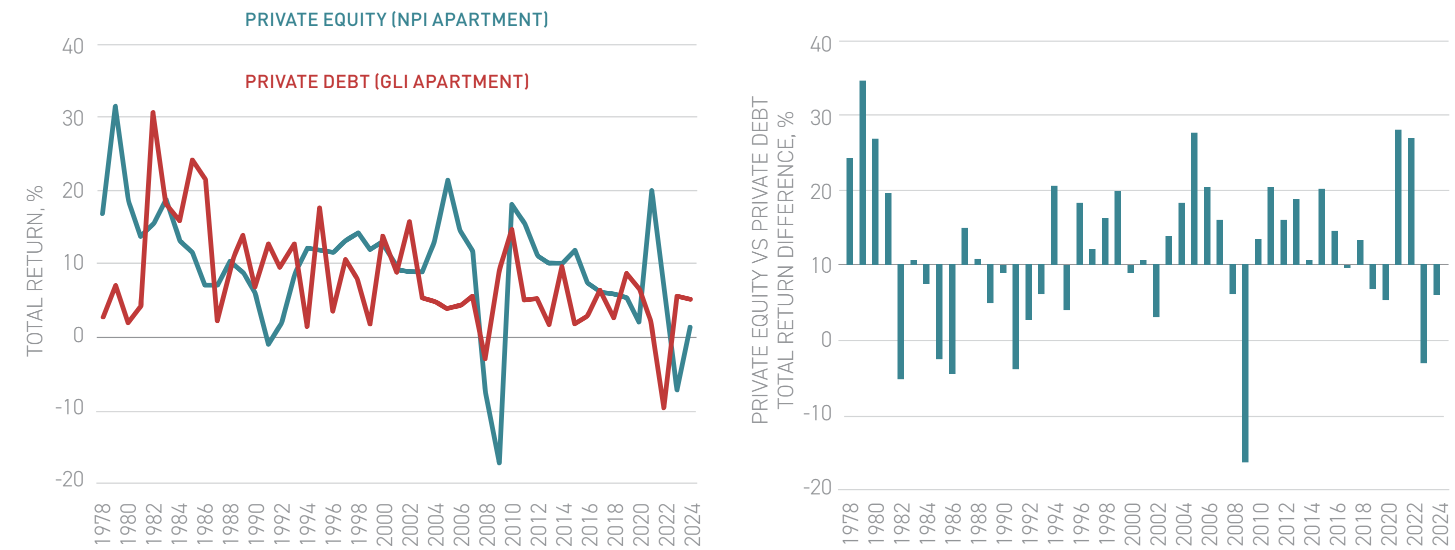
Over the last 47 calendar years, apartment returns averaged 9.9% per year for private equity vs. 7.9% for private debt. Private equity outperformed private debt in 28 out of 47 years by an average of 8.5% over those periods, while private debt outperformed private equity in 19 out of 47 years by an average of 7.7%.

While volatility of returns as measured by their standard deviation over the last 47 years was higher in private equity in absolute terms, private equity did have a higher volatility-adjusted return when comparing the ratios of returns to their standard deviations.

Over the last 47 years, the US economy experienced five major business cycles or recessions: 1980/82 (oil bust); 1990/91 (commercial real estate bust); 2001 (high-tech bust); 2007–2009 (residential real estate bust); and 2020 (COVID pandemic).[4] Considering that both private equity and private debt returns are calculated based off appraisal values (rather than daily prices in publicly-traded real estate equity and debt) and tend to react to the macro-economic and capital market conditions with a lag, we compared investment performance of the two quadrants over the two-year period after the recession year (i.e., for the recession that started in 1980, we compare calendar returns over 1981/1982 period, and so on).

As *Exhibit 3* shows, private debt returns were higher over two calendar years after the starting years of the recessions, except for 2021/22 period following the COVID pandemic. Private debt has performed notably better than private equity over 1991/92 and 2008/09 periods which were particularly challenging for apartment fundamentals. The reasons behind this have to do with sensitivity of private debt and private equity returns to different macro-economic and capital markets factors which are explored in the next section.

EXHIBIT 1: PRIVATE APARTMENT EQUITY VS. DEBT: CALENDAR YEAR TOTAL RETURNS, 1978-2024



Sources: Giliberto-Levy; NCREIF; Berkshire Research.

EXHIBIT 2: PRIVATE APARTMENT EQUITY VS. DEBT: AVERAGE RETURNS AND RETURN VOLATILITIES, 1978-2024

QUADRANT	AVERAGE RETURN	STANDARD DEVIATION	RATIO
PRIVATE EQUITY	9.9	8.0	1.2
PRIVATE DEBT	7.9	7.2	1.1

Sources: Giliberto-Levy, NCREIF, Berkshire Research.

EXHIBIT 3: PRIVATE APARTMENT EQUITY VS. DEBT: RETURNS OVER TWO YEARS FOLLOWING RECESSIONS

	AVERAGE RETURN, %		
PERIOD	PRIVATE EQUITY	PRIVATE DEBT	DIFFERENCE
1981-1982	14.7	17.5	-2.8
1991-1992	0.2	10.9	-10.7
2002-2023	8.9	10.4	-1.6
2008-2009	-12.5	2.8	-15.3
2021-2022	13.6	-3.9	17.5

Sources: Giliberto-Levy, NCREIF, Berkshire Research.

Overall, there was virtually no co-movement in private apartment equity and debt investments historically: the correlations in their calendar year returns were only 10.6% over the last 47 years, 1.6% over the last 30 years, and 8.2% over the last 15 years. Low return correlations between the two quadrants suggest a potential diversification benefit from combining them in a portfolio, which is further reinforced by our finding that private equity and private debt returns are exposed to different risk factors in any given year.

COMPARATIVE RISK EXPOSURES

To compare private apartment equity and debt returns in terms of their exposure to various risk factors, we used linear regressions to estimate return sensitivities or "betas" to a few key macro variables.[5] The three major sources of risk known to impact on private real estate returns are the stock market, economy/labor market (including expected and unexpected inflation), and capital market (interest rates of different maturities, slope of the yield curve, credit spreads, and debt liquidity).

The full list of variables and return sensitivities are summarized in *Exhibit 4*. Sensitivities (betas) reflect how much total returns each year are associated, on average, with changes in the key risk factors. For example, when total US employment expands by 1%, this tends to boost private apartment equity returns by 2%, on average, while having no meaningful impact on private apartment debt returns. The same applies to broader economic growth—while GDP growth has tangible positive impact on private apartment equity returns, its impact on private apartment equity is not statistically significant.

Broader stock market as measured by S&P500 returns is positively related to both private apartment equity and debt returns and with similar impact, but the timing of impact is different: more immediate in case of private debt and lagged in case of private equity. Not surprisingly, broader debt liquidity (measured by change in total US debt outstanding) is also positively linked with both private apartment equity and debt returns each year, but with a more pronounced impact on equity.

There are major differences between private apartment equity and debt returns when it comes to their exposure to unexpected inflation and interest rate risks. Unexpected inflation in this case is the difference between the actual inflation and inflation expectation, as reported a year prior by the University of Michigan Survey.

Private apartment equity returns tend to benefit when inflation ends up being higher than expected (all else being equal) while private debt returns tend to suffer under such circumstances. Both private equity and debt are sensitive to changes in short-term (three-month) Treasury rates but also in opposite directions – private equity returns react to such changes positively while private debt returns react negatively. Considering that movements in short-term interest rates are often triggered by inflation, investors should be monitoring both risk factors closely when thinking about their potential impact on returns.

EXHIBIT 4: RISK EXPOSURES FOR PRIVATE APARTMENT EQUITY AND DEBT RETURNS

	TOTAL RETURN SENSITIVITY (BETA)	
RISK FACTOR	PRIVATE EQUITY	PRIVATE DEBT
S&P 500 INDEX		
Change Over Year	*Insignificant*	0.2
Change Over Year *(1 year lag)*	0.2	*Insignificant*
GDP		
Change Over Year	1.6	*Insignificant*
EMPLOYMENT		
Change Over Year	2.0	*Insignificant*
INFLATION		
Expected	*Insignificant*	*Insignificant*
Unexpected	2,2	*-1.0*
3-MONTH TREASURY RATE		
Change Over Year	1.6	-1.9
10-YEAR TREASURY RATE		
Change Over Year	*Insignificant*	-4.3
SLOPE OF THE YIELD CURVE		
Change Over Year	-2.0	*Insignificant*
AAA BOND SPREAD		
Change Over Year	*Insignificant*	0.1
TOTAL DEBT OUTSTANDING		
Change Over Year	1.0	0.6

Sources: Federal Reserve, Giliberto-Levy, NCREIF, Berkshire Research.

Changes in the long-term (ten-year) Treasury rates have no significant effect on private equity returns during the same year while having a major negative impact on private debt returns. This may come as a surprise to private equity investors as there is a perception that changes in long-term Treasury rates are one of the major factors impacting apartment returns. Instead, their focus should be on the annual changes in the yield curve (i.e., differences between ten-year and three-month Treasuries) which do, indeed, have a major negative impact on private equity returns but with no significant impact on private debt returns. Finally, we also find that annual changes in bond risk premiums (measured by the differences between yields on AAA corporate bonds and ten-year Treasury rates) have no significant impact on private equity returns but do have a slight positive impact on private debt returns.

It is reasonable to expect that other forms of private debt investment such as floating rate and subordinated mortgages would differ from the senior fixed rate debt investments in terms of their risk factors and sensitivities to those factors (interest rates in particular). Prior research does suggest however that private subordinated debt likely falls between private equity and private senior debt in terms of its investment profile and has limited exposure to the same risk factors.[6] Our own recent analysis based on data across Berkshire's apartment equity and debt portfolios supports that view, making a compelling case for subordinated apartment debt investments based on their returns over the last ten to fifteen years.

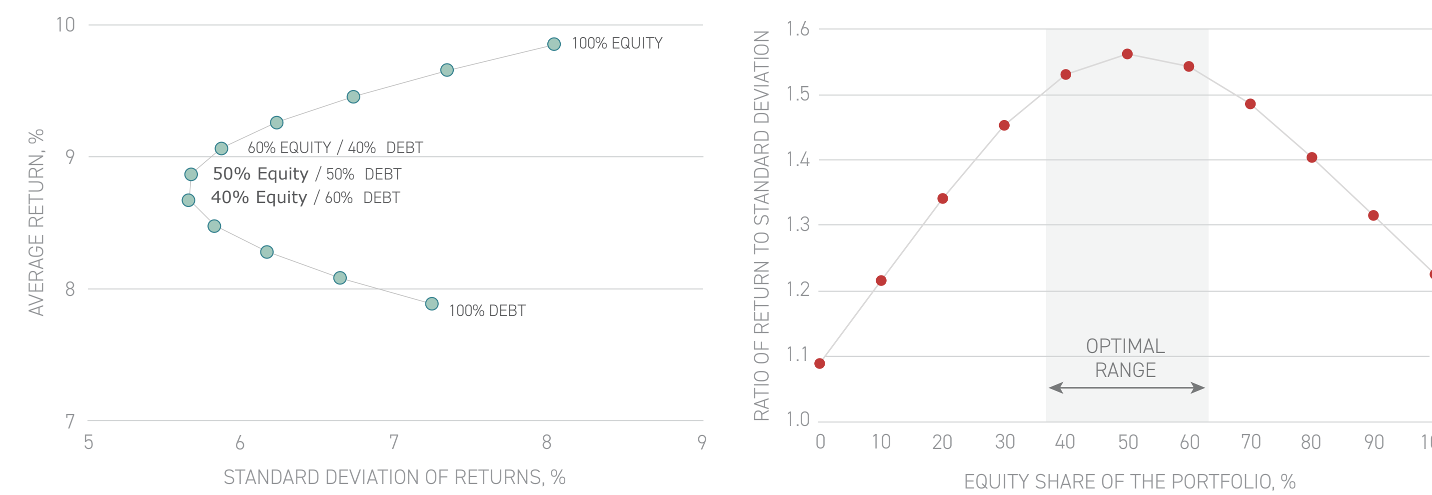
In summary, aside from being similarly impacted by the stock market and broader liquidity, yearly returns on private apartment equity and debt investment are either exposed to different macro risk factors or react to the same factors in opposite ways.

OPTIMIZING PRIVATE EQUITY AND PRIVATE DEBT PORTFOLIO ALLOCATIONS

Low correlations in total returns for private equity and private debt as well as their exposures/sensitivities to various macro risks, but with similar ratios of returns to return volatilities, suggest diversification potential of combining the two in a single portfolio.

To test this thesis, we constructed hypothetical portfolios by increasing allocation to private debt in 10% increments and calculating average returns, standard deviations of those returns, and ratios of average returns to their standard deviation. The results are summarized in *Exhibit 5* which shows the above metrics for eleven hypothetical portfolios (ranging from 100% private equity to 100% private debt).

EXHIBIT 5: HISTORICAL INVESTMENT PERFORMANCE OF MODEL PORTFOLIOS UNDER VARYING EQUITY/DEBT ALLOCATIONS



Sources: Giliberto-Levy, NCREIF, Berkshire Research.

Given the historical returns and volatility profile of private debt, its incremental addition to a private equity portfolio does result in lower absolute returns but with a benefit of notably better risk-adjusted return. As the charts show, however, the optimal diversification benefit is achieved when the share of private debt is in 40-60% range. Outside of that range, improvement in return/volatility ratios are insignificant, especially when the share of private debt is less than 20% or more than 80%.

A hypothetical portfolio that is 50% private equity and 50% private debt has an average return of 8.9% vs. 9.9% for a portfolio that is 100% private equity. At the same time, the above portfolio would have standard deviation of return of only 5.7% vs. 8.0% for an equity-only portfolio, over 29% reduction in return volatility, and over 27% increase in the return/volatility ratio.

IMPROVING RETURNS

We find that returns on private apartment equity and private debt investments (in this analysis, represented by senior fixed-rate mortgages) have little correlation with each other and have different exposures/sensitivities to various macro factors.

As a result, combining private apartment equity and private debt investments in a portfolio can improve its risk-adjusted return, with optimal allocations to each being about equal. Additional research can help explore this thesis for private apartment debt investments represented by subordinated variable-rate mortgages whose return/risk characteristics fall in between private equity and senior debt.

Overall, even this initial analysis offers practical implications both to investors seeking exposure to the US apartment market as well as investment managers whose business focuses on the two quadrants.

ABOUT THE AUTHOR

Gleb Nechayev is Head of Research and Chief Economist for Berkshire Residential Investments.

NOTES

[1] The other two investment quadrants are public equity (real estate investment trusts or REITs) and public debt (commercial mortgage-backed securities or CMBS).

[2] As of Q2 2025, NPI apartment subset included 2,259 properties.

[3] As of Q2 2025, Gl-1 apartment subset included 6,043 properties.

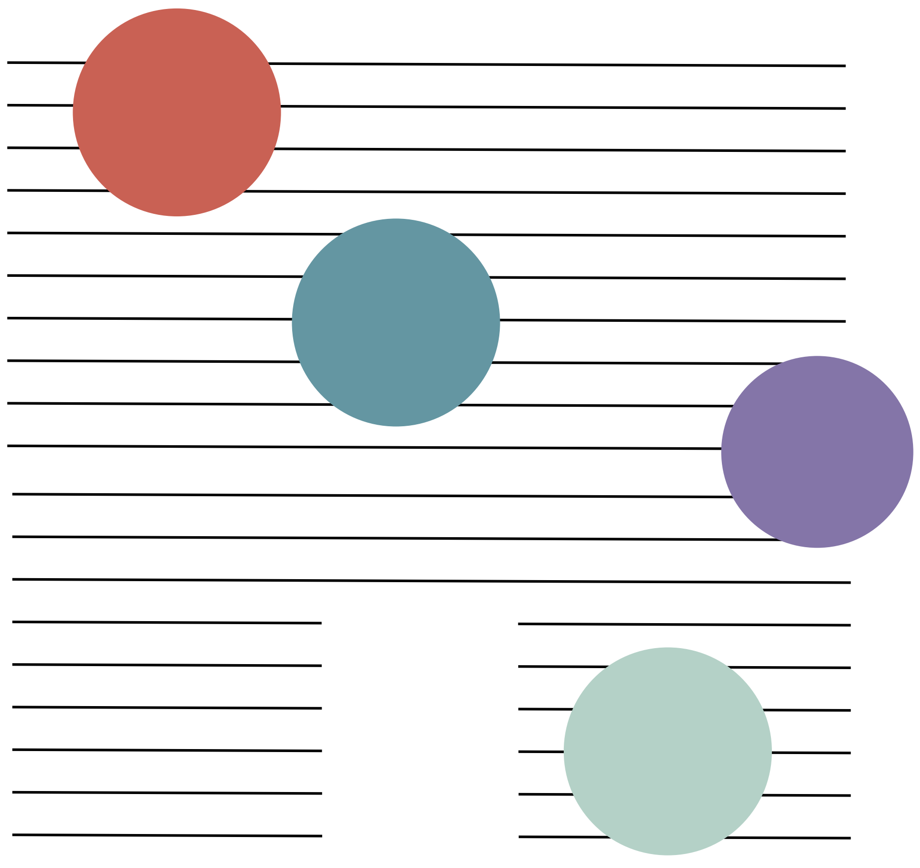
[4] Recession dating procedure used by the National Bureau of economic Research (NBER) sets periods of economic expansions and contractions based on months after the peaks and troughs in the business cycle.

[5] MacKinnon, Greg. "Comparing Real Estate Debt and Equity Investments ". *PREA Quarterly*, Winter 2015.

[6] MacKinnon, Greg. "The Capital Stack: How Do Different Parts Stack Up as Investments?" *PREA Quarterly*, Spring 2022.

Combining private apartment equity and private debt investments in a portfolio can improve its risk-adjusted return, with optimal allocations to each being about equal.

MEET THEM WHERE THEY ARE



Kevin Hudak
Chief Research Officer
RCKRBX, INC.

Michael Broder
President and CEO
RCKRBX, INC.

In asking renters their future rent budget and then asking them to "design" their ideal unit, owners and operators can harness and grow new demand, not just fit diminishing demand into constrained supply.

In a recent focus group conducted by RCKRBX, an innovative SaaS platform designed for the multifamily real estate sector, for the Real Estate Technology and Transformation Center (RETTC), a renter respondent suggested that multifamily owners and operators need to "meet them where they are."

While this renter was referring to their "ideal property," newly released national renter polling data shows the sentiment applies far more broadly.

In polling tens-of-thousands of prospective renters since the COVID-19 pandemic, we've tracked how their preferences, priorities, attitudes and viewpoints have evolved, often making it more difficult for the average property to meet future residents "where they are" (or perhaps want to be).

For years, supply has been driving demand, as opposed to the other way around, meaning that renters, across all demographic strata are pushed outside of their comfort zones to settle for units that are "less than ideal" relative to their live-space wants, needs, and expectations—or, worse, leasing apartments that don't meet their actual living requirements.

At the same time, developers, owners, and operators, who remain uninformed or underinformed about their current and future end-users, what matters most to them, and how much they will pay for the places and spaces they want, are increasingly leaving programmatic drivers of demand, premiums, and loyalty on the proverbial table.

The RCKRBX *National Demand Landscape Survey* (fielded between August–September 2025 included N=2,342 randomly recruited renter respondents with a statistical margin of error +/- 2.2%) demonstrates the risks in "staying this course" as well as some promising, near-term opportunities for those who approach the multifamily market differently.

IN TODAY'S ENVIRONMENT, DENSITY ≠ DOLLARS

From a macro-economic standpoint, our study sample showed that four in ten renters say the economy is heading down the wrong track—increasing since then in internal polling as high as 60% (nearly matching today's political polls).

Less optimism around the economy in turn drives a "renters by necessity" attitude versus "renters by choice." Only 24% indicated they "rent because I like to and prefer it over owning a home," compared to 41% who are delaying a home purchase due to economic conditions and 30% who rent because of lifestyle or job requirements. Meanwhile, our data show those renting by choice are twice as likely to say they are "strongly" likely to renew than those delaying home purchases, and on average are willing to pay $100+ more per month for their "ideal" apartment homes.

As one of the world's oldest, most successful asset classes, it is easy for the industry (and its observers) to view multifamily as a single, homogenized product type—a monolith—particularly given the backward-looking manner in which assets are evaluated. What has happened as a result? Product commoditization; price and concession-driven rental markets; misaligned supply vs. actual renter demand; and growing numbers of underperforming assets.

In reality, multifamily is anything but monolithic. It is more akin to a broad and deep spectrum of people and product with numerous and nuanced sub-spectra that are far more complex than population life-stages, comp sets and asset class/type designations suggest.

Take for example one of the most common (and efficient) product types: the one-bedroom unit. According to the National Multifamily Housing Council (NMHC) inventory data, one-bedroom units comprise 41% of national apartment supply, while our direct-to-the-end-user polling data shows future demand for those homes at just 21%.

EXHIBIT 1: NATIONWIDE UNIT SUPPLY VS. RCKRBX DEMAND

UNIT TYPE	UNIT DEMAND (RCKRBX Survey Modeling)	UNIT SUPPLY (NMHC)
Studio	4%	12%
1 Bedroom	21%	41%
2 Bedroom	52%	39%
3 Bedroom	23%	8%

Within each region, there are also dramatic differences in the proportion of current two- or three-bedroom renters willing to down-size, as well as the studio and one-bedroom renters looking to upsize.

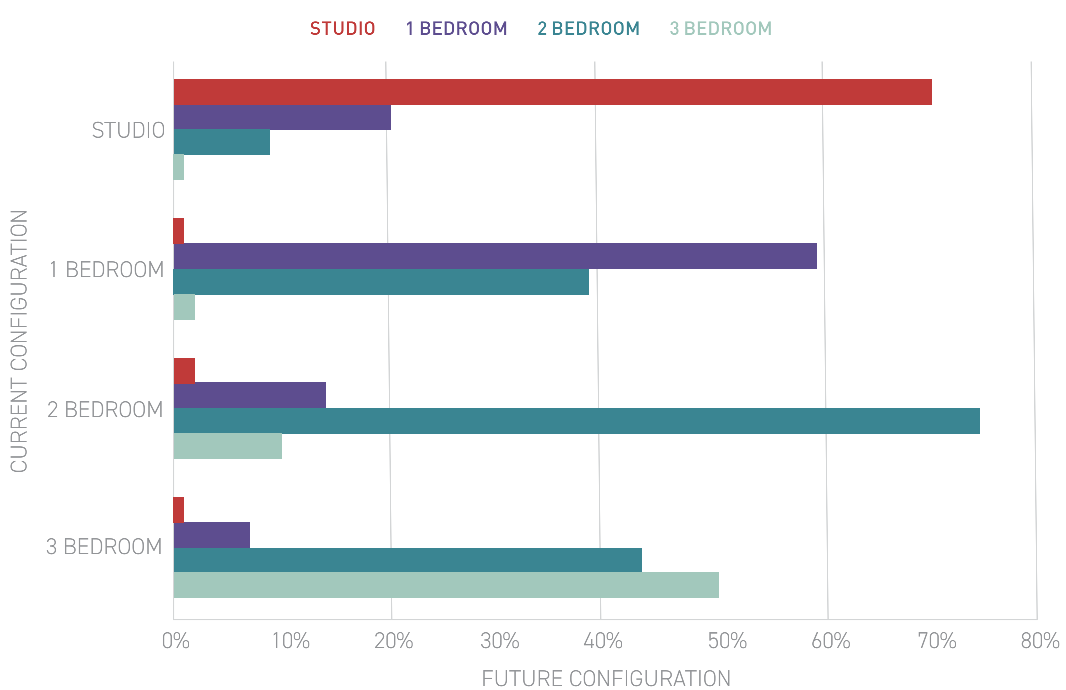
Furthermore, among current one-bedroom renters nationwide, only 55% will remain in a one-bedroom unit upon renewal, with 43% seeking larger units and 2% downsizing. This will prove a significant occupancy and premium challenge over time, particularly in over-supplied areas, as the U.S. population continues to contract (i.e. meaning fewer new renters will enter the market) and renter demand for 1-bedroom units going forward remains significantly behind existing supply levels.

Moreover, renters currently in 1-bedroom units (or those who say they'll be in one in their next move) are 8-10 points lower on "likely" to renew their lease than two-bedroom units, and 8-10 points higher in their decisive "unlikely to renew" scores. One-bedroom renters are also more "wrong track" on the economy than any other layout tested, and the least optimistic (49% wrong track, 31% right direction).

Given the macro-economic flux and lack of unit fitness to renter need, it's no surprise that our nationwide sample demonstrates greater favorability for non-apartment rental homes. Where 47% of renters say they would consider traditional mid-rise apartment buildings and 60% garden-style apartments, two thirds (66%) would consider a townhome rental and nearly eight in ten would say the same for detached single-family home rentals. The data foreshadows an unforced error ahead—a growing adversity to density if multifamily supply doesn't realign to demand.

As a result, today's inventory is focused on configurations that, at best, serve a more transient and economically depressed segment and, at worst, outright encourage churn, commodity pricing, and renters looking outside of traditional multifamily products. Even if these units lease, they won't have the stickiness to make projects as profitable as possible.

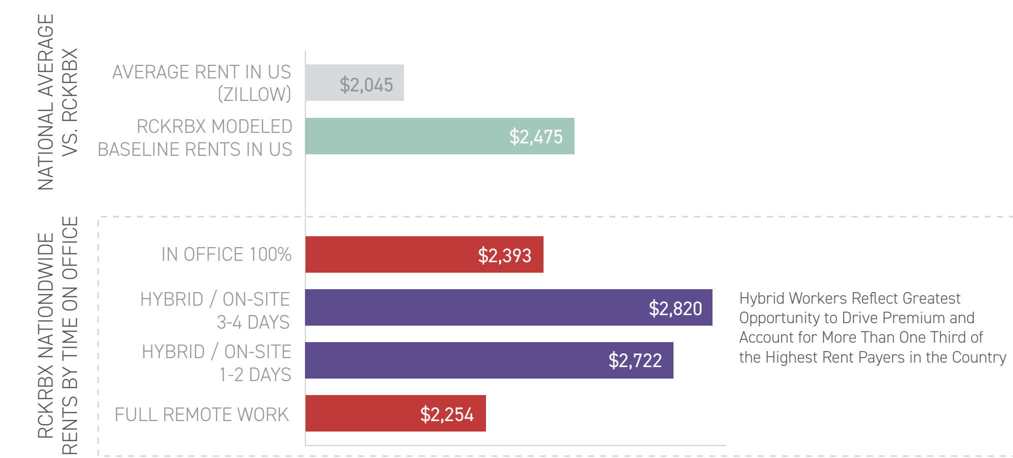
EXHIBIT 2: UNIT DEMAND BY CURRENT CONFIGURATION (CURRENT RENTERS ONLY)



FORWARD-LOOKING RENTER DEMAND AND DEMOGRAPHICS DEFINE DESTINY

The data show softening demand for one-bedroom (and other) units as well as underlying economic impacts driving a malaise among those renter segments that doesn't support existing supply (at least at the expected lease pace and rent premiums). At the same time, young families (move-ups with kids) and dual-income, dual-income-no-kids couples (DINKs) are growing in their composition and intensity in the market.

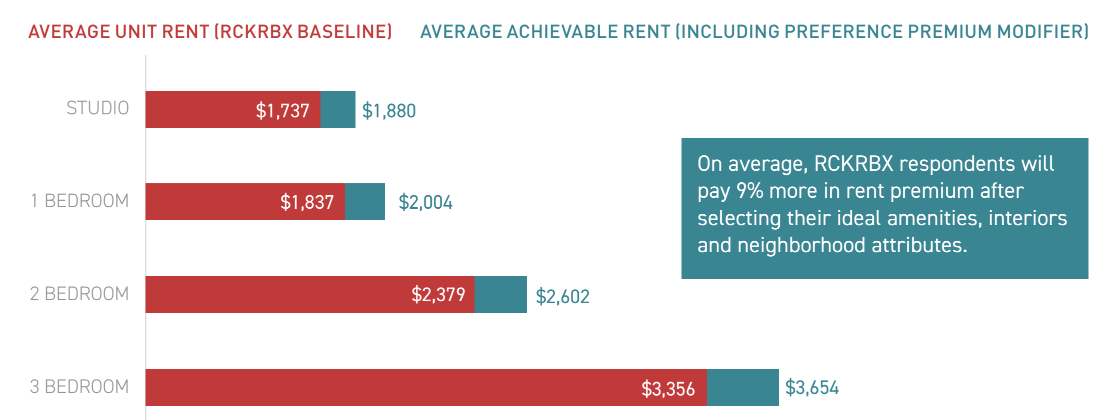
EXHIBIT 3: AVERAGE ABSOLUTE RENT BENCHMARKS VS. RCKRBX RENTS BY TIME IN OFFICE



Pluralities of those groups favor two bedrooms or more to accommodate their children or entertain. They indicate a higher likelihood to renew their leases than any other life stage segment tested. Half of them say they plan on increasing their rent payment in their next move. In fact, they set their hypothetical rent budgets 10% higher than the survey average, 16% higher than empty nesters 55+, and 20% higher than millennial singles.

This isn't to say unit mixes should change overnight; inertia is against the industry as single heads of household make up 61% of the renter population according to NMHC and the 2023 US Census Bureau American Community Survey. Still, the data advantages developers, owners and operators who think outside the box. Better yet, a "new box" would mean understanding who the high-propensity renters are for a property (before buying or building), how they are different from others (as defined by demographic and psychographic characteristics), what they value and will pay premiums for, and what that means from an asset programming and performance standpoint in order to deliver the right product, to the right customer segments, at the right time, be it micro-housing or larger two-bedrooms.

EXHIBIT 4: AVERAGE UNIT RENTS VS. RCKRBX ACHIEVABLE RENTS



Before that, it's best to get granular and plan pilots/prototypes by region, for which RCKRBX conducts rolling surveys to support its live, demand-side data platform. For example, our polling in the Chicago suburbs suggests only 35% of move-ups and DINKs would prefer a two-bedroom home (with more of them aiming larger) as compared to the Dallas-Fort Worth metro area where 51% of them would say the same. A developer with portfolios in both regions would benefit from optimizing mixes in DFW to stress-test, iterate, and refine programming, marketing, and message to capture this latent demand.

Within each region, there are also dramatic differences in the proportion of current two- or three-bedroom renters willing to down-size, as well as the studio and one-bedroom renters looking to upsize. This presents an opportunity for owners/operators who have a deep understanding of their end-users, portfolios and the markets surrounding them to seize on intra-property transitions as well as new inbound leases.

DENSITY THAT "WORKS" IN A POST-COVID WORLD

Some of the richest data in the RCKRBX *National Demand Landscape Survey* comes from our examination of teleworking/hybrid working trends; not just that it exists, but correlated with the extent to which it impacts the resident experience, building/product preferences and rent premiums.

Among current and prospective renters nationally, 46% are hybrid or working fully remote, which includes 25% remote working one or two days per week, 8% at three or four days, and 13% full-time remote.

Hybrid workers are less likely to renew their leases (e.g., 34% "likely" to renew for hybrid workers 3-4 days off-site vs. 44% for 100%-in-office, and 46% for full-remote workers). However, hybrid workers are also paying the highest rent premiums for their desired configurations. The National Demand Landscape survey demonstrates that the "next move" rent budget for a one- or two-day off-site hybrid worker is $2,820/month compared to $2,393 for a full-time in office worker and $2,254 for a full remote worker.

These one- to two-day off-site hybrid workers are the segment most likely to prefer a one-bedroom-plus-den unit configuration, but as past RCKRBX studies have identified, they need useable dens or second bedrooms that can be comfortable, professional office settings. For many, this includes a den on the window line, sized appropriately, or buildings with suitable co-working amenities.

As a result, among the entire national audience home office amenities as a category tie concierge and property management services. They rank well ahead of gaming amenities (club rooms, game rooms) and arts and media amenities (TV rooms, movie rooms, lounges).

Among the one- to two-day off-site hybrid workers, home office amenities climb in importance, though the #1 performing amenity overall is an on-site wellness spa with steam rooms, yoga studios, and so forth, then followed by full co-working space with reservable small offices, hoteling desks, and conference rooms. Capturing this renewal-elusive, high-premium paying renter still involves a recognition that their apartment community is as much a well-space as it is a workspace.

DEFINING A NEW BOX

This is just a small slice of RCKRBX findings that are continuously updated at a market and regional level and supplemented by our national studies. Our surveys also explore the impacts of interior finishes and features, neighborhood/locational amenities, CX Tech (customer experience tech) and digitalization of the resident experience, as well as the marketing channels and messaging that resonate with these high-propensity renter targets.

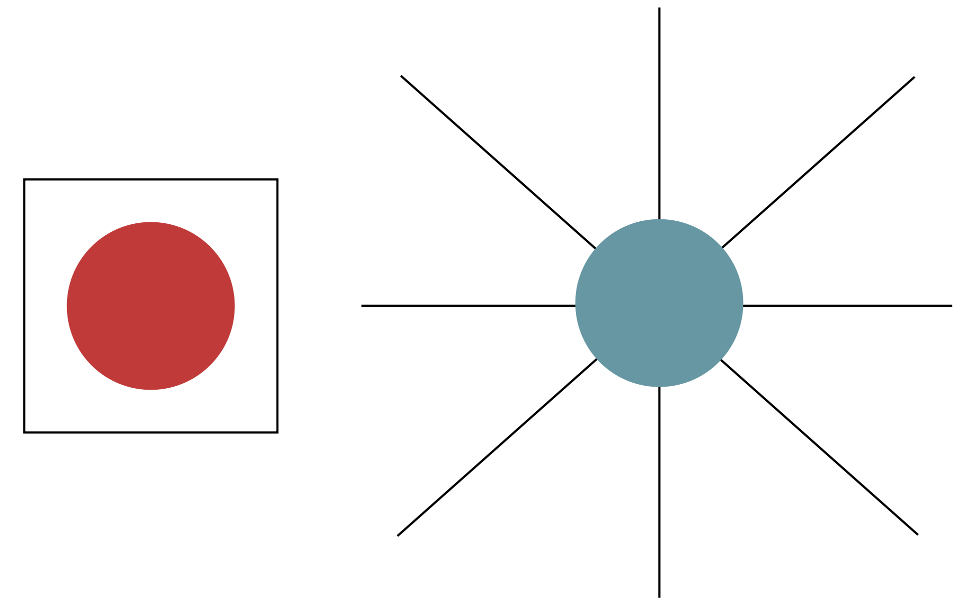
The findings support "anec-data" and, sometimes, hard learned truths that multifamily developers need to revisit their alignment with an evolving end-user. More importantly, it reveals a clear case for premium and profit for those who don't just think outside the box—but perhaps define a new one.

In asking renters their future rent budget (based on validated household income) and then asking them to "design" their ideal unit, such end-user, leading-indicator data can help developers, owners and operators harness and grow new demand, not just fit diminishing demand into constrained supply.

ABOUT THE AUTHORS

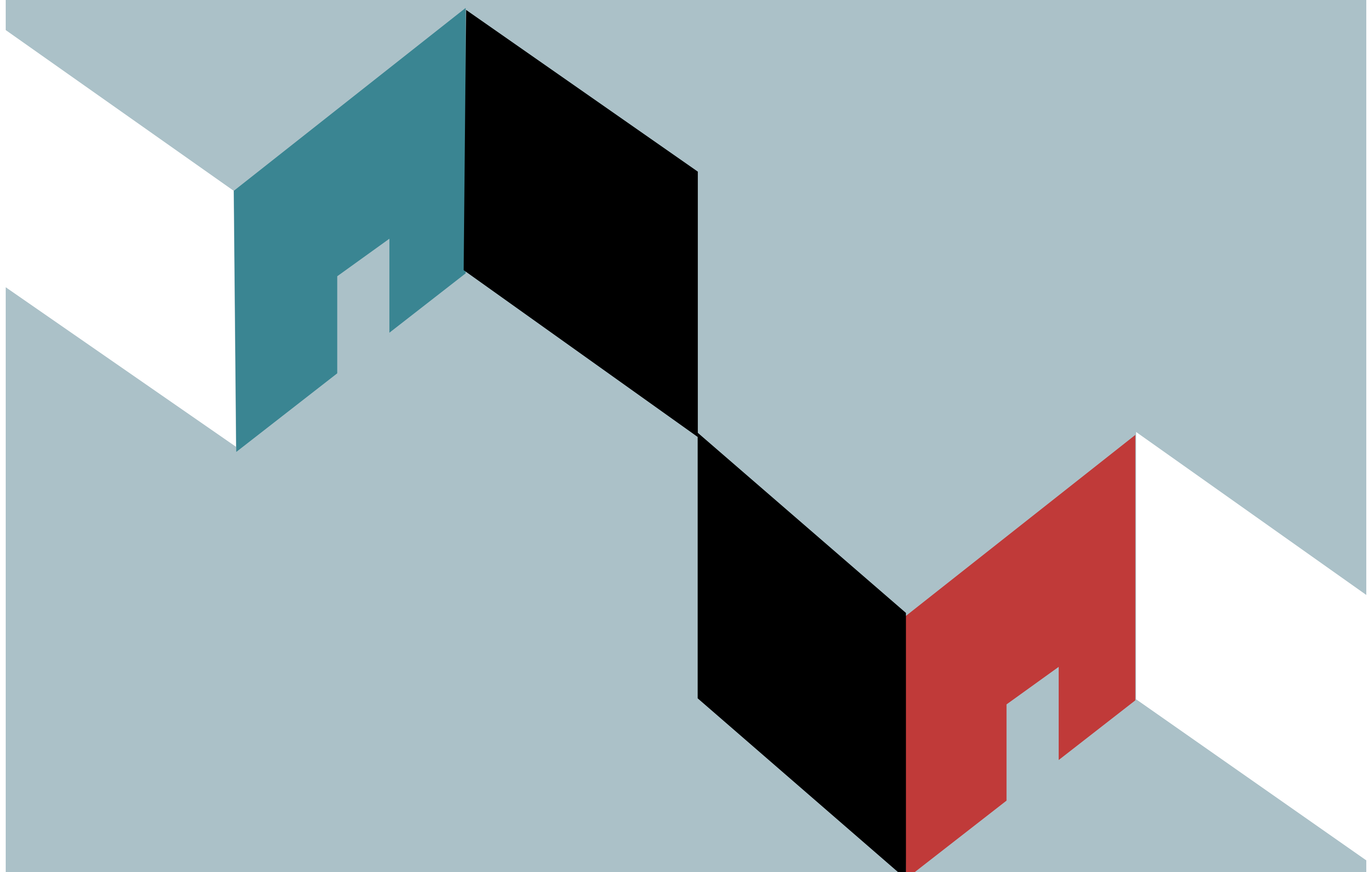
Kevin Hudak is the Chief Research Officer at RCKRBX, focusing on the intersection of end-user demand, real estate supply and market performance trends.

Michael Broder is the President and CEO of RCKRBX, where he leads the firm's strategic direction, product innovation and growth activities.



The findings reveal a clear case for premium and profit for those who don't just think outside the box—but perhaps define a new one.

REIT PUTS AND CALLS



William Pattison
CRE Head of Research & Strategy, Real Estate
MetLife Investment Management

Michael Steinberg
Senior Director, Real Estate Research
MetLife Investment Management

Carsten Raaum
Director, Real Estate Research
MetLife Investment Management

Kiel Deitrich
Associate, Real Estate Research
MetLife Investment Management

Jacob Kurosaki
Associate, Real Estate Research
MetLife Investment Management

Real estate investors and managers frequently rely on qualitative market risk assessments but, in many cases, do not give appropriate consideration to quantitative assessments that are readily available. Put and Call options on REITs provide forward-looking risk indicators that incorporate both historical property sector trends and views on the outlook.

In *Moneyball*, author Michael Lewis discusses the "tools" available to baseball scouts evaluating young players. "A guy who could run had 'wheels;' a guy with a strong arm had a 'hose.' Scouts spoke the language of auto mechanics."

In many ways, the private real estate sector today shares elements with Major League Baseball in the 1990s, when qualitative traits frequently trumped quantitative evaluations. This is especially true when it comes to risk assessment. For example, how much additional yield should an investor demand today for purchasing an office building versus a logistics warehouse?

In our last *Public Market Signals* report, we argued that private real estate investors are underutilizing the information pouring out of public markets.[1] We pointed out that corporate bond yields and short-term Treasuries could be used to anticipate changes in real estate pricing.

Specifically, we reached the conclusion that private markets were, at the time, priced slightly too aggressively, and that transaction cap rates as measured by the NCREIF Property Index would rise by 30bps during the quarter. While it will take several years to truly evaluate the quality of our cap-rate forecast model, the benchmark 2Q25 NCREIF transaction cap rate did reflect our expected rise *(Exhibit 1)*.

EXHIBIT 1: NCREIF CAP RATES

QUARTER	CLASSIC NPI EQUAL WEIGHT	CLASSIC NPI VALUE WEIGHT	EXPANDED NPI EQUAL WEIGHT	EXPANDED NPI VALUE WEIGHT	AVERAGE
1Q25	5.78%	5.75%	5.65%	5.66%	5.71%
2Q25	6.07%	5.91%	6.11%	5.92%	6.00%
Difference	0.29%	0.16%	0.46%	0.26%	0.29%

Sources: MIM, NCREIF. 2Q 2025.

In this follow-up to *Public Market Signals,* we'll expand beyond Treasury and corporate bond yields to show how private real estate investors can use REIT Put and Call options pricing to evaluate the riskiness of various property types, and thus, how much extra yield should be required for moving up the property-type risk spectrum. Combined with our cap-rate model, this analysis provides a useful framework for evaluating risk-adjusted returns.

(Note: This article was originally published by MetLife Investment Management in October 2025, and is republished here with permission. The original can be viewed at https://investments.metlife.com/insights/real-estate/public-market-signals-for-real-estate-investors-partII-risk-assessment/)

WHAT IS RISK ASSESSMENT?

The Capital Asset Pricing Model (CAPM) provides a practical toolkit for sizing how much extra return investors should expect when they step into riskier territory. CAPM suggests that the return from an investment should start with a risk-free rate such as the 10-year Treasury, plus a premium that reflects how much riskier the investment is compared to the market.

The problem real estate investors face is that there is no simple way to estimate relative risk (i.e., the potential range of upside and downside outcomes from base-case underwriting) across property types. There are two primary reasons why this is a difficult exercise:

- A long list of variables determines investment outcomes. Investors must, in theory, forecast 1-, 2-, and 3- standard deviation scenarios for rent growth, occupancy, operating expense growth (including taxes and property insurance) and one-time capital expenditures. Forecasting performance is typically done for a base case scenario, but that alone is a full-time job. Few investors also have the resources to model the required upside and downside scenarios for a CAPM analysis.
- Emerging institutional property types with limited data availability. Historical performance of sectors like industrial, office, retail and apartments are likely documented enough to be used as a starting point, with NCREIF records dating back thirty to forty years. But what about data centers, single-family rentals or other segments that have only barely seen a full cycle? There are over 20 institutional property types with meaningful differentiated risk/return profiles, but almost none of them have detailed performance histories dating back to the Global Financial Crisis (GFC), or to periods like the 1970s when inflation was running hot.

By examining the implied volatilities of REITs that specialize in specific property types, whether office, industrial, retail or newer categories, like data centers and single-family rentals, investors can extract quantitative estimates of risk that capture the market's anticipation of future turbulence.

USING OPTIONS PRICING TO ESTIMATE RISK

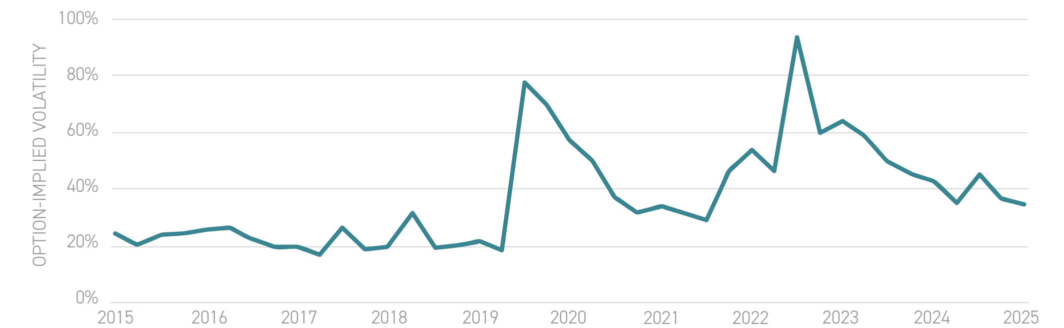
To address these challenges, investors can turn to REIT options pricing as a forward-looking proxy for property-type risk. Although the REIT price-to-net-asset-value (P/NAV) ratio is a commonly used metric, we believe option pricing can be a more useful way to understand volatility and estimate risk-adjusted returns.

Implied volatility is a key metric derived from options pricing and represents the market's forecast for the magnitude of future price fluctuations over the life of the option. Unlike historical volatility, which simply records past price swings, implied volatility is embedded within the prices of options contracts and is thus forward looking.

By examining the implied volatilities of REITs that specialize in specific property types, whether office, industrial, retail or newer categories, like data centers and single-family rentals, investors can extract quantitative estimates of risk that capture the market's anticipation of future turbulence. This approach offers a real-time alternative to the constraints of historical analysis that don't incorporate new information we know about the future (like how tariffs might impact the industrial sector, how immigration restrictions might impact apartments, or how quickly remote work might be reversing and the subsequent implications for offices).

Take, for example, the chart below, which represents the implied volatility for office REIT SL Green. Prior to COVID, SL Green's implied volatility hovered around 20% (annualized predicted standard deviation of the share price, see *Exhibit 2)*. It rose to 95% during the peak of the work-from-home downturn for the office sector. It has been recovering more recently, reflecting improvements in the office sector, but is still elevated relative to pre-COVID.

EXHIBIT 2: SL GREEN OPTION-IMPLIED VOLATILITY

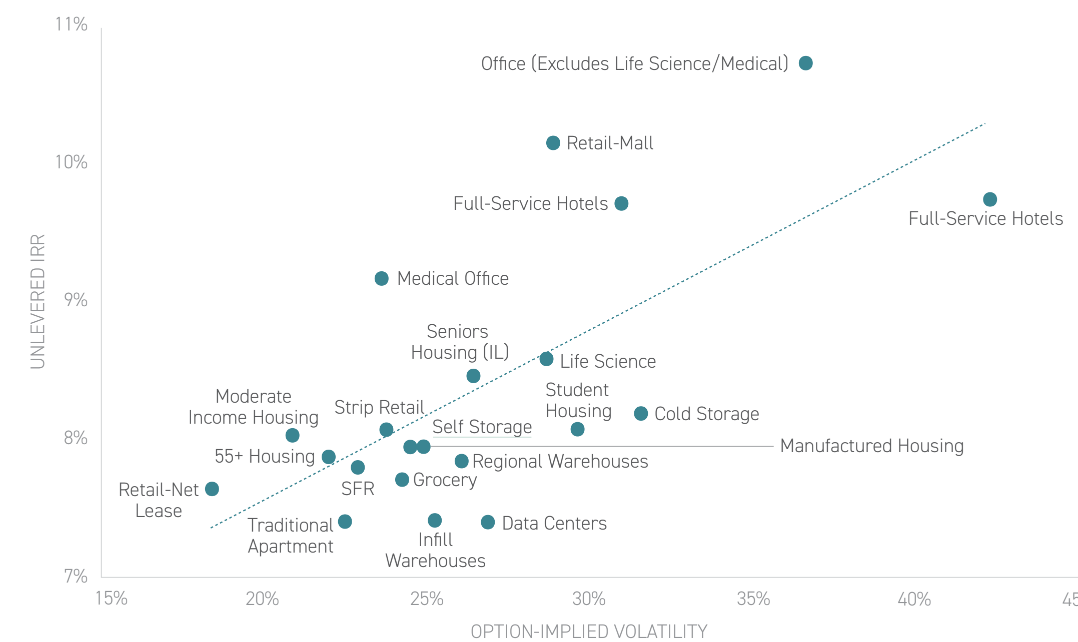


Sources: MIM, Bloomberg. September 2025.

To compare implied volatilities across property types, MIM grouped REITs into 21 property type categories, with boundaries based on where segments may perform materially differently. These definitions do not exactly match those used by industry groups such as CREFC and NCREIF.

For each property type, we model volatilities against assets in MIM's acquisition pipeline, as well as against a monthly yield survey that MIM's acquisition teams complete. The results of that analysis are below:

EXHIBIT 3: SECTOR OPTION IMPLIED VOLATILITY VS. UNLEVERED IRR



Sources: MIM, Bloomberg. Year-to-date average through September 2025.

Exhibit 3 shows the relationship between private sector yields and public market sector risk as measured by option-implied volatility. Specifically, the analysis implies that one additional percentage point of implied volatility requires 10 bps of unlevered IRR. In other words, moving from an implied volatility of 20% to an implied volatility of 30% should equate to moving from an 8.0% unlevered IRR to a 9.0% unlevered IRR.

This analysis also allows investors to begin making relative value decisions. For example, strip retail centers offer roughly a 40bp yield premium over traditional apartments today, yet public markets suggest strip retail is slightly less risky.

DRAWBACKS OF OPTIONS PRICING ANALYSIS

While option-implied analysis is a powerful tool that investors can use to examine relative value across property types, there are several factors to keep in mind.

Lack of pure-play REITs in several sectors. MIM's model makes adjustments to account for sectors like student housing, seniors housing, life science and medical office where there are no pure-play REITs.

Volatility can imply upside or downside risk. High-growth sectors like data centers may screen riskier if markets are pricing the potential for upside earnings surprises. Analysts can consider evaluating Volatility Skew or Risk Reversal to correct for directional bias, but this data is less accessible and could reduce standardization of measurement across property types.

REIT prices are not purely a function of their assets. REIT performance primarily changes as a function of asset performance, but management strategies also present upside/downside volatility. Additionally, the use of leverage differs between REITs and can be challenging to adjust for.

Volatility can imply upside or downside risk. High-growth sectors like data centers may screen riskier if markets are pricing the potential for upside earnings surprises.

CONCLUSION

The integration of options pricing analysis into private real estate investment strategies provides a distinct and forward-looking perspective on risk. Unlike traditional real estate risk analysis that relies solely on the rearview mirror of historical performance, option-implied volatility stands apart by blending past trends with fresh market intelligence and investor expectations for the future.

While the relationship between implied volatility and private sector yields opens new avenues for decision-making, it is not without caveats. Imperfect correlations and sector-specific limitations mean investors should use this tool in concert with other approaches. As public and private real estate markets continue to evolve, options pricing analysis remains a powerful addition to the investor's toolkit — one that captures the pulse of markets not only as they have been, but as they are anticipated to become.

Although options pricing is an important tool in MIM's property-type relative value framework, we only issue overweight recommendations when option-implied signals are corroborated by at least one traditional fundamentals-based indicator and a private market relative value measure. Our current overweight sectors include seniors housing, infill warehouses, net lease retail, medical office and manufactured housing.

ABOUT THE AUTHORS

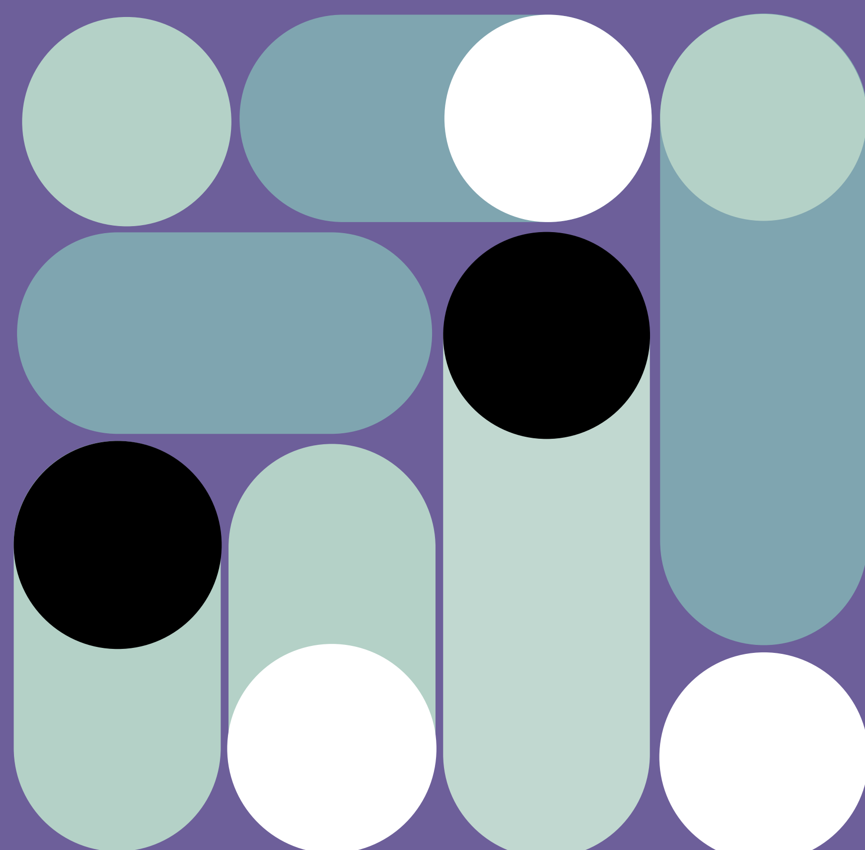
William Pattison is CRE Head of Research & Strategy, Real Estate; Michael Steinberg is a Senior Director, Real Estate Research; Carsten Raaum is a Director, Real Estate Research; and Jacob Kurosaki and Kiel Deitrich are both Associates, Real Estate Research, for MetLife Investment Management.

NOTES

[1] https://investments.metlife.com/insights/real-estate/public-market-signals-for-private-cre-investors/

As public and private real estate markets continue to evolve, options pricing analysis remains a powerful addition to the investor's toolkit — one that captures the pulse of markets not only as they have been, but as they are anticipated to become.

MODERNIZING MANAGEMENT



Finn DuComb-Festor
Equity, Debt & Structured Finance Analyst
Cushman & Wakefield

Miles Treaster
President of Capital Markets, Americas
Cushman & Wakefield

The real estate investment management industry is modernizing its business practices and financial structures in response to a challenging liquidity environment and increased investor scrutiny.

GP-LP ECONOMICS

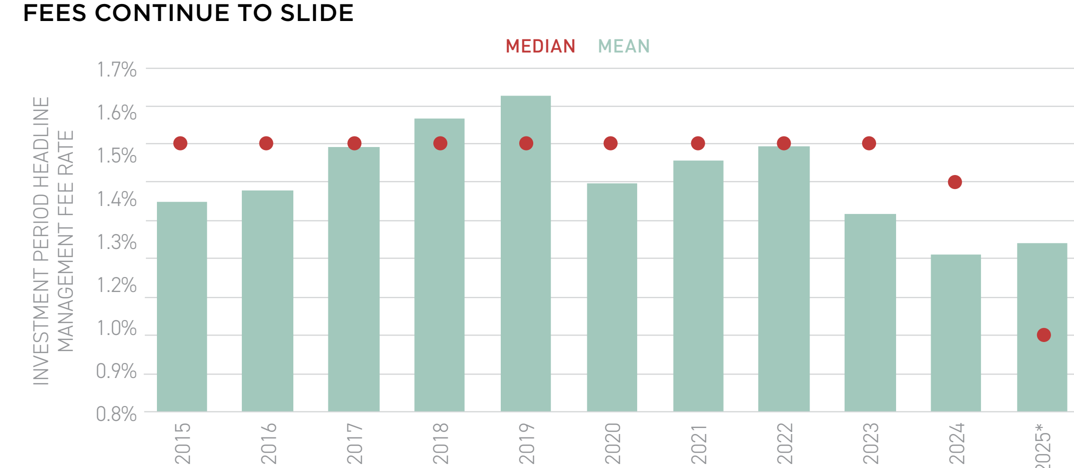
Real estate fund economics are shifting toward greater transparency and alignment, driven by LP sophistication and fundraising pressures. These shifts reflect not only cyclical market strain, but a structural repricing of governance, liquidity, and fee accountability across private real estate platforms.

Legacy fee structure models are transitioning from a single-basis to dual-basis fee structures, with initial compensation tied to committed and invested capital, then shifting to Net Asset Value (NAV) post capital deployment.[1] This aims to reduce long-term fee drag and better align costs with capital at risk. Fee rates typically exhibit an "inverted arch," stabilizing for funds between $250 million and $2.0 billion.[2] This structure increasingly mirrors private credit and infrastructure fee frameworks, signaling convergence across real asset classes.

For 2020-and-later vintages, headline Post-Investment-Period (PIP) fees on actively invested capital are trending below the median, clustering between 1.4–1.5%. However, a significant diligence risk remains for LPs, as 46% of recorded Limited Partnership Agreements (LPA) lack specific language governing PIP fees, creating uncertainty in forward cash-flow modeling.[3] This ambiguity has become a focal point of LP negotiation, as fee opacity compounds valuation and liquidity risk in a slower exit environment.

Hurdle rates have risen since 2020, with a 6.5% hurdle for real estate debt funds and an 8.7% hurdle for opportunistic strategies.[4] In 2023–24 vintage funds, the average GP catch-up rate was 55%, accelerating GP participation pre-split. As fundraising timelines extend, the catch-up phase has become increasingly central to GP economics, intensifying LP scrutiny over incentive timing and alignment.

EXHIBIT 1: PREQIN 2025 PRIVATE CAPITAL PRIVATE FUND TERMS. REAL ESTATE FEES CONTINUE TO SLIDE



*Comprises vintage-2025 funds and those still raising

Source: Preqin, data as of June 30, 2025

Evidence of LP negotiating power is clear: Management fee discounts occur most frequently and are the largest on average in real estate. Since 2021, mean investment period management fee rates have declined to 1.31%, a 20-year low due to fundraising pressures.[5] This shift toward greater LP favorability is structural: 28% of real estate funds since 2020 report adopting a dual-basis fee model, reducing the overall effective fee. Taken together, these trends underscore a durable rebalancing of economic control toward LPs rather than a temporary response to market dislocation.

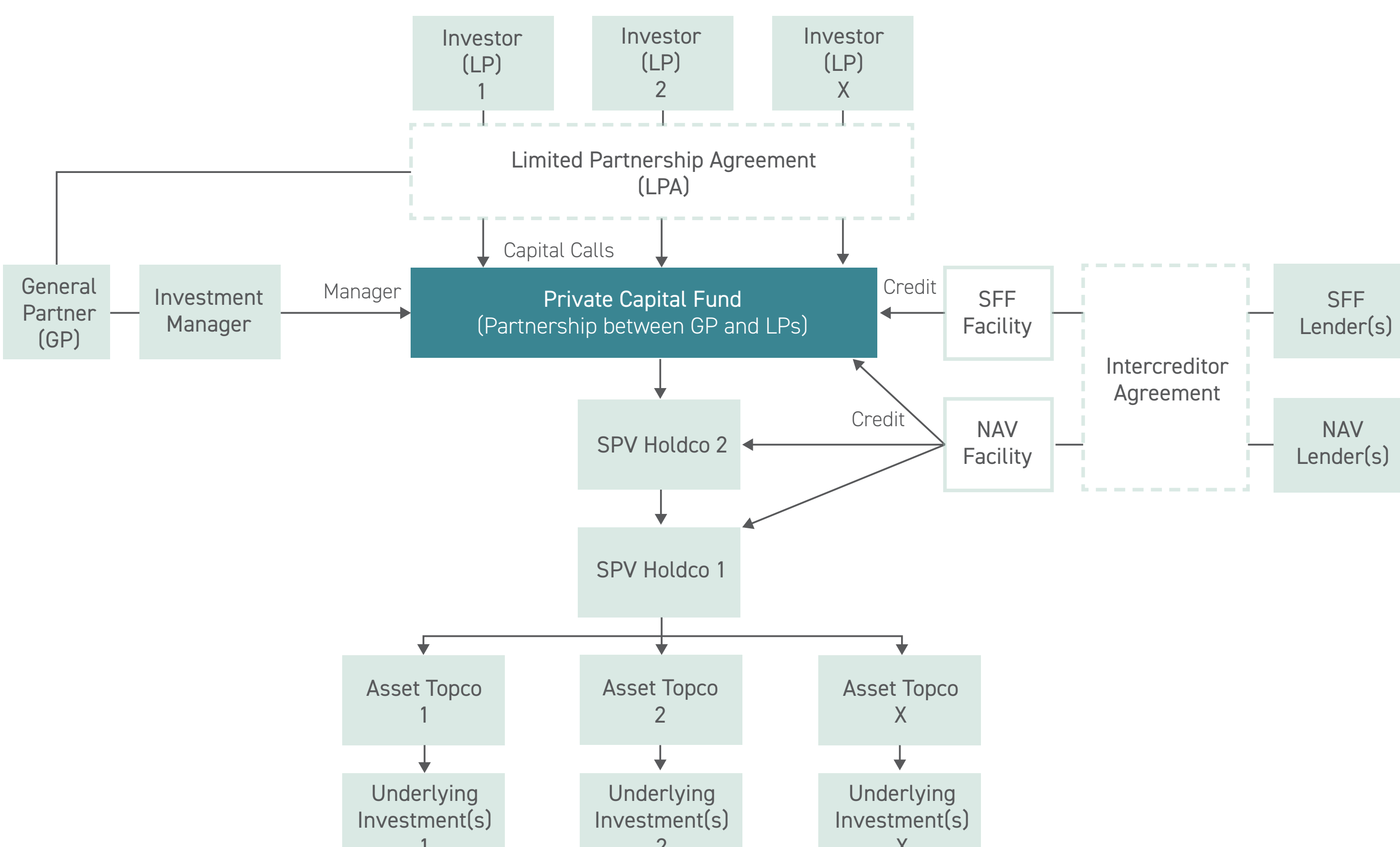
Managers are increasingly leveraging liquidity engineering tools to navigate market illiquidity and maturity. NAV facilities are used to bridge distribution shortfalls and extend business plans on transitional assets until valuations recover.[6] They are materially more expensive than subscription facilities, running 200–500bps higher, and often include covenants and cash sweeps. Their growing use reflects the prioritization of balance sheet flexibility over near-term cost efficiency in a constrained liquidity environment.

Structurally, they operate as secured facilities backed by pledged shares or recourse-light facilities secured only by cash flow, with spreads differing by 100–150 basis points. While headline limits can reach 25% loan-to-value, practical usage is often closer to 5%. Despite LP scrutiny over potential leverage creep, adoption is rising, with 43% of surveyed lenders executing NAV deals on real estate and infrastructure portfolios in 2024. Importantly, access to NAV financing remains stratified by platform scale, asset quality, and reporting discipline, reinforcing advantages for larger, institutional managers.

In parallel, GP-led secondaries and Continuation Vehicles (CVs) have become critical safety valves for high-conviction assets. This market expanded sharply in 2024 to $14.6 billion, a 49% increase from $9.8 billion in 2023, driven by liquidity pressures that left distributions 60% below their 10-year average.[7] Manager-led secondaries dominated, growing 52% year-over-year to $9.33 billion in volume. Real estate secondaries priced near 71% of NAV in H1 2025, reflecting the gap between reported valuations and transaction pricing. Activity in 2025 is projected at $15 billion, with strong interest in CVs tied to hard-to-replicate assets.[8] However, managers must meticulously manage the inherent conflicts of interest when acting as both buyer and seller in these transactions. While these structures offer critical optionality, they also heighten governance complexity, requiring rigorous conflict management as GPs increasingly act as both buyer and seller of assets.

In aggregate, these shifts signal a fundamental re-architecture of real estate investment management, where fee economics, liquidity tools, and governance structures are no longer ancillary considerations but core determinants of platform durability. As capital becomes more selective and exits more episodic, the ability to actively manage alignment, balance sheet flexibility, and LP confidence has become a competitive advantage in its own right. Managers that can integrate disciplined fee design, transparent data practices, and sophisticated liquidity solutions will be best positioned to sustain investor trust, access scalable capital, and navigate an increasingly institutionalized and capital-constrained market.

EXHIBIT 2: FITCH NAV FACILITY STRUCTURE



Source: Fitch Ratings

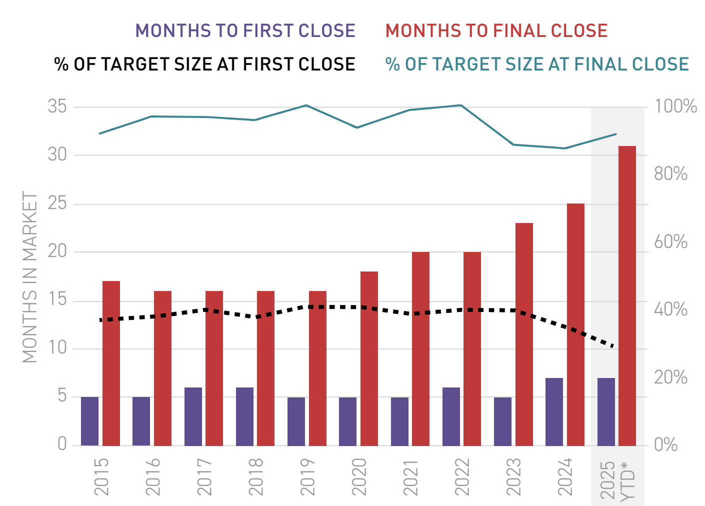
FUNDRAISING AND DISTRIBUTION

Fundraising is stabilizing in 2025, with year-to-date commitments already surpassing 2024 levels and on pace to reach $129 billion.[9] Core real estate fundraising is rebounding on expectations of lower rates and the ability to buy assets below replacement cost. According to Preqin, Core strategies remain a large draw capturing 20% of capital raised in 2025. (20) Independent research reinforces that fundraising friction over the past several years has been driven less by return expectations and more by realized capital availability. As Green Street observes, “there can often be a wide gap between paper and realized returns,” (19) a dynamic that has intensified LP focus on cash distributions as a primary measure of performance. Therefore, this recovery in fundraising momentum reflects selective re-engagement rather than broad-based risk-on behavior, with capital concentrating around perceived downside protection and repricing opportunities.

Fundraising performance has marginally improved, with 30% of funds closed in H1 2025 exceeding their targets. While the number of funds closed rose to over 480 funds in 2024, the average size fell to $231.2 million, about half of the 2020 peak, implying more vehicles are raising smaller tickets. This bifurcation suggests increasing fragmentation below the mega-manager tier, alongside continued scale advantages for platforms able to aggregate capital efficiently. Debt strategies are exceptionally strong, with private funds targeting North American commercial real estate raising $20.9 billion so far in 2025, on pace for a record year as banks retrench.[11] Private credit is increasingly functioning as a structural replacement for regulated bank balance sheets rather than a cyclical supplement.

These dynamics directly constrain capital recycling across vintages. A key source of capital for new private market investments and funding calls is distributions from older vintage private market funds, underscoring how delayed realizations impair fundraising momentum even as investor appetite remains intact.

EXHIBIT 3: PREQIN 2025: PRIVATE CAPITAL FUND TERMS ADVISOR REAL ESTATE FUNDS TAKING LONGER TO RAISE



*YTD includes data up to August 2025

Source: Preqin, data as of August 26, 2025

A defining feature of this cycle is the shift in the capital-source mix, with the rise of the private wealth channel filling gaps left by slower institutional pacing.[12] This diversifies GP dependence and better aligns investor horizons with real estate strategies. Family offices are highly engaged, with real estate representing 25% of their North American allocations. The growing influence of private wealth is reshaping product design, liquidity expectations, and reporting cadence across the industry.

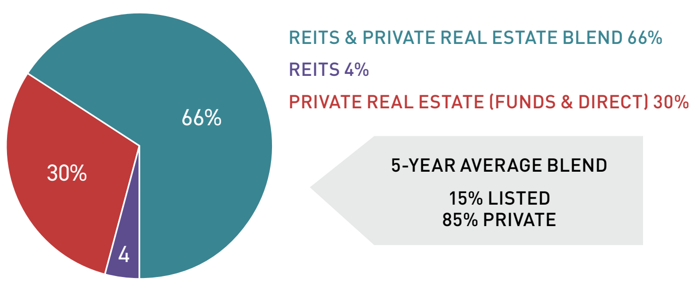
The growing emphasis on liquidity design reflects a broader shift in how performance is evaluated. Investors have now turned an eye towards metrics focused on distributions as cash in hand becomes a more critical factor in judging performance of private funds.

This trend has propelled the creation of semi-liquid or evergreen vehicles designed for both the high-net-worth and Defined Contribution (DC) channels.[13] These vehicles reflect a structural rethinking of capital formation, prioritizing continuous deployment, automatic reinvestment, and smoother cash-flow profiles over traditional drawdown models.

DC plans, which already hold over $59 billion in private real estate strategies, are adopting blended structures (typically 70–85% private real estate with 15–30% liquid REITs) to provide daily liquidity while preserving long-term private-market exposure. Examples include Blackstone’s BREIT, a non-listed, perpetual, monthly-valued REIT offering capped quarterly share repurchases at ~5% of NAV (20). Similarly, the Clarion Partners Real Estate Income Fund (CPREX) is an Investment Company Act of 1940-registered evergreen vehicle providing daily valuation, immediate deployment, and quarterly liquidity through tender offers.[14] These structures highlight the increasing importance of liquidity engineering, valuation governance, and redemption management as core competencies for managers accessing non-institutional capital.

These structures demonstrate how liquidity design, valuation cadence, and portfolio mix can be tuned to channel requirements. As these channels scale, success will increasingly depend on disciplined portfolio construction, transparent communication, and the ability to manage liquidity expectations through market cycles without impairing long-term value. Collectively, these fundraising dynamics underscore a structural shift in how real estate capital is formed, accessed, and retained. Capital is becoming more continuous, more diversified by channel, and more sensitive to liquidity design, placing greater emphasis on vehicle architecture, valuation governance, and investor communication. As private wealth and DC capital scale alongside institutional allocations, managers that can balance redemption mechanics with long-duration investment discipline will be best positioned to sustain fundraising momentum and protect portfolio value across market cycles. As Green Street succinctly frames the irony of the current cycle, "investors are demanding more distributions from illiquid vehicles only to then reinvest back into illiquid vehicles," (19) reinforcing why liquidity engineering and vehicle architecture for this new wave of fundraising have become structural, not cyclical, considerations for managers.

EXHIBIT 4: US DEFINED BENEFIT PENSIONS REAL ESTATE STRATEGIES



Source: Preqin Real Estate Online (January 2025). Weighted by invested assets.

In U.S. ODCE core funds, the average Total Global Expense Ratio (TGER) is 0.67% on GAV and 0.95% on NAV, with most funds clustering tightly between 0.6% and 0.7%.[15]

OPERATING MODEL AND DATA

Tighter expense governance and scale economies are optimizing the operating model. In U.S. ODCE core funds, the average Total Global Expense Ratio (TGER) is 0.67% on GAV and 0.95% on NAV, with most funds clustering tightly between 0.6% and 0.7%.[15] Management fees dominate the TGER at 0.56% (GAV)/0.79% (NAV). Crucially, the vehicle-cost loads of larger funds are roughly half those of smaller peers, underscoring the value of standardized processes. Vehicle costs (0.10–0.15%) are led by professional services (0.03–0.04%) and valuation costs (0.02%), while performance fees remain minimal at roughly 0.01%. These dynamics reinforce scale as a structural advantage, where disciplined cost control and operating leverage directly translate into higher net returns and improved fundraising competitiveness.

Reporting and data governance are converging on cross-asset best practices for comparability and auditability.[16] The ILPA Principles 3.0 anchor LP expectations, requiring standardized, transparent, independently audited reporting on fees, expenses, and carry, prompt material-event notices, and LPAC oversight.[17] For global reporting, the INREV Standard Data Delivery Sheet (SDDS) has become the market standard for American GPs reporting to European LPs, streamlining data flows and improving efficiency.[18] As data standards converge, reporting quality is increasingly viewed as a proxy for governance strength, risk management discipline, and institutional readiness.

AI and technology deliver tangible operating leverage. In asset management and leasing, VTS covers over 13 billion SF and 60% of US Class A office space. Its embedded AI (Proposal AI) cuts proposal entry time by 93%, saving an estimated 25,000 hours annually, and has produced measurable results like 59% faster deal execution at Carr Properties. In reporting and investor relations, Juniper Square manages over $1 trillion in investor equity. Its generative AI features automate the ingestion and summarization of documents, compressing review timelines from days to minutes while enhancing accuracy. In credit underwriting, platforms like Polly.io automate eligibility checks and recommend structuring adjustments, leading to reported efficiency gains of up to 12%, and lock-volume growth exceeding 150% in a year. Together, these tools are shifting technology from a back-office support function to a core driver of execution speed, underwriting consistency, and platform scalability in turn reshaping how managers compete for capital and transact in increasingly complex markets.

TALENT & ALIGNMENT: PERFORMANCE-TIED COMPENSATION AND PLATFORM SCALE

Compensation structures in real estate investment management are increasingly sophisticated and performance-driven, focusing on GP–LP alignment and talent retention. Carry is typically tiered by strategy, with opportunistic and value-add funds offering the highest upside, followed by credit, and then core. NAV-based fund structures shape compensation timing and valuation. In closed-end funds, promote NAVs can be volatile, often pricing 20–30 cents on the dollar in buyouts compared to more easily valued equity in REITs or open-end funds.

A key market challenge is the shrinking "triangle of leadership" as succession planning falters. Promote buyouts are less frequent as many legacy pools went underwater, making some senior talent more accessible without expensive incentive packages. However, LPs are increasingly sensitive to organizational economic misalignment, recognizing that compensation structures must support talent retention to mitigate downstream investment risk. Talent stability is now viewed as a component of underwriting risk, particularly for multi-asset and long-duration strategies.

The risk for the deal maker has increased as GPs are pushing for full-term deal-level carry, which introduces greater individual risk tied to entire deal outcomes.

Retention structures are more rigorous than in the past, with firms commonly holding back ~25% of carry, which vests only upon asset sales or vehicle performance. This ensures long-term alignment. Compensation for senior dealmakers is tied to 1–5% of sponsor-side return economics, with retention bonuses largely replaced by these performance-tied mechanisms.

To manage the tension between successful deal execution and fund realization timing, separate managed accounts and synthetic crystallization mechanisms further reflect this evolution, with bespoke arrangements allowing professionals to access 50–60% of held-back returns while the rest remains tied to long-term realization.

Firms are also taking a surgical approach to allocating meaningful economics, vetting deal sheets, track records, and leadership ability to ensure the "right people" are rewarded. While carry practices often net to 1–2x base salary, career choices for senior professional's hinge as much on leadership opportunity and firm influence as on absolute pay. The rise of large, multi-product platforms (e.g., Blackstone, Blue Owl) further diversifies compensation, layering fund- and deal-level carry with corporate equity and REIT share programs—a "total comp" stack that raises the bar for competing firms. In contrast, public REIT compensation often follows a "get rich slowly" approach through long-term share payouts. This divergence reinforces the competitive advantage of scaled platforms able to offer diversified economic participation and long-term career pathways.

Overall, the combination of NAV-driven dynamics, tighter vesting schedules, and internal scrutiny has created a more disciplined environment, underscoring that alignment of incentives across professionals, firms, and LPs is the cornerstone of modern compensation. In an era of constrained liquidity and heightened governance expectations, compensation design has become a strategic lever for platform durability rather than a secondary human-resources consideration.

ABOUT THE AUTHORS

Finn DuComb-Festor is an Equity, Debt & Structured Finance Analyst for Cushman & Wakefield.

Miles Treaster is the President of Capital Markets for the Americas at Cushman & Wakefield.

NOTES

[1] Preqin: The 2025 Private Capital Fund Terms Advisor

[2] Preqin: What Longer Fund Terms Mean for Management Fees https://pro.preqin.com/insights/research/research-notes/what-longer-fund-terms-mean-for-management-fees

[3] Preqin: What Longer Fund Terms Mean for Management Fees

[4] Preqin: The 2025Private Capital Fund Terms Advisor

[5] Preqin: The 2025 Global Real Estate Report https://www.preqin.com/insights/global-reports/2025-real-estate

[6] Rede Annual Report NAV https://www.rede-partners.com/news-insights-database/nav-financing-report-2025

[7] PERE Secondaries Report https://www.perenews.com/secondaries-recapitalizations/;

[8] Jefferies Global Secondary Report H1 2025 https://www.jefferies.com/wp-content/uploads/sites/4/2025/08/Jefferies-Global-Secondary-Market-Review-July-2025.pdf?utm_term=6601147548

[9] Cushman and Wakefield US Capital Formation https://www.cushmanwakefield.com/en/insights/a-new-wave-of-capital-formation-in-us-cre

[11] PERE Fundraising H1 2025 Report; Preqin Alternatives in North America https://pro.preqin.com/insights/research/reports/alternatives-in-north-america-2025

[12] Preqin: 2024 Capital Raising Guide – Private Wealth https://pro.preqin.com/insights/research/reports/fundraising-from-private-wealth-2024-a-guide-to-raising-capital

[13] Clarion Partners, Prioritizing Defined Contribution Plan Participant Outcomes with Private Real Estate https://www.clarionpartners.com/insights/prioritizing-dc-plan-participant-outcomes-with-private-real-estate; ICI Global, U.S. Retirement Market, Q1 2025 https://www.ici.org/researchstatistics/quarterly-retirement-market-data

[14] CPREX https://www.franklintempleton.com/investments/options/tender-offer-funds/products/92083/I/clarion-partners-real-estate-income-fund-inc/CPREX

[15] US Global ODCE Funds (INREV)

[16] MSCI Global Standards for Real Estate Investment https://www.msci.com/documents/1296102/1311232/MSCI+Global+Data+Standards+for+Real+Estate+Investment.pdf

[17] ILPA Principles 3.0 https://ilpa.org/wp-content/uploads/2019/06/ILPA-Principles-3.0_2019.pdf

[18] INREV SDDS https://www.inrev.org/library/inrev-standard-data-delivery-sheet-sdds

[19] Green Street: Head on the Beach – Distribution Dilemmas

[20] Preqin Fundraising by Strategy 2025 - ACC

CLARIFYING VISION

Cliff Booth
Founder and Chairman
Westmount Realty Capital

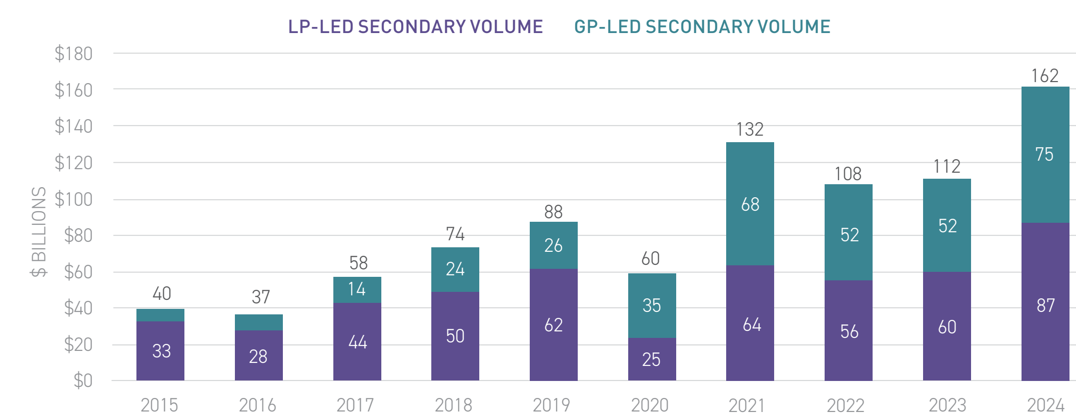
Recent CRE capital flows have declined significantly due to heightened interest rates, market uncertainty fueled by trade tariffs, and US governance challenges. What does this mean for the dynamics of capital flows into the US?

Recent commercial real estate (CRE) capital flows have declined significantly due to heightened interest rates, market uncertainty fueled by trade tariffs and generally volatile fiscal and monetary policy expectations, among other factors.

Institutional investors, such as pensions and endowments, have notably pulled back on CRE allocations citing underperformance and capital locked in current fund vehicles. Smaller investors, including registered investment advisers (RIAs) and family offices, have exhibited caution to making commitments to new funds and private placements amidst the uncertain environment.

Meanwhile, secondary funds have emerged to partially fill the liquidity gap created by restrained primary market activity, although they have not fully compensated for the broader reduction in capital flows. This has also become a rising trend in other private markets such as private equity as both LP and GP-led secondaries have provided additional liquidity solutions.

EXHIBIT 1: GLOBAL SECONDARY TRANSACTION VOLUME HAS BEEN INCREASING



Source: Jefferies: Data as of December 31, 2024

When investors do allocate to CRE, there remains a strong preference for industrial and multifamily sectors, including niche sub-types such as cold storage, build-to-rent, and single-family rentals, despite distress in some areas such as Sunbelt multifamily markets that were heavily leveraged with floating-rate debt.

Additionally, the rise of private credit due to higher interest rates presents a competitive challenge to equity capital raising.

Foreign capital inflows into US CRE have also contracted due to a weakening dollar, tariffs, and immigration policies. However, recent Federal Reserve rate cuts have begun stimulating transaction activity and may further improve CRE capital flows, especially with new sources such as 401(k) investments emerging from executive orders.

The cost and availability of debt had become prohibitively and relatively high in 2023-24 compared to when the Federal Funds target was near 0%, causing a downturn in CRE market activity, with banks focusing more on managing existing loans amidst an anticipated loan maturity wall in 2023 and beyond.

This article explores these dynamics in detail.

IMPACT OF HIGHER INTEREST RATES AND GOVERNMENT SHUTDOWN ON CRE CAPITAL FLOWS

Higher interest rates have made debt financing substantially more expensive and less available, leading to a sharp reduction in CRE transaction activity during 2023 and 2024. Banks and traditional lenders have pulled back, prioritizing existing loan portfolios and tightening underwriting standards amid economic uncertainty.

The cost of capital rose as widely referenced benchmarks including the 10-year Treasury yield and secured overnight financing rate (SOFR) remained elevated, limiting both acquisition activity and refinancing opportunities. Moreover, the US government shutdown that began in late 2025 delayed critical economic data releases such as employment reports, construction permits, and housing starts, undermining investor confidence and increasing market volatility.

This political uncertainty has start to cause some lenders to raise risk premiums and adopt more conservative stances, further constraining lending availability and deal-making in commercial real estate. However, credit spreads do generally remain historically tight, largely due to the growing influence of private credit.

> In 2025, CRE secondaries activity has thrived, offering a cost-efficient and quicker deployment path during the recovery stage of the cycle.

INSTITUTIONAL INVESTOR RETREAT AND SMALLER INVESTOR HESITANCE

Institutional investors such as pensions and endowments have reduced CRE allocations partly because of disappointing recent returns and significant capital commitments locked inside existing closed-end fund vehicles.

The 2024 Real Estate Allocations Monitor noted that 17% of institutions were planning to lower target real estate allocations by 140bps in 2025. Many institutions are looking to exit at discounts, creating more opportunities for secondary fund investors but signaling a lack of appetite for new primary market allocations. Similarly, smaller investors, including RIAs and family offices, have become increasingly cautious.

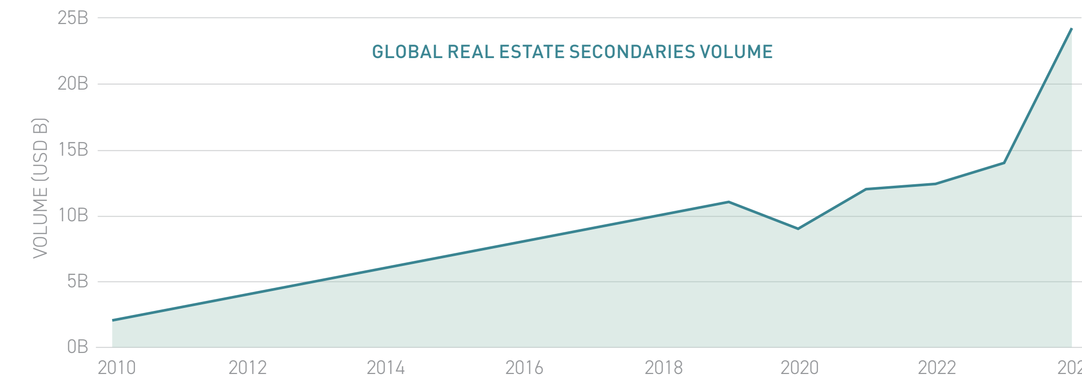
These investors are wary of committing to new fund raises amid uncertainty about future performance and market timing, often preferring to wait for more stability before deploying fresh capital. Many have also expressed more liquidity mechanisms than are offered in traditional closed-end fund structures.

RISE OF SECONDARY FUNDS AS A PARTIAL SOLUTION

Secondary funds have become increasingly important in providing market liquidity and offering exit options to originally committed investors. In 2025, CRE secondaries activity has thrived, offering a cost-efficient and quicker deployment path during the recovery stage of the cycle.

Secondary transactions allow investors to purchase interests in existing funds or portfolios, often at discounts, and without the need for new primary commitments. This activity has been supported by the extended hold periods and repricing of assets that have made primary market sales more challenging. Despite this, secondary funds have not been fully sufficient to offset the broader reductions in capital flow into primary CRE deals, partly due to the sheer scale of capital still held in existing vehicles and ongoing market uncertainty.

EXHIBIT 2: RISING GLOBAL REAL ESTATE SECONDARIES VOLUME (2010-2024)



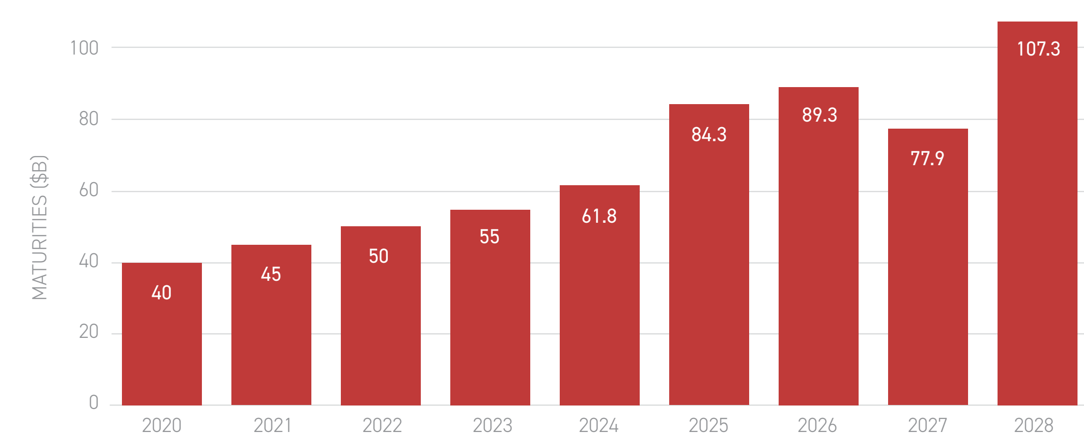
Source: CBRE IM, Ares Mgmt, 2024 volume nearly doubled prior peak

ASSET PREFERENCES AND NICHE SUBTYPES

When investors have allocated capital to CRE in this environment, there has been a clear preference for sectors perceived as more resilient or offering growth potential, namely industrial and multifamily assets. Within these sectors, interest has concentrated on niche subtypes including cold storage—which benefits from rising e-commerce demand—and build-to-rent single-family rental projects, popular for their ability to meet shifting housing preferences. These asset types have tended to provide income stability and growth opportunities even in a tough market.

Nonetheless, pockets of stress remain, particularly in Sunbelt multifamily markets where properties bought at peak cycles with floating rate debt face refinancing challenges amid higher interest rates. This is reflected in the increasing dollar amount of loan maturities, of which many loans have been extended and modified beyond their original maturity dates.

EXHIBIT 3: RISING US MULTIFAMILY LOAN MATURITIES (2020-2028)



Source: Yardi Matrix, Proxy for Maturity wall trend including Sunbelt

COMPETITION FROM PRIVATE CREDIT AND FOREIGN CAPITAL REDUCTIONS

The rise of private credit has complicated capital raising for CRE equity as non-bank lenders have stepped in to provide debt capital at a time when traditional bank lending tightened. These private debt funds, often with more flexible structures but higher costs, compete directly with equity fundraises, absorbing investor attention and capital. They also do not have to contend with the same regulatory framework as traditional bank lenders.

Meanwhile, capital inflows from foreign investors have declined due to a combination of a weakening US dollar, tariff uncertainties, and restrictive immigration policies. This retrenchment has further contributed to reduced overall capital availability in the US commercial real estate markets.

EARLY SIGNS OF RECOVERY AND NEW CAPITAL SOURCES

Despite the challenges, the Federal Reserve's initial rate cuts beginning in late 2024 have started to lower borrowing costs slightly and improve liquidity. This easing is expected to stimulate CRE transaction activity further into 2025 and beyond, with lower interest rates typically correlated with falling cap rates and improved investor returns.

Additionally, new sources of capital, such as 401(k) plans potentially enabled by recent executive orders, could boost capital flows into CRE funds, actual implementation remains far out. These changes may help re-invigorate capital inflows and fundraises in the sector, although meaningful recovery will depend on sustained economic stability and credit availability.

The commercial real estate sector now faces a looming loan maturity wall with approximately $2.2 trillion in loans maturing between 2025 and 2028, many tied to assets bought at elevated valuations and favorable low-interest-rate environments before the recent rate hikes.

THE DEBT MARKET AND LOAN MATURITY CHALLENGES

The sharply reduced debt availability and high cost during 2023 and 2024 led to markedly decreased CRE activity compared to previous years. Banks and traditional lenders significantly curtailed new loan originations, focusing on managing existing portfolios and loan modifications.

The commercial real estate sector now faces a looming loan maturity wall with approximately $2.2 trillion in loans maturing between 2025 and 2028, many tied to assets bought at elevated valuations and favorable low-interest-rate environments before the recent rate hikes. This situation presents considerable refinancing risk, particularly for highly leveraged properties, and has contributed to investor caution in committing new capital.

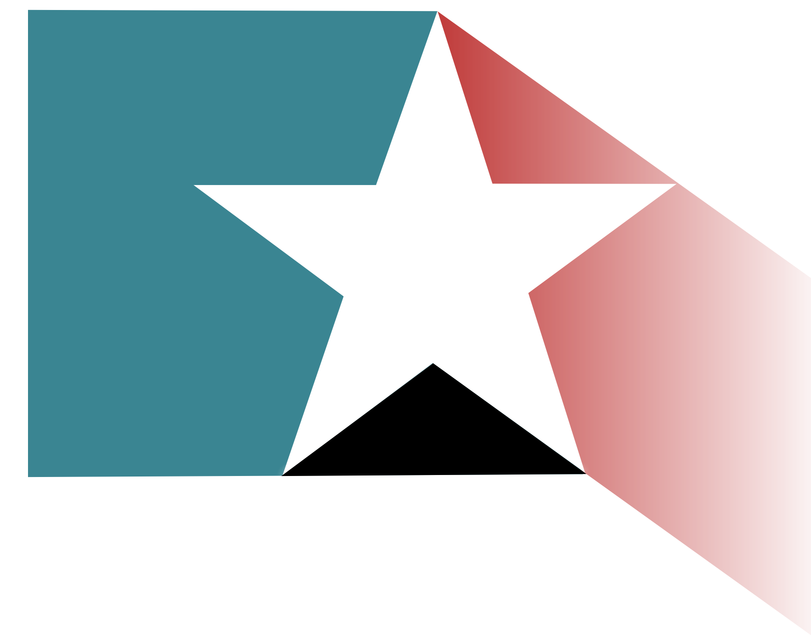
THE OUTLOOK

There have been many complicated and multifaceted reasons behind the slowdown in commercial real estate capital flows. Investor sentiment shifts, evolving market structures such as the growth of secondary funds, and the crosscurrents of debt market challenges have provided challenging headwinds while potential stimulus from rate cuts and new capital sources could offer needed offsetting tail winds.

The cautious stance persists across institutional and smaller investors alike, with targeted preferences for resilient sectors but widespread hesitancy to deploy fresh capital until the market outlook becomes clearer.

ABOUT THE AUTHOR

Cliff Booth is Founder and Chairman of Westmount Realty Capital, a private Dallas-based owner operator specializing in value-add, opportunistic and core plus investments.



Capital inflows from foreign investors have declined due to a combination of a weakening US dollar, tariff uncertainties, and restrictive immigration policies.

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