SUMMIT

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SUMMIT

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

ABOUT

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

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

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ABOUT THE COVER:

An empty retail storefront in the Irving Park neighborhood of Chicago, with a question mark signifying future development. Photo by Benjamin van Loon, 2024.

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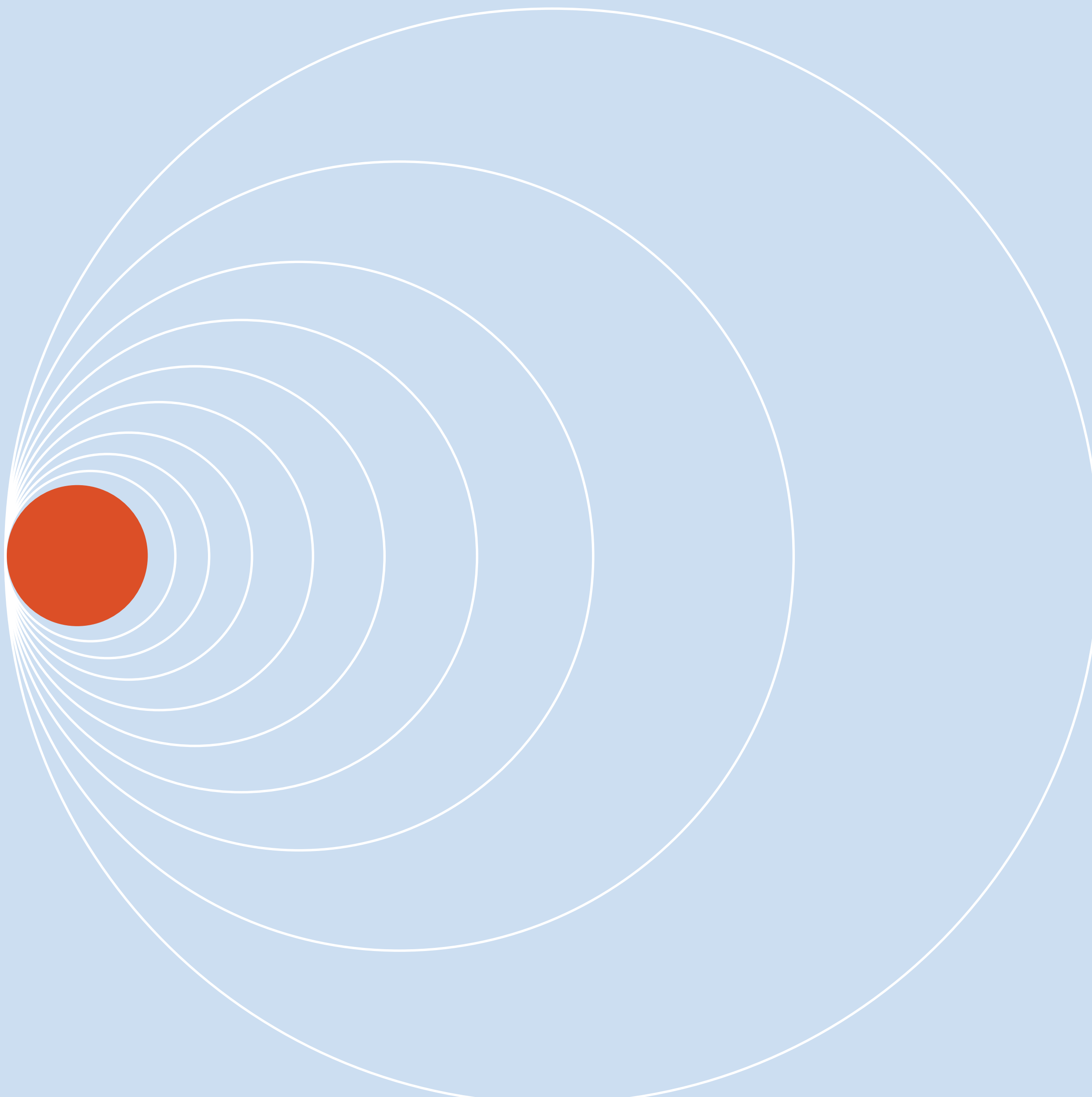
NOTE FROM THE EDITOR



On paper, data around market performance, interest rates, consumer preferences, and so forth seem to be telling a particular story: sober, sensible, and simple. But at street level—especially in the built environment—a different book is already being written.

In a recent "Bubble Trouble" podcast, hosted by Will Page (ex-Chief Economist for Spotify) and Richard Kramer (an independent analyst) and released at the end of this past January, they invited well-known urban economist Dror Poleg to the program for an extended conversation about the growing disconnect between "our economy and the world we build around it."

While many in our industry have documented this paradox (at least in an academic sense), the rapid disruption and evolution of "live-work-play" preferences and policies affected by the pandemic have further crystallized in the past few months. Especially in the face of an increasingly dominant political and cultural reality: the body of the world has changed, and now the mind is playing catch-up.

In the conversation with Page and Kramer, Poleg says—in this same figurative sense—that "our assumptions about work and success and productivity, and the institutions that we built to educate our kids" are part of what has become out of step with (or a step ahead of) the way we once built and financed our cities and communities.

Listeners of the AFIRE Podcast—which in 2024 released its 150th episode—may already be familiar with Poleg's core thesis on this point. He was a guest in our 2021.39 episode asking essentially the same question: as the world emerged from the pandemic into the new normal, what are the key lessons of novelty and economic evolution the real estate ecosystem should understand today to better plan for *tomorrow?*

This was an existential question for commercial real estate in 2021, and even more pertinent now. But its critical importance is still easily occluded. Amidst our increasingly cacophonous information ecosystem, which now seems to be one of the many new realities of the world's shifting social and technological order, it can be tempting to fetishize symptoms over sources. Or—to continue with the analogy of the body—it's easier to identify the illness than it is to understand the cause.

This seventeenth issue of Summit underscores this complication between identifying the vagaries of the present—a very important and necessary function of our industry analysts, researchers, and advisors—and confronting the certainties of the future: the way the world lives, works, and plays has changed, and continues to change, faster than the built environment. Not the tortoise and the hare, but the cheetah and the rock.

In this issue, we have both. Explorations of interest rate uncertainties, tax strategies, deal activities, valuations, migratory and climate patterns, and consumer habits still hold meaning, but with growing caveats—and without the naïve optimism of blind futurism. Real estate is *real*, and its next story will start at street level.

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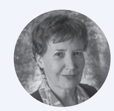
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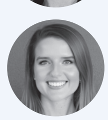

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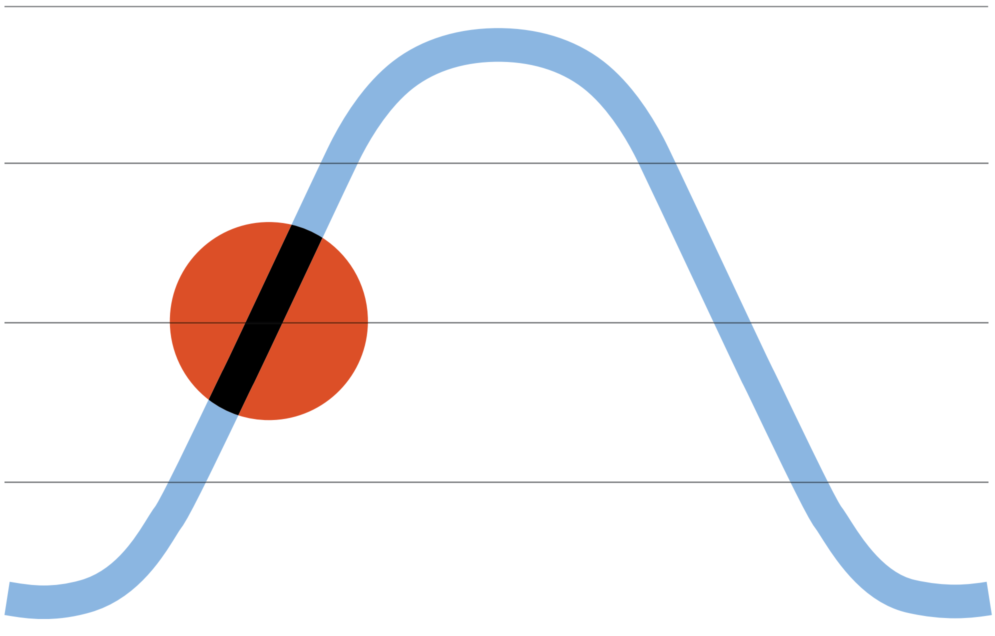
WHERE ARE WE IN THE CYCLE?



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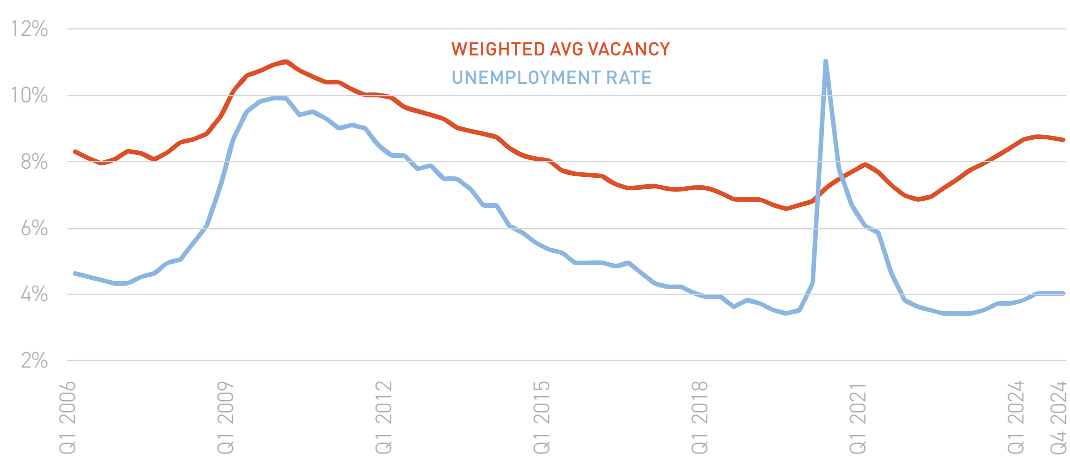
The US remains the largest global commercial real estate market—and an attractive target for investors. Past return performance, favorable growth and demographics, a strong legal infrastructure, and a diverse asset base continue to appeal to foreign investment.

With an outlook for continued economic growth and lower inflation in 2025, it feels like we have finally emerged from five years of economic turbulence in a better position than we might have feared along the way. Employment levels have remained high, and we have not seen a wave of loan defaults and asset repossessions. Although commercial real estate values have fallen and forward IRRs are nudging above the cost of capital, investment volume is still low. It seems like a good time to ask where are we in the cycle?

Exhibit 1 shows the situation. Unemployment is low and the average aggregate real estate vacancy rate has stabilized, so it seems we are late in the economic cycle and at the start of a new one in real estate. That's a tricky situation for real estate investors. Returns look attractive but are we too late in the economic cycle to be certain about rent levels and NOI growth? Are we investing in an economy that is overdue a recession? Is it possible that the effects of the pandemic and the subsequent economic policy response have set the table for a further period of economic expansion? Is unemployment still the best indicator of the overall economic cycle? This article will answer these key questions.

EXHIBIT 1: US UNEMPLOYMENT VS. WEIGHTED AVERAGE VACANCY RATE



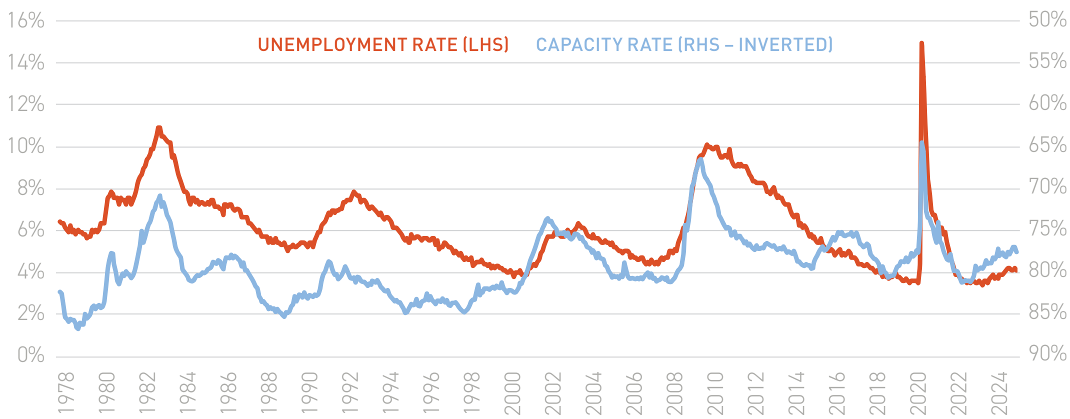
Source: CBRE Econometric Advisors, US Bureau of Labor Statistics.

THE ECONOMY

The unemployment rate over the past 40 years has been a remarkably consistent indicator of the economic cycle, characterized by six to nine years of economic expansion with hiring outpacing the growth of the labor force, followed by one to two years of economic contraction with a marked slump in the demand for labor *(Exhibit 2)*. Capacity utilization—a measure of how much of a nation's aggregate production potential is being used—is another cyclical indicator with a more sensitivity to mid-cycle slowdowns and follows a similar pattern.

Economic factors suggest that the economy is only mid-cycle, despite the very low unemployment rate, with several years of economic expansion ahead.

EXHIBIT 2: THE US ECONOMIC CYCLE



Source: US Bureau of Labor Statistics & Federal Reserve

Each of the past four cycles has been slightly different due to changes in regulation, the politics of the time and most importantly the sectors that over-expanded. Generally, over the course of each cycle, the output gap closes and turns positive, creating inflationary pressure. In response, central banks raise interest rates—usually not soon enough—and asset prices collapse, leading to some form of credit crunch. This is followed by a drop in consumption and then a surge in job losses. The worst is over when companies' profit margins are restored, and employment stabilizes. Inflation and Interest rates fall, and proactive fiscal policy gets the next cycle going. It is not completely clear why action by central banks always lags the cycle and growth in certain sectors gets out of control.

If we accept this standard cyclical pattern and consider the current level of unemployment, it appears that we are close to the end of the current economic cycle. However, inflation and interest rates are coming down, capacity utilization is some way off its cyclical peak and there are no obvious asset bubbles or over-leverage in the economy. These factors suggest that the economy is only mid-cycle, despite the very low unemployment rate, with several years of economic expansion ahead.

Three factors suggest that the unemployment rate might not be such a clear end of cycle indicator as it has in the past: structural change in the labor market, the long-term effects of the Global Financial Crisis (GFC) and the impact of pandemic-era policies.

The US labor participation rate is at a 40-year-low 62% since peaking at 66% at the end of the long boom of the 1990s. The older, less geographically mobile part of the population has been unable to adapt to the decline of manufacturing and growth of service sector jobs, many in the digital economy. Immigration has been profoundly strong over the same period, with 7.8 million more people in the US since 2010 and more than a third of which came between 2019 and 2023. As a result, the US has a reserve workforce that can be accessed when labor demand is high, substantively reducing inflation pressure at low levels of unemployment.

The long-term impacts of the GFC are twofold, both indirect. The GFC was so deep and the effects on consumers so severe (unemployment, loss of homes, negative home equity) that for the decade afterwards they paid down debt and reduced leverage. Very unusually, after 10 years of economic expansion since 2009, household balance sheets remained in very good shape. This alone suggests and extended cycle may be possible.

The second impact was due to politics. The hostility to political elites that developed due to the banking sector bailouts during the GFC helped usher in a period of fiscally liberal populism. Western governments had to spend heavily to protect ordinary households during the COVID pandemic, and this largesse has continued. This led to a jobs and savings bonanza that has left households in much better financial shape than at the end of the past three cycles. The household sector still has enough spending capacity to maintain the current cycle for some time.

The extraordinary and in hindsight excessive fiscal and monetary stimulus that was rolled out during the pandemic has had several profound effects, particularly the refinancing of the private sector. While households refinanced their mortgage rates at 2% to 3%, businesses also locked in cheap long-term debt. As a result, the private sector not only survived the sharpest rise in interest rates in 40 years but thrived. The hyper vigilance of the Fed and its liquidity support also allowed the banking sector to refinance itself through credit-loss provisions. Since 2022 the banking sector has made approximately $120 billion of provisions against losses.[1]

On the face of it, low unemployment suggests the economic cycle is near an end. However, a deeper analysis suggests this economic expansion probably has much farther to run.

What are the risks and opportunities?

The extraordinary and in hindsight excessive fiscal and monetary stimulus that was rolled out during the pandemic has had several profound effects, particularly the refinancing of the private sector.

Risks:

- Inflation is more likely to surprise on the upside than the downside. Even if the unemployment rate is less meaningful than it used to be, the labor market is still tight.
- Some elements of the Trump administration's policy package appear inflationary. There are 8 million job openings in the US and stricter immigration enforcement could worsen the labor shortage. Tariffs, if broadly applied, will increase prices in the short and medium terms and may raise business costs in the longer term by forcing production to move from lower- to higher-cost locations.
- A more inflationary environment, alongside the continued imbalance of government spending over taxation. will likely lead to higher-for-longer interest rates. High interest rates are always a feature of a late-cycle environment and may not hinder growth too much. However, there is an elevated risk of rapid financial tightening, including a continued surge in the US dollar's value.

Opportunities:

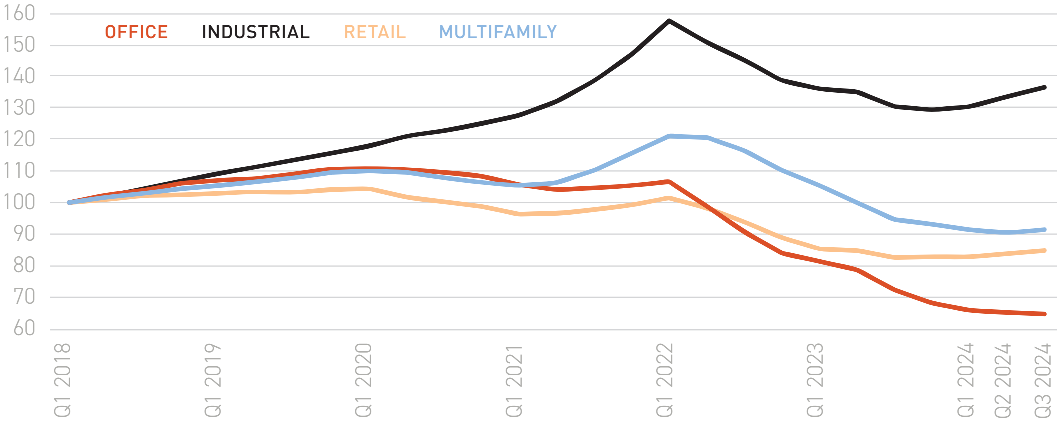
- Consumer and business balance sheets are unusually strong for this stage of the cycle and consumers could easily take on more debt, which would be positive for consumption.
- Business investment, particularly in AI technologies, and the tight labor market could easily drive a longer period of productivity growth, reducing inflationary pressures and extending the cycle. Some elements of Trump's policy initiatives, such as deregulation and corporate tax reduction, would support this trend.
- The global economy is in reasonably good shape. Falling inflation and interest rates in Europe and the U.K. likely will stimulate a modest but broad-based consumer recovery. China, which has a collapsed housing market and weak domestic consumption, is applying a sizable amount of stimulus to maintain economic growth.

THE REAL ESTATE SECTOR

The rise in the average aggregate vacancy rate marks the end of the most recent real estate cycle. It is a very unusual situation. Over the past 40 years, the end of the real estate cycle has always been at the end of the macro cycle, so real estate has suffered a very large drop in demand at the same time as new completions were elevated. In this cycle, real estate demand did weaken in response to the rise in interest rates, but except for office space has picked up quite quickly due to resilient GDP growth. The current rise in vacancy is mostly related to the cyclical surge in completions, especially in the multifamily sector.

Falling values, the other classic feature of the end of the real estate cycle, are also occurring *(Exhibit 3)*. Values would probably have fallen due to the rise in vacancy, but the sharpest rise in interest rates in 40 years and a real-estate-specific credit crunch have exacerbated the situation. Although real estate prices seem to be bottoming, it is possible that further value adjustment is required to bring investor demand back into line with investment supply.

EXHIBIT 3: US CAPITAL VALUE INDEX BY SECTOR, 2018 Q1 = 100

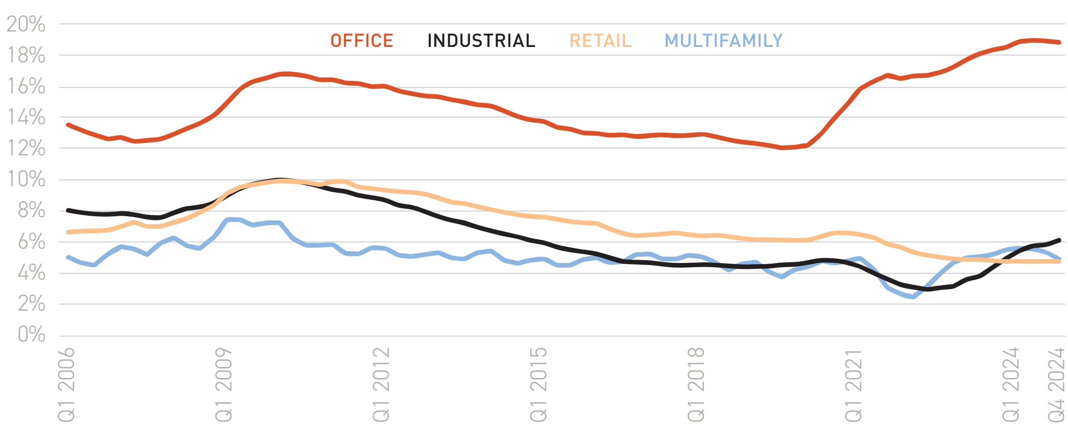


Source: CBRE Econometric Advisors.

How quickly will values recover? While the cyclical fall in vacancy that we anticipate over the next 12 to 24 months will be positive for values, a full recovery will not occur for at least the next five years. Debt financing for real estate investment is available from banks, institutions and debt funds, but rates are higher and loan-to-value (LTV) ratios lower than they were prior to 2022. Moreover, there is a large legacy of real estate losses that remain unbooked and unprovided for by the regional and community banking sector. Refinancing US real estate is proceeding in an orderly fashion, thanks to economic growth and Fed and FDIC supervision, but it is very much a work in progress. As the wall of commercial real estate loan maturities grows, higher interest rates increase the pressure on borrowers needing to refinance. S&P Global estimates that roughly $950 billion of US commercial real estate loans will mature in 2025.[2] Although most of these loans will be refinanced, some will default and create a drag on value growth.

Estimates indicate roughly $950 billion of US commercial real estate loans will mature in 2025.

EXHIBIT 4: REAL ESTATE VACANCY BY SECTOR



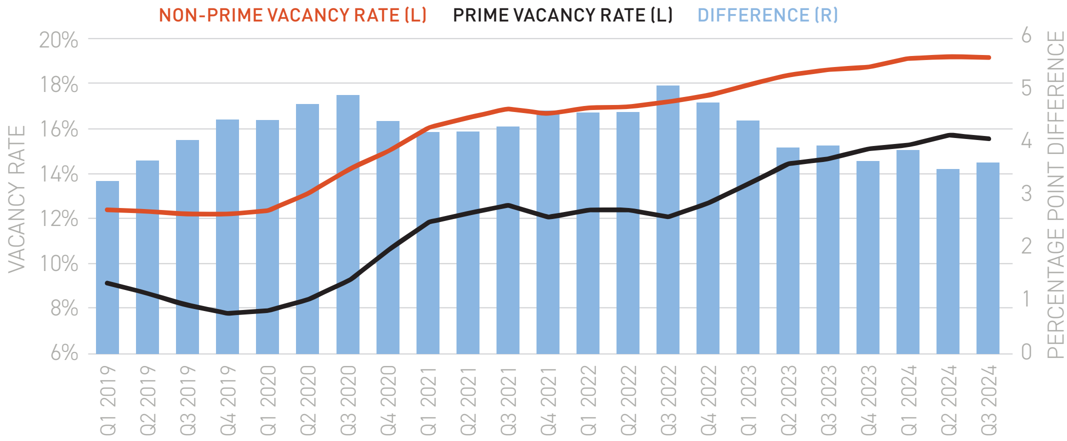
Source: CBRE Econometric Advisors.

Not all the movement in real estate values can be explained by the cycle and interest rates. Longer-term structural shifts also are a contributing factor. *Exhibit 4* shows the structural shift in office usage due to hybrid working. The surge in office vacancy has been an order of magnitude higher than that of the industrial and multifamily sectors. CBRE estimates that there will be a permanent reduction in demand, which makes it likely that 10% to 15% of total US office inventory is obsolete. While it is likely that office values will be the slowest to recover of any sector, higher-grade office assets will recover much more quickly than the average and could well provide the best returns of all sectors in the short and medium terms *(Exhibit 5)*.

Hardly any cyclical change can be discerned in the retail sector. Vacancy has trended down, with very little additional retail space added to the market over the past 15 years and a long-term structural shift to online sales and direct delivery. Americans spending more time near home has translated into greater retail sales at strip and neighborhood centers in prominent trade areas.

Office and retail are not the only sectors experiencing a blend of cyclical and structural effects *(Exhibit 6)*.

EXHIBIT 5: US OFFICE VACANCY RATE, PRIME VS. NON-PRIME



Source: CBRE Research & CBRE Econometric Advisors.

It is likely that 10% to 15% of total US office inventory is obsolete.

EXHIBIT 6: CYCLICAL & STRUCTURAL EFFECTS

SECTOR	CYCLICAL	STRUCTURAL	RISK	RECOMMENDATION
OFFICE	+	-	HIGH	BUY A, B+
MEDICAL OFFICE	+	+	MEDIUM	BUY A, B
LIFE SCIENCES	-	+	HIGH	DEFER A YEAR
INDUSTRIAL	+	+	LOW	BUY
MULTI-FAMILY	+	+	LOW	BUY
RETAIL GENERAL	+++	-	LOW	BUY
RETAIL MALLS	+	+	MEDIUM	BUY A
DATA CENTERS	+ / -	+++	MEDIUM	BUY
HOTELS	+	++	HIGH	BUY SELECTIVE

LOOKING AHEAD

Despite appearing late cycle, a mix of longer term and pandemic effects means that the macro economy may grow for several more years. From a real estate perspective, there has hardly been a better time to acquire real estate in the past 15 years. Virtually every commercial real estate sector is a buy, either entirely or selectively. Nevertheless, investors will have to bide their time for material capital value appreciation. A combination of higher-for-longer interest rates and certain bank loan workouts will keep the cost of capital high for several years. This real estate cycle will be about creative management for cashflow growth and adapting to structural shifts in occupier demand. This will all be made easier than it sounds because the drop in new construction starts that has accompanied this downturn in the real estate cycle likely will be prolonged.

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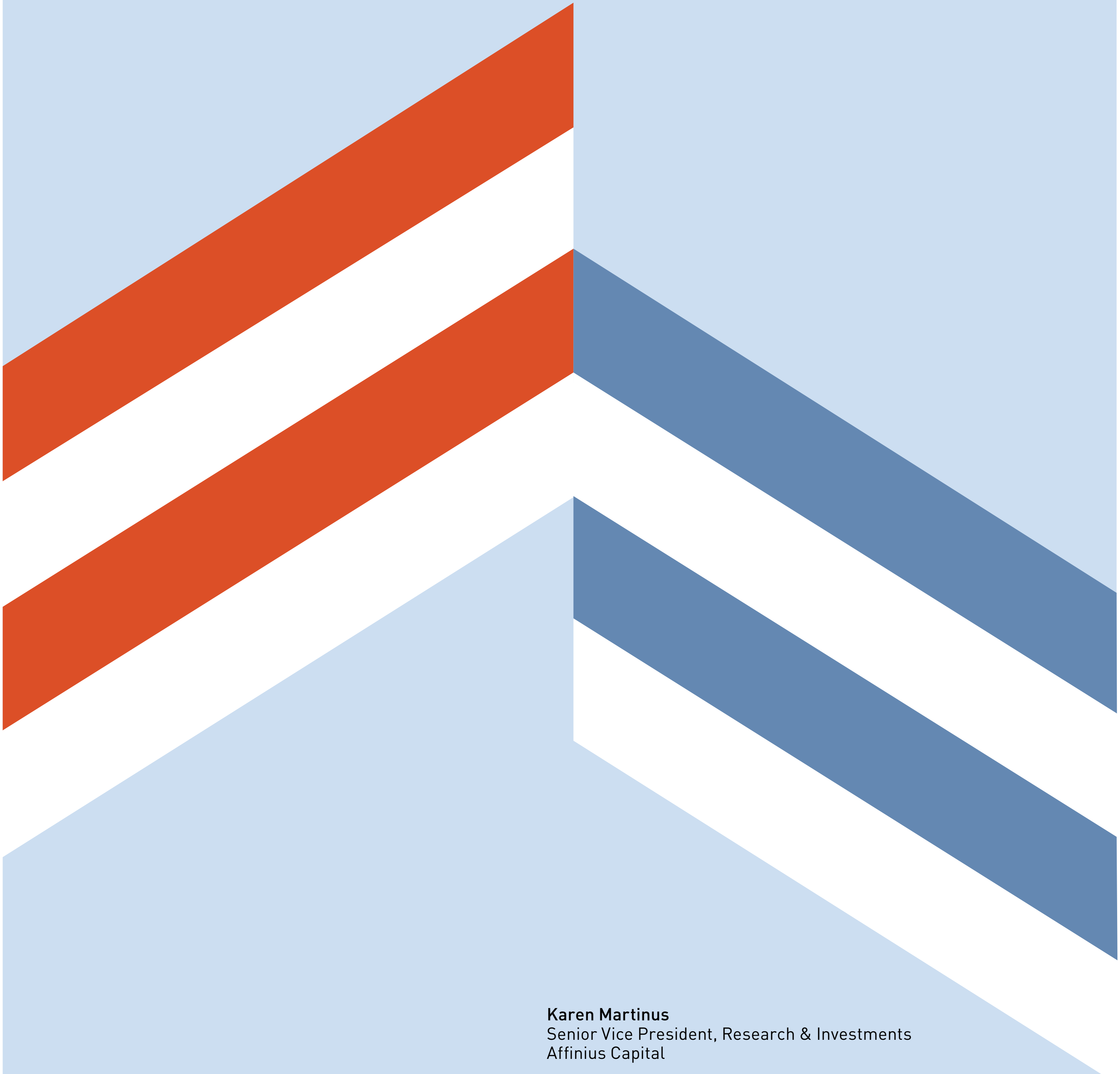
NOTES

[1] "US bank credit loss provisions soared in 2023 as credit concerns intensified," S&P Global, Feb. 21, 2024.

[2] "Commercial real estate maturity wall $950B in 2024, peaks in 2027," S&P Global, Sept. 5, 2024.

COMPELLING OPPORTUNITIES



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The US is the largest global commercial real estate market and remains an attractive target for investors. Past return performance, favorable growth and demographics, a strong legal infrastructure, and a diverse asset base have historically attracted foreign investors, and we expect this trend to continue.

Overseas investors continue to look to the US amid a hunt for diversification and enhanced yield. This article examines recent investment activity and explores our view on why now, more than ever, may represent a good opportunity for foreign investors to invest in US real estate.

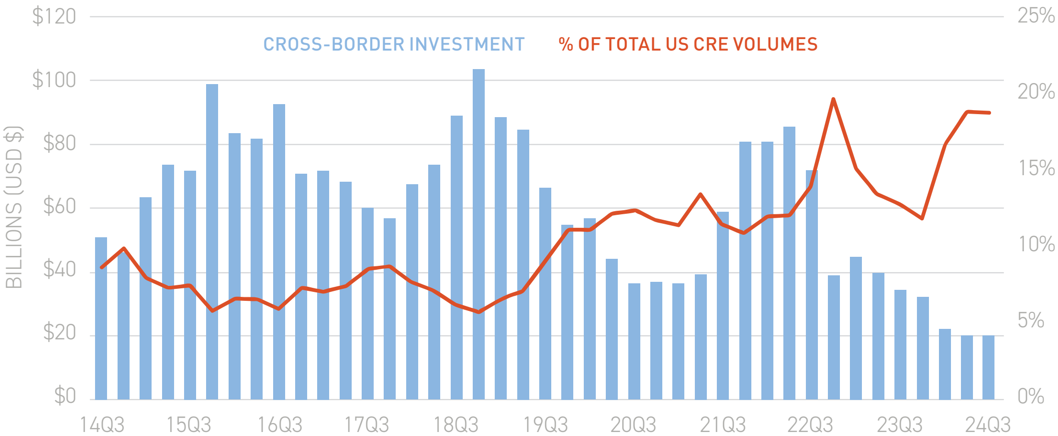
FOREIGN INVESTMENT DOWN, BUT NOT OUT

The volume of cross-border investment into the US fell sharply in 2024. Acquisitions by foreign investors totaled $20.2 billion for the year to Q3 2024, down 41% from the pace set in 2023 and 59% behind the 15-year average *(Exhibit 1)*.

The decline in cross-border activity was much sharper compared to total US CRE investment volumes which declined 14% year-over-year in the twelve months to Q3 2024.[1] While cross-border investment volume has remained limited, there are some positive signals in the latest trends, and resultant opportunities ahead.

The US remains one of the most active destinations for foreign capital in the world. Recently, the US CRE investment market is showing tentative signs of recovery from the slowdown sparked by elevated inflation and higher interest rates. The Federal Reserve has recently cut rates by 100 basis points, ODCE/NPI returns were positive in Q3 2024 for the first time since Q3 2022, and valuations (outside of office) appear to have bottomed. REIT sectors experienced a rebound in 2024, as most property sectors now trade near or at a premium to NAV, compared to a year ago, when all sectors were trading at substantial discounts to NAV.[2]

EXHIBIT 1: US CROSS-BORDER INVESTMENT AND SHARE OF TOTAL US CRE INVESTMENT



Source: MSCI Real Assets, as of October 2024

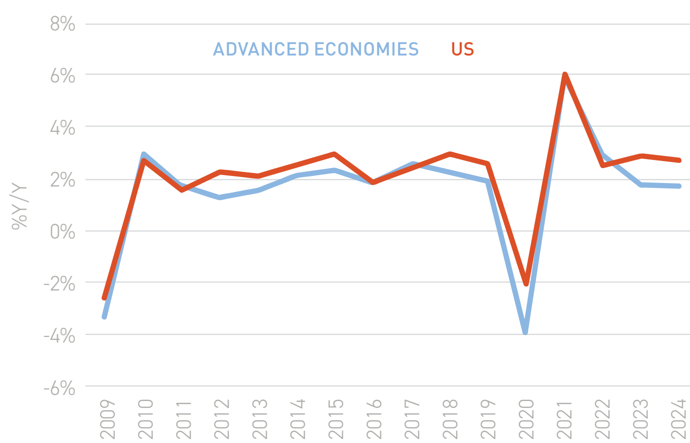
US FACES BETTER ECONOMIC PROSPECTS

Since 2009, US GDP growth has largely outperformed other advanced economies. The outperformance over the past two years has been especially stark—a trend that is expected to continue into 2025 *(Exhibit 2)*.[3] Continued healthy employment growth and moderating inflation are expected to have a positive effect on US economic activity over the next few years, and accordingly, growth forecasts have been revised upwards for both 2026 and 2027.[4]

Conversely, the imposition by the US of targeted tariffs on specific economies, particularly China, Mexico, and Canada (and to a lesser extent the European Union), could have an adverse effect on growth, particularly on exposed sectors such as car manufacturing. More broadly, measures of risk such as the Economic Policy Uncertainty Index remain elevated after a period of disruption from the pandemic, the surge in inflation, and fraying geopolitics.[5] In an investment environment with greater risk, investors are likelier to seek dollar-denominated real assets, particularly given the US dollar is still the overall reserve currency of the world.

In our opinion, the long-term demand drivers for US CRE remain attractive on a broad basis, and the outlook for fundamentals remains healthy.

EXHIBIT 2: GDP GROWTH: US EXPECTED TO OUTPERFORM ITS ADVANCED ECONOMY PEERS



Source: Moody's, Oxford Economics, November 2024

Continued healthy employment growth and moderating inflation are expected to have a positive effect on US economic activity over the next few years, and accordingly, growth forecasts have been revised upwards for both 2026 and 2027.

ATTRACTIVE OPPORTUNITIES FOR INVESTMENT

Cross-border investors still view US CRE as a stable, safe investment. According to the 2024 Investment Intentions Survey from PREA, Asian investors favor the US for out-of-region investments. European investors have a slightly larger allocation to global strategies, however these may have a significant US element.[6] The current market dynamics are setting up for a period of new opportunities that well-capitalized, prudent investors will be able to capture, leading to a period of outsized performance relative to peers. In light of the ongoing market volatility, our conviction around the intersection of real estate and technology has grown even stronger.

We see significant opportunities within logistics, data centers, and housing. The industrial market fundamentals remain strong, owing to accelerating tailwinds associated with e-commerce, on- and near-shoring, and a shift from "just-in-time" to "just-in-case" inventory levels.

Leasing activity reached 621.4 million square feet in the nine months to Q3 2024, up 5.2% compared to a year ago, and on track to finish 2024 with the third-highest annual total on record. The e-commerce share of total non-auto retail sales—a key indicator of demand for warehouse space—increased for the seventh consecutive quarter to a record-high 23.2%.[7] Even with the acceleration, there is still scope for expansion of online sales, compared to a more digitally mature market such as China, where almost 40% of the country's retail sales come from e-commerce.[8]

In addition, evolving rental housing needs among a broad demographic coalition, combined with inadequate housing supply, has given rise to enduring investment opportunities across the rental housing spectrum. A combination of demographic trends, lifestyle choices, and the challenges of home ownership will continue to fuel strong demand for rental properties. Despite some excess supply over the last two years, which resulted in rental softening, the long-term fundamentals in housing remain compelling.

The rapidly increasing demand for digital storage is expected to change the data center landscape for many years to come. Some of the largest companies for cloud computing, including AWS, Microsoft, Meta, and Google are US-based, and are expected to be significant drivers of data center demand in the coming years. The demand for data is expected to be substantial, presenting a strategic advantage for platforms ready to serve major cloud providers and hyperscalers with a vertically integrated investment platform.

We believe private real estate debt also presents an attractive proposition, at a time when traditional lenders have withdrawn from more complex situations due to regulatory and financial pressures. We believe there continues to be an opportunity for alternative lenders to fill this void, create velocity, and capitalize on the robust demand in the commercial lending sector.

In light of the ongoing market volatility, our conviction around the intersection of real estate and technology has grown even stronger.

RELATIVE PERFORMANCE

The long-term demand drivers for US CRE remain attractive on a broad basis. Over the last thirty years, private core real estate, as measured by the NCREIF ODCE Fund Index, has generated compelling absolute returns; but more importantly, the strongest risk-adjusted returns for investors based on a Sharpe ratio of 0.74.

The high-quality nature of CRE holdings that produce solid levels of current cash flow due to long-term, in-place lease agreements with creditworthy tenants combined with appreciation in the residual value of the assets has the ability to drive compelling performance. With greater clarity on future asset values anticipated, foreign buyers should become much more active as buying opportunities emerge.

EXHIBIT 3: PRIVATE CRE PROVIDES STRONGEST RISK-ADJUSTED RETURNS – HISTORICAL TOTAL RETURNS BY ASSET CLASS AS OF 9/30/2024

ANNUALIZED TOTAL RETURNS	US CORPORATE BONDS	US EQUITIES	US REITS	NFI-ODCE INDEX
5-YEAR	0.3%	16.0%	5.1%	2.1%
10-YEAR	1.8%	13.4%	8.0%	5.2%
30-YEAR	4.7%	10.8%	9.9%	7.0%
VOLATILITY	4.7%	16.5%	19.6%	6.2%
SHARPE RATIO*	0.53	0.51	0.38	0.74

Sources: Bloomberg LP, NCREIF, Affinius Capital Research; based on 30-year time period

DIVERSIFICATION

The US is well positioned for sustained growth over the next decade, particularly as compared to parts of Europe and Asia that are faced with shrinking populations. The working age population (15–64) has been declining in Japan for some time, started to go negative in Europe beginning in 2011, and began to go negative in China in 2019. But in the US, growth in the working age population remains positive.[9]

The US one of the most transparent developed markets globally, supported by a strong and deep private service sector market and coupled with leading academic institutions that all underpin reliable pricing and real-time information for global allocators. Powerful diversification benefits can be achieved by spreading investments across different regions and markets.

Despite the significant home bias within existing real estate portfolios, the US remains in focus for out-of-region capital deployments. Any investor needs to decide about the merits of a US real estate allocation given their own portfolio composition and objectives.

But now, more than ever, one would do well not to ignore the positives. Given the relative liquidity and political stability, we believe the US will continue to attract foreign investors. The US economy is not immune from potential headwinds, but post-election there is a renewed confidence from businesses about the lower-tax, deregulatory, pro-growth mantra of the new administration that could help stimulate economic growth over the next several years. Given these factors, and amidst the uncertainty in global markets, one would do well not to ignore the positives for the US as a compelling investment opportunity at this moment in time.

The US economy is not immune from potential headwinds, but post-election there is a renewed confidence from businesses about the lower-tax, deregulatory, pro-growth mantra of the new administration that could help stimulate economic growth over the next several years.

ABOUT THE AUTHORS

Karen Martinus is Senior Vice President, Research & Investments; Mark Fitzgerald, CFA, CAIA is Executive Director, Head of North American Research; Max von Below is Managing Director, Global Investors Group for Affinius Capital.

NOTES

[1] MSCI Real Assets. Data as of October 22, 2024

[2] Green Street as of January 2025

[3] Oxford Economics. Key Themes 2025: Global resilience gives way to uncertainty. November 13, 2024

[4] Oxford Economics. What Trump 2.0 means for the global economy. November 6, 2024

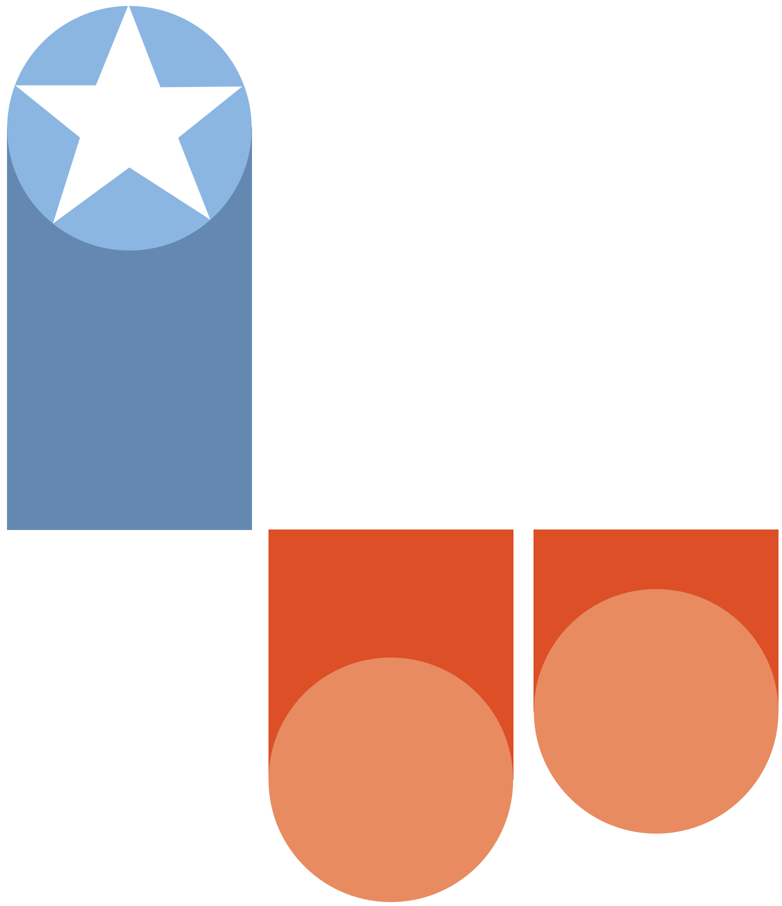
[5] https://www.policyuncertainty.com/

[6] PREA, 2024 Investment Intentions Survey

[7] CBRE, US Industrial Figures Q3 2024

[8] HSBC, China e-commerce, 12 March 2024

[9] Our World in Data, November 2024



The US is well positioned for sustained growth over the next decade, particularly as compared to parts of Europe and Asia that are faced with shrinking populations.

OPEN WINDOW

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THE WINDOW TO INVEST AT CYCLICAL LOWS MAY BE SHORT AS VALUES START TO RECOVER

The current environment offers unique entry points that should not be overlooked due to negative sentiment. Investors who continue to be active in markets with steady demand, growth drivers and supply limitations will be rewarded over the next real estate market cycle.

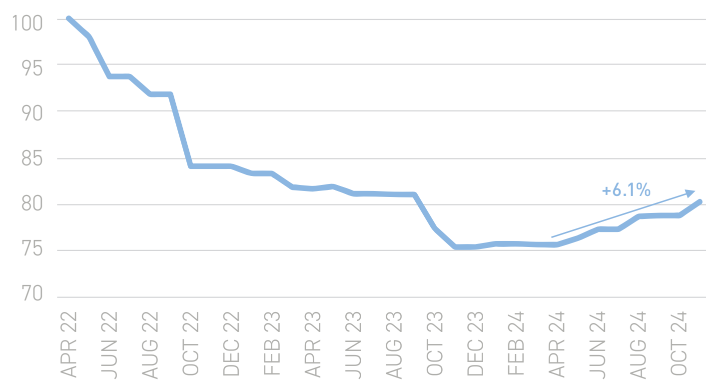
Commercial real estate (CRE) has faced significant challenges over the past two years. Rising interest rates, recession fears, and the mistaken impression that office market contagion would spread to other sectors have weighed on the asset class, pushing values down by 24.7% from their 2022 peaks.[1]

However, those concerns now appear overblown—and the challenging capital market conditions that once eroded property values are easing. Interest rates are well below recent peaks. Debt is becoming cheaper and easier to secure. And transaction volumes are up by 25% from their Q4 2023 trough.[2]

With most, if not all, of the asset class's primary return drivers on the upswing, CRE prices have turned the corner, and are likely to accelerate sharply in the coming quarters. Transaction market pricing, which was roughly flat earlier in 2024, is increasing again and went up by 6.1% over the past seven months *(Exhibit 1)*. In our view, this shift marks the start of a generational buying opportunity for CRE, which is still pricing at a steep discount to previous peaks but continues to benefit from healthy property cash flow growth.

TRANSACTION PRICING IS STARTING TO RISE

EXHIBIT 1: COMMERCIAL PROPERTY PRICE APPRECIATION INDEX FOR CORE SECTORS*



Source: Green Street; JPMAM; as of Nov. 30, 2024. Based on the Green Street CPPI.
*Based on the Green Street Commercial Property Price Index

How can we be so confident? Here, we analyze the fundamentals that will drive future performance, including lower interest rates, cheaper financing, improving liquidity, elevated occupancy, persistent cash flow growth and improving capital market conditions.

After embarking on the most aggressive rate increases since the early '80s, the Federal Reserve (Fed) has pivoted and is now easing policy rates. The first rate cut, a larger-than-expected 50 basis points (bps) reduction, came in September, with two additional 25bps cuts coming in November and December.

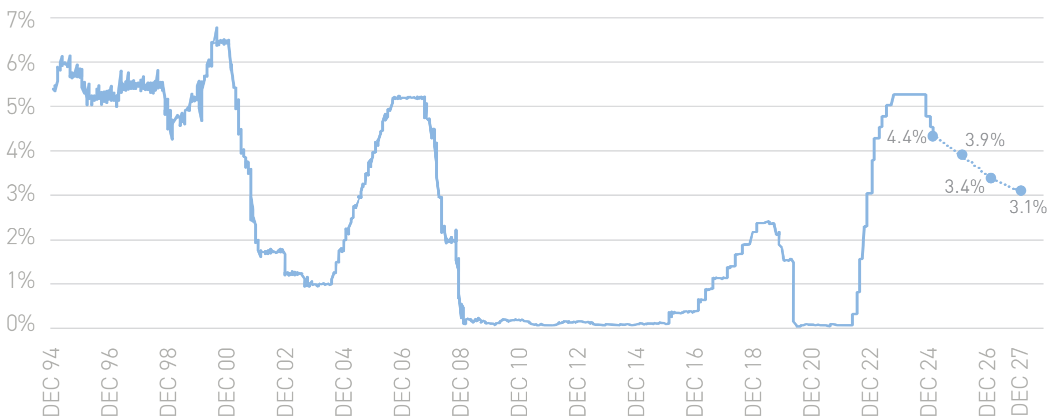
Forecasts of future cuts vary, but the Fed's internal predictions imply that rates may fall by more than 220bps from September's peak in the coming years.

INTEREST RATES ARE NO LONGER A HEADWIND

However, regardless of the direction and magnitude of interest rate movements, we believe that healthy fundamentals and improving capital markets sentiment should help real estate markets recover much of the value lost since prices peaked in the second quarter of 2022.[3]

THE FED HAS SIGNALED THAT SIGNIFICANT RATE CUTS MAY CONTINUE THROUGH 2027

EXHIBIT 2: HISTORICAL FED FUNDS RATES AND FUTURE RATE PROJECTIONS



Source: Federal Reserve; as of Sept. 18, 2024

PERSISTENT DEMAND HELPS KEEP OCCUPANCY ELEVATED

Despite recent headwinds, CRE's underlying fundamentals remain strong. While some office assets continue to face challenges, occupancy rates across CRE remain higher than their pandemic lows, and overall occupancy is now 246bps above its long-term average.[4]

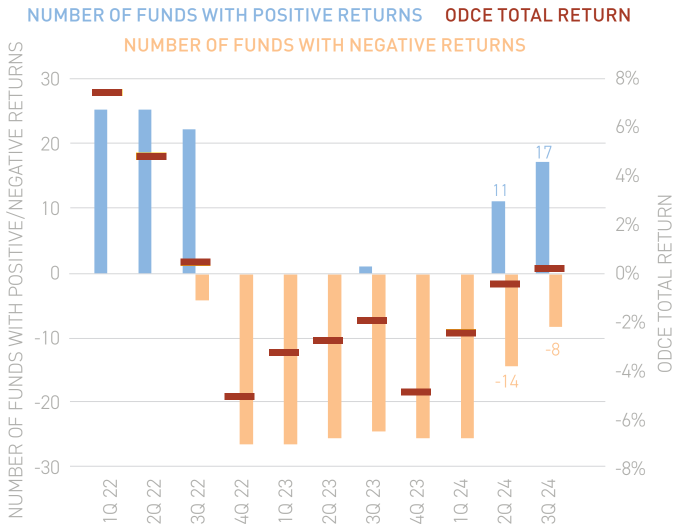
Demand is also growing. As of Q3 2024, tenants were filling more space and net absorption was positive across nearly all the major commercial real estate sectors.[5] This strong backdrop has kept net operating income (NOI) rising and, unlike previous downturns in which property cash flows fell, NOI is 6.1% above where it was when pricing peaked in the second quarter of 2022.[6]

Additionally, supply trends are improving with construction starts down between 71% and 92%, depending on the sector.[7] This will reduce deliveries of newly built properties in the coming quarters, setting up a more favorable supply/demand dynamic for owners. The improving environment should allow the industry to build on positive trends, making the short- and mid-term outlooks for property performance even better.

Demand is also growing. As of Q3 2024, tenants were filling more space and net absorption was positive across nearly all the major commercial real estate sectors.

FUND TOTAL RETURNS TURN POSITIVE

EXHIBIT 3: TOTAL RETURNS AND NUMBER OF FUNDS WITH POSITIVE RETURNS



Source: NCREIF; as of Sept. 30, 2024

REAL ESTATE PRICING TRENDS ARE TURNING MORE FAVORABLE IN ALL CORNERS OF THE MARKET

The public REIT market, which has already risen by nearly 43% from its earlier trough, was the first to reflect this brightening outlook.[8] It then spread to transaction markets. Real estate fund values, which lagged behind REIT and transaction pricing, are now also hitting an inflection point: As of the third quarter, more than two thirds of the reporting funds posted positive returns, and overall index performance was positive for the first time since 2022 *(Exhibit 3)*.

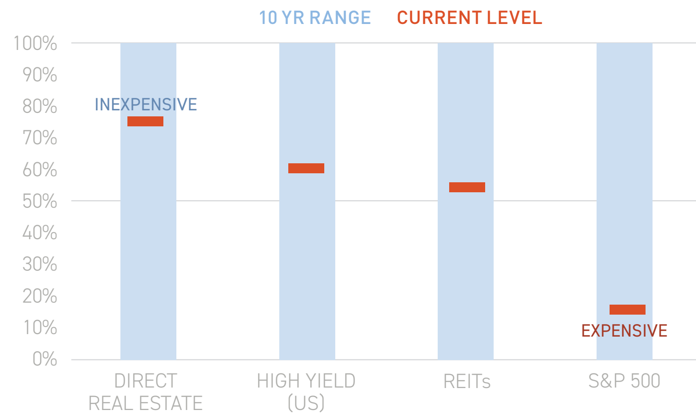
CRE PRICING COMPARES FAVORABLY TO OTHER ASSET CLASSES

This has set up a unique (and favorable) dynamic in which private real estate values look particularly attractive compared to other asset classes. Unlike stocks and bonds, which have already experienced significant gains, real estate prices are still at or near cyclical lows. The US stock market has climbed roughly 75% since its pre-pandemic peak, lifting the price-to-earnings ratio of the S&P 500 close to some of the highest levels of the past decade.[9] Meanwhile, private real estate values are about as low as they have been during this same period *(Exhibit 4)*.

Although the difference is not as stark, the story is similar for fixed income assets. Bond yields imply less upside potential compared to CRE cap rates and—after also accounting for the appreciation component of CRE—spreads between expected CRE returns and high yield bond yields are well above long-term averages *(Exhibit 5)*. This represents one of the most attractive entry points for private real estate in the past twenty years.

CRE OFFERS FAVORABLE VALUATION RELATIVE TO OTHER ASSET CLASSES

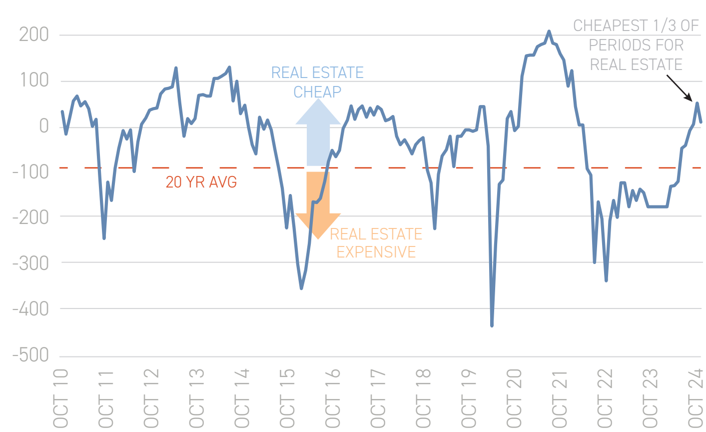
EXHIBIT 4: RELATIVE VALUE COMPARISONS OF CRE VS. STOCKS AND BONDS (PAST 10 YEARS)



Source: Factset, Bloomberg, Green Street Advisors as of 10/31/24.Valuation metrics used: Cap rates for direct real estate, implied cap rates for REITs, yield to worst for bonds and price to earnings ratio for the S&P 500.

CRE INTERNAL RATES OF RETURN (IRRS) IMPLY GREATER POTENTIAL UPSIDE RELATIVE TO HIGH YIELD BONDS

EXHIBIT 5: UNLEVERAGED CRE IRR SPREAD TO HIGH YIELD BOND YIELD TO MATURITY

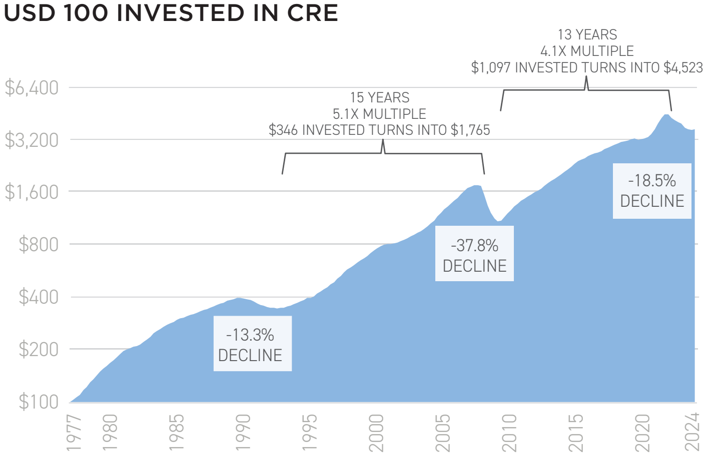


Source: Green Street; as of Oct. 31, 2024

Historically, CRE has proven resilient over time, and—given the current market landscape—it is not unreasonable for investors to expect strong gains from the asset class in the years ahead. Thanks to a sizeable and stable income component, total returns for CRE stayed positive through the bursting of the dot-com bubble in the early 2000s and only saw one quarter of modest decline during the COVID pandemic *(Exhibit 6)*. This resiliency has not only delivered extended periods of consistent growth but has also helped diversify investors' stock and bond portfolios, which can be more cyclical.

CRE MAY HELP PROVIDE PERSISTENT AND DURABLE RETURNS ACROSS MARKET CYCLES

EXHIBIT 6: HISTORICAL GROWTH OF USD 100 INVESTED IN CRE



Source: NCREIF ODCE; JPMAM; as of Sept. 30, 2024

TIME MAY BE RUNNING OUT TO BUY INTO CRE AT CYCLICAL LOWS

However, investment timing does matter. As market transparency increases, CRE cycles appear to be intensifying and returns becoming more front-loaded. Given strong economic growth, the healthy fundamentals we see in CRE, the expectation of additional rate cuts by the Fed in the coming quarters and the sharp uptick in REIT pricing this year, private real estate values may be poised to follow a similar path.

With investor sentiment improving and leading indicators already rising, the window to invest at cyclical lows may be short. This means first movers are the most likely to benefit from what we believe could be a surge in pricing.

The current environment offers unique entry points that should not be overlooked due to negative sentiment. Investors who continue to be active in markets with steady demand, growth drivers and supply limitations will be rewarded over the next real estate market cycle.

ABOUT THE AUTHORS

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NOTES

[1] National Council of Real Estate Investment Fiduciaries (NCREIF). Market calculations based NCREIF – Open End Diversified Core Equity (ODCE) Fund Index; data as of September 30, 2024.

[2] MSCI Real Capital Analytics, rolling 3-month transaction volume (seasonally adjusted) as of September 30, 2024.

[3] NCREIF, ODCE Fund Index; data as of September 30, 2024.

[4] Ibid.

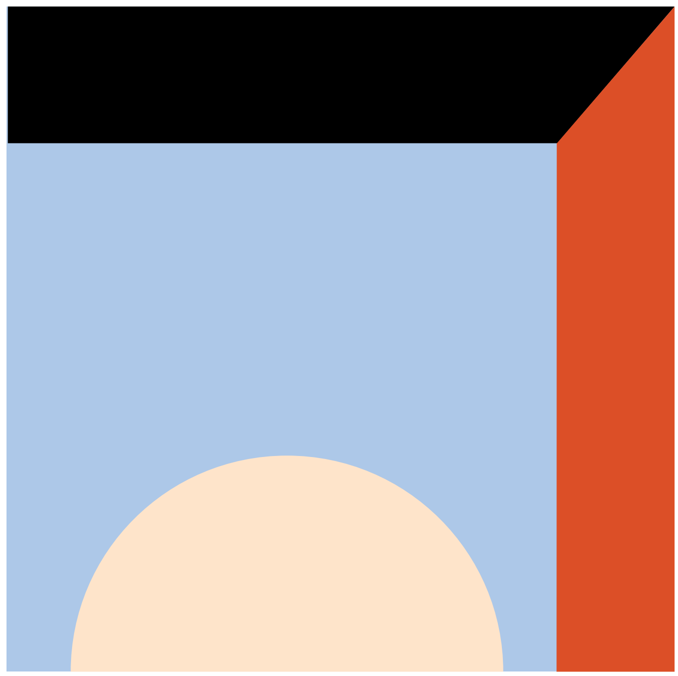
[5] CoStar, "Net Absorption for Office, Multifamily, Industrial and Retail," data as of September 30, 2024.

[6] NCREIF, ODCE Fund Index; data as of September 30, 2024.

[7] CoStar, "Construction Starts for Office, Multifamily, Industrial and Retail," data as of September 30, 2024.

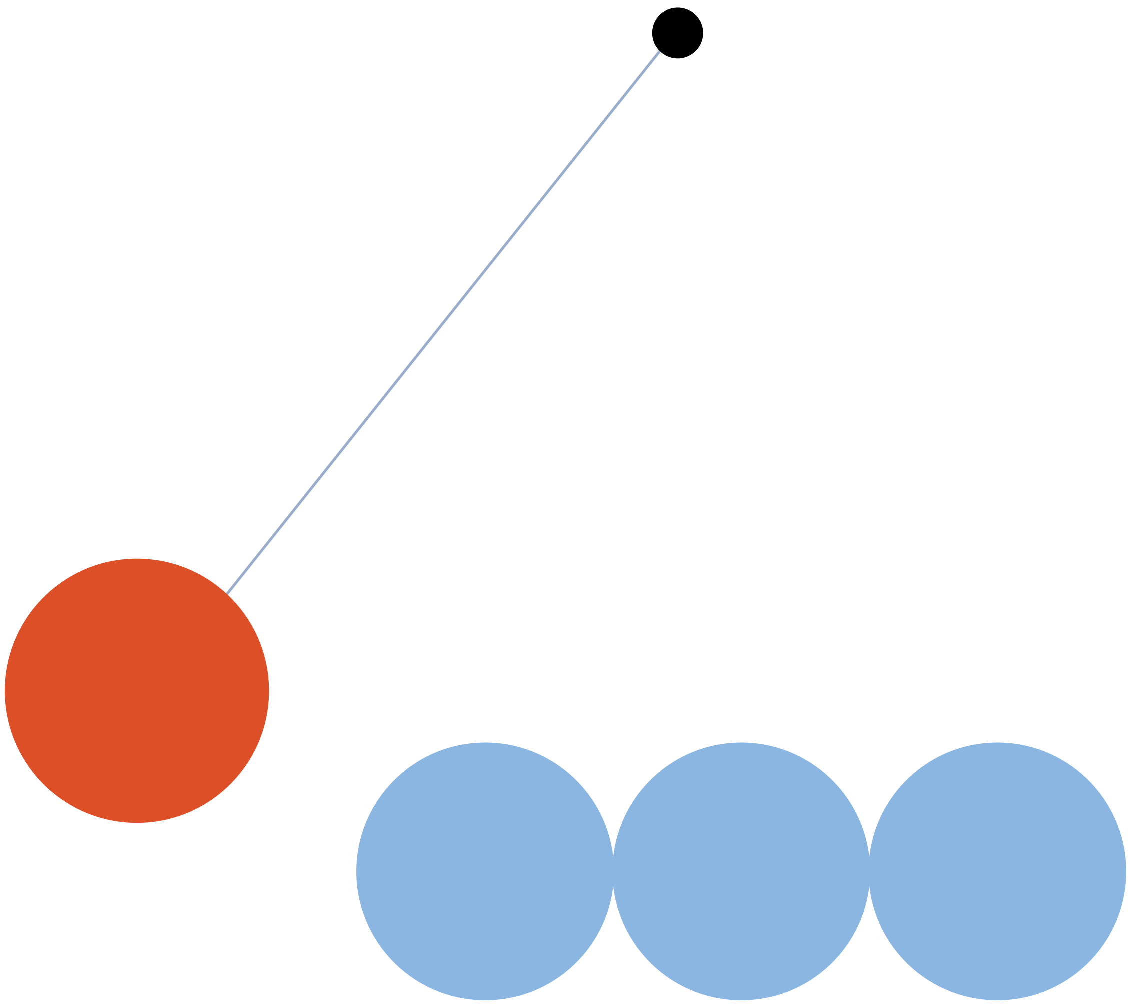
[8] NAREIT; Equity REIT Index total return, data as of November 30, 2024.

[9] Bloomberg, FactSet, Standard & Poor's; data as of November 30, 2024.



Investors who continue to be active in markets with steady demand, growth drivers and supply limitations will be rewarded over the next real estate market cycle.

NORMALIZING MOVEMENT



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COVID-19 was a demographic shock with dissipating effect. Disparities remain, but the direction of change is toward narrowing the gap between metros with declining population and those with fast-growing population.

Investors in commercial real estate are forecasters by necessity. Whether collecting and personally constructing discounted cash flows, managing others who do so, or signing off on buys and sells, we are all forecasters.

Our forecasting requires making assumptions about rent, occupancy, expenses, and borrowing rates. The foundation for these assumptions is the current and expected dynamics of the national economy and of the specific property location, its surrounding submarket, and larger metro area market. Commonly, historical data and forecasts are purchased from one or more vendors and judgement is applied to how they are used in property buy-sell analysis.

Making such judgements has been especially fraught in recent years. The COVID-19 pandemic and its aftermath distorted every factor affecting property performance. Perhaps foremost, COVID-19 pushed the US economy into freefall in mid-2020 with real GDP plummeting at a 28% rate in Q2 2020 and the unemployment rate exploding from 3.8% to 13%.[1]

Policymakers responded quickly and aggressively; the federal funds rate was cut to essentially zero by April 2020 and the March CARES Act sent support payments to individuals and families. Further federal aid was implemented in 2021 as the COVID-19 vaccine subdued the pandemic. The COVID-19 disruption along with the beginning of the war in Ukraine accelerated inflation and prompted the Federal Reserve to tighten interest rates by 525 basis points beginning in 2022.[2] The rate increases fed fear of a hard landing recession which persisted into 2023.

Through this period, property investors pulled back and transactions dropped precipitously as COVID-19 recession risk was followed by "hard landing" fears. Property analysis was difficult through this period, resulting in widening in bid-ask spreads as buyer and seller views disconnected. More recently, the resilience of the economy in the face of high interest rates has quelled hard landing fears and a modest soft-landing growth path is now widely expected.

The intense scrutiny of macro-economists and their soft-landing consensus are forging more agreement among forecasters, but COVID-related distortions linger. Uncertainty related to work-from-home, online shopping, the search for affordable housing, and similar trends are well-covered by real estate analysts. But less attention has been devoted to what might be the most important uncertainty now at play: the geography and magnitude of US population growth.

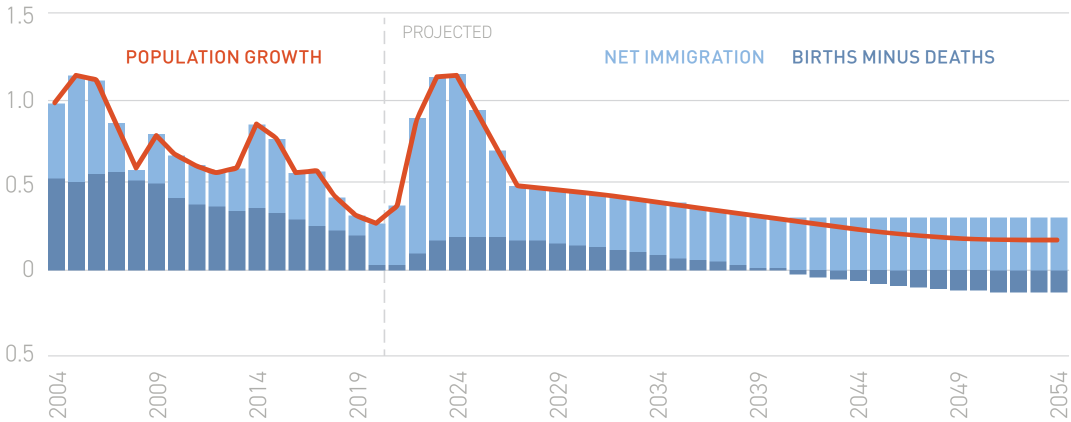
DEMOGRAPHICS DRIVES ECONOMIC GROWTH

Population growth is a fundamental driver of demand for almost all types of real estate. Even more fundamental is the link between population growth and economic growth. Population growth fuels labor force growth which combines with productivity to generate growth in GDP.

The 1.8% long-term GDP growth reported in the Federal Reserve's Economic Projections assumes enough labor force growth to support long-term unemployment at 4.2% with inflation averaging 2%.[3] The Congressional Budget Office (CBO) is also projecting a 1.8% long-term GDP growth rate with similar 2% inflation prospects.

CBO's report specifies a 0.4% population growth rate to support these projections, a rate only slightly less than the 0.5% increases posted in 2018 and 2019. As shown in *Exhibit 1*, the "natural rate" of population growth produced by births exceeding deaths has been shrinking due largely to a declining fertility rate. The cultural forces behind delayed marriage and fewer (if any) children are well-established and unlikely to change in the years covered in the CBO forecast. This leaves US population growth largely dependent on the flow of immigrants.

EXHIBIT 1: DEMOGRAPHIC FACTORS THAT CONTRIBUTE TO POPULATION GROWTH



Source: Congressional Budget Office; The Demographic Outlook: 2024-2054, January 2024.

Therein lies enormous uncertainty. Immigration is affected by conditions in the countries that immigrants leave. Political and civil unrest as well as limited economic opportunities encourage residents to seek better lives elsewhere. Perceived opportunity in the US encourages them to come here. US immigration regulations are complications leaving some to immigrate illegally. (The COVID-19 pandemic disrupted immigration flows as shown in the sharp 2020 decline in *Exhibit 1*).

The "natural rate" of population growth produced by births exceeding deaths has been shrinking due largely to a declining fertility rate.

VERY WIDE RANGE OF POPULATION CHANGES ACROSS METROS

Meanwhile, population growth rates vary widely across US metro areas. Varying flows of immigrants are one source of the differences along with the varying flows of domestic population. Age composition matters as well in that metros with concentrations of old people or young people will have differences in their natural rate of population growth.

Metro area population growth directly fuels demand for housing and retail space. It provides the workforce that supports demand for office and industrial space. It accumulates the stuff that goes into self-storage. It is the invisible assumption embedded in property discounted cash flows.

Investors need to pay special attention now to the invisible metro area population growth assumptions because the COVID disruption has made recent history deceptive.

For example, the 2020 Census, conducted in April 2020, was the last full count of population. The Census is conducted every ten years; updates are produced annually using samples of population designed to represent the whole. A reasonable approach for forecasting metro area population in the immediate years ahead would focus on the 2020 Census and updates through 2023.

For the fifty-six large liquid metros of over one million in population that are commonly targeted by institutional real estate investors, the most recent data for 2020-23 shows average population growth of 1.13%. The range is enormous, from 7.5% for the Austin metro to -4.3% for the New Orleans metro. Before pushing this historical performance forward in a forecast, some further analysis is obviously required.

Of course, COVID played a part in the 2020-23 results. Anecdotal reports point to the work-from-home protocols that COVID necessitated and the opportunity for individuals to relocate to cheaper locations that work-from-home afforded. The data support this contention, but only weakly; of the nineteen metros that lost population between 2020 and 2023, only nine are identified by Green Street as having "very expensive or expensive" housing. Moreover, the 2020-2023 history is a less-than-ideal basis for forecasting now that the COVID-19 pandemic is over and employers are pulling staff back to the office.

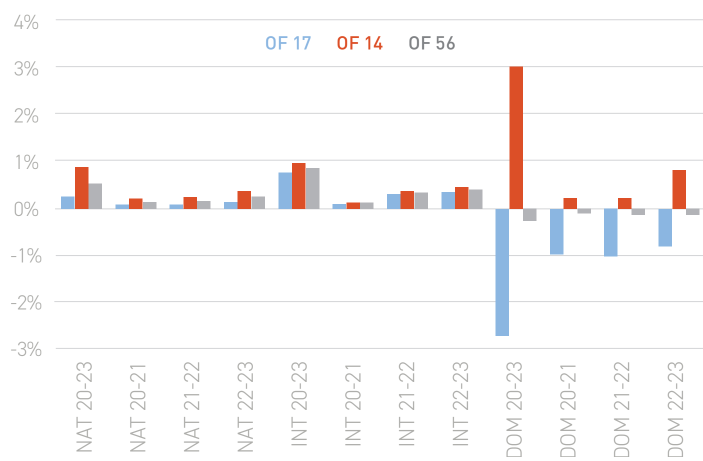
Further insights are available from the annual data within the 2020-2023 time period. The weakest average population growth for the fifty-six metros occurred between 2020 and 2021 at 0.2% for the year. The average strengthened to 0.4% in the following year and then levelled to 0.5% in the 2022-2023 reading. Twenty-one metros lost population over 2020-2021, twenty-four in the following year, and seventeen in 2022-23.[4] Will those seventeen shrink perpetually? Similarly, will the fourteen metros that enjoyed the strongest population growth of 1% and better in 2022-23 continue to boom? These are questions that real estate forecasters and investors are well advised to address.

The US population growth is largely dependent on the flow of immigrants.

COMPONENTS OF POPULATION CHANGE SHOW NARROWING OF DISPARITIES

To address these questions, more detailed information is available in the components of metro area population change. The components include the natural rate of population growth from births net of deaths, net inflows from elsewhere in the US shown as domestic ("dom" in *Exhibit 2),* and net inflows from outside the US shown in the chart as "int." COVID-19 affected all three components.

EXHIBIT 2: METRO POPULATION CHANGE COMPONENTS



Source: US Census, CBSA-EST2023-ALLDATA

For the seventeen metros that suffered population shrinkage in 2022-23, the pace of decline was much reduced compared with the two prior years. The improvement was due to a pickup in immigration combined with a reduction in the rate of domestic move-outs.

For the fourteen metros with strong 2022-23 population growth, the pace of growth was slower than the 2021-22 rate but still above the 2020-21 pace.[5] For these metros, immigration strengthened in 2022-23 but the pace of domestic move-ins declined. The natural rate of increase improved in 2022-23 for both groups of metros.

These metrics show that COVID-19's impact on population movements was easing in 2022-2023. But the data show that the shrinking metros continued to suffer domestic move-outs, albeit at a reduced pace, and the strong metros continued to grow faster. Is this likely to continue? Forecasters need to weigh the data and construct assumptions regarding future movements. In doing so, they will need to weigh the relative attractiveness of employment opportunities along with relative housing affordability.

In some of the shrinking metros, employment related to the AI boom is growing driven by the availability of tech talent and the tech sector more generally appears to be stabilizing after its restructuring. Housing is still relatively more expensive but comparatively less so in the metros that built gluts of high-quality apartments.

In the stronger metros, employment opportunities derived from work-from-home are diminishing. Housing prices and rents have risen strongly. Both are forces of convergence. It also bears stressing that judgements regarding these forces should be devised for each individual metro area separately.

The path ahead will also depend on the pace of immigration overall as well as the inflows of immigrants to each metro area. The importance of immigration is evident in both groups of metros. In 2020-21 the pace of immigration dropped sharply in response to COVID restrictions and fears. The subsequent two years saw revived immigration flows that were stronger than the natural rates of population increase in both groups of metros and for the average of all the large million-plus metros.

Looking ahead, appetite for opportunity and security in the US is showing no sign of diminishing. Global political upheavals and climate disasters feed this appetite and are unlikely to diminish. Immigration is a hot political issue in the US and unpredictable policy choices will have an impact on the flow of immigrants in the years ahead.

Metro area population changes in the years ahead will also be affected by the geographic pattern of climate change along with the impact of climate change on housing costs and employment growth. Property hazard insurance costs and availability are already showing widening disparities across locations as storm and fire events become more frequent.

Property investors who ignore these risks may be left with stranded assets if others act more expeditiously. LGIM researchers are focusing on these questions (See appendix).

Population movements are a critical and often under-appreciated driver of potential relative real estate returns.

RETURNING TO NORMALITY

Examination of the components of metro area population changes shows that the drivers of change were converging across metros in 2022-2023. This suggests that COVID-19 was a demographic shock with dissipating effect. Disparities remain but the direction of change is toward narrowing the gap between metros with declining population and those with fast growing population.

Forecasters are left to make judgements about where and when an eventual equilibrium will occur, but this analysis should leave us wary of making simplistic assumptions on population changes, the domestic and international migration that drives them and the impact on metro area economic vitality.

The pandemic and the associated acceleration in working from home benefited Sunbelt markets at the expense of coastal Gateways. However, this trend is normalizing.

DEMOGRAPHIC DETAIL: HOW CLIMATE AND THE PANDEMIC ARE IMPACTING US REAL ESTATE

Population movements are a critical and often under-appreciated driver of potential relative real estate returns

The pandemic and the associated acceleration in working from home benefited Sunbelt markets at the expense of coastal Gateways. However, this trend is normalizing.[6] And While the near-term prospects for employment growth in Sunbelt markets remain strong, over the longer term we expect this relative strength to moderate, with climate risk an increasingly important factor.

Recent extreme weather events are a stark reminder of the potential physical impacts of climate change, but of equal importance are the chronic physical climate risks that negatively impact the liveability of certain markets. These could hurt the long-term attractiveness of some Sunbelt markets, and provide potential upside for a few more resilient non-Sunbelt markets, necessitating more nuance around location selection for long-term investors, with implications for cap rates.

Real estate and infrastructure assets in higher climate risk areas will increasingly have to contend with the additional capex required for adaptation, the loss of revenues from operational disruptions and higher insurance premiums.

Heightened climate-associated risks and costs could exacerbate existing supply constraints in residential markets. Extending the useful life of existing supply, through retrofitting and decarbonisation strategies, will be increasingly important in addressing local supply and demand imbalances, in our view.

1. POPULATION FLOWS POST-PANDEMIC: WHAT HAS HAPPENED AND WHY?

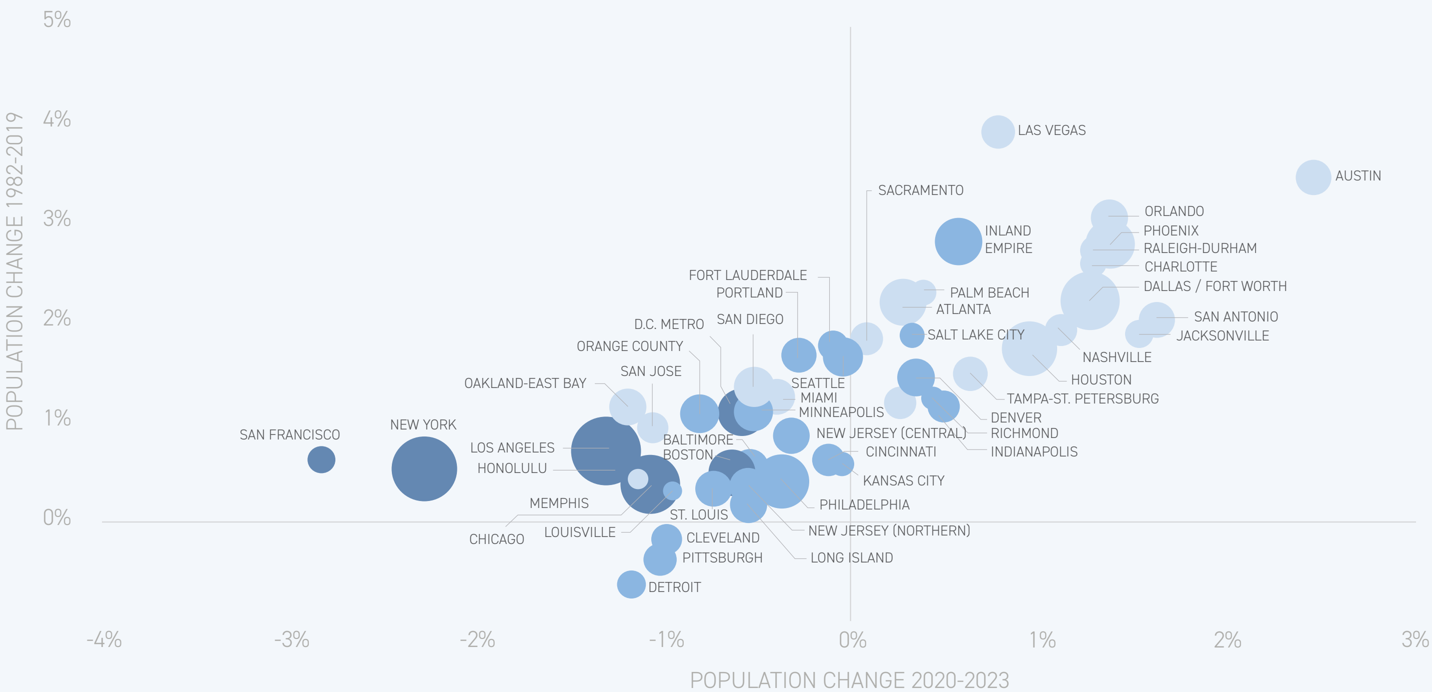
Population growth is a fundamental driver of demand for almost all types of real estate. Growth across US metro areas has varied widely in recent years; for the fifty-six large, liquid metros with a population of over one million that are commonly targeted by institutional real estate investors, the most recent data, for 2020-2023, shows average population growth of 1.1%.[7] The range is enormous, from 7.5% for the Austin metro to -4.3% for the New Orleans metro (see chart below). We believe the longevity of these trends, and future long-term drivers of population flows, will be key to real estate performance.

The pandemic period (2020–22) was characterised by an acceleration of the long-standing trend of stronger population flows towards Sunbelt markets. This was predominantly driven by two factors:

1. Increased working from home untethering people and businesses from city life
2. Cost of living concerns, with expensive coastal markets most severely impacted

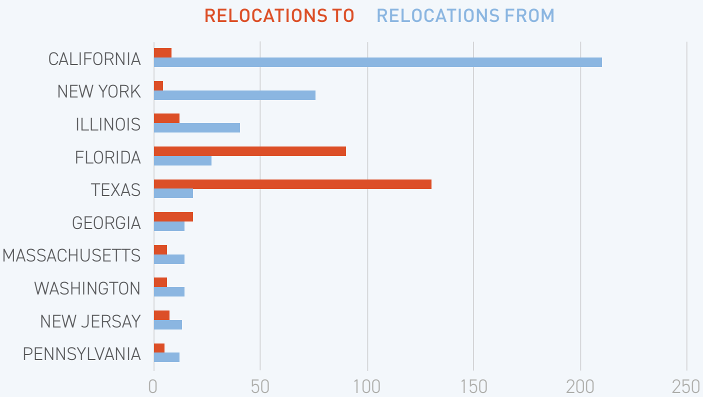
Businesses have also followed this trend, with growing numbers of companies relocating to Sunbelt markets, attracted by easier tax and regulatory regimes, as well as appropriately skilled labour forces.

APPENDIX A: WORKING AGE POPULATION CHANGE ACROSS TOP 50 US REAL ESTATE MARKETS



Source: Green Street, US Census. 2024. Bubbles weighted by 2023 population.

APPENDIX B: COMPANY RELOCATIONS

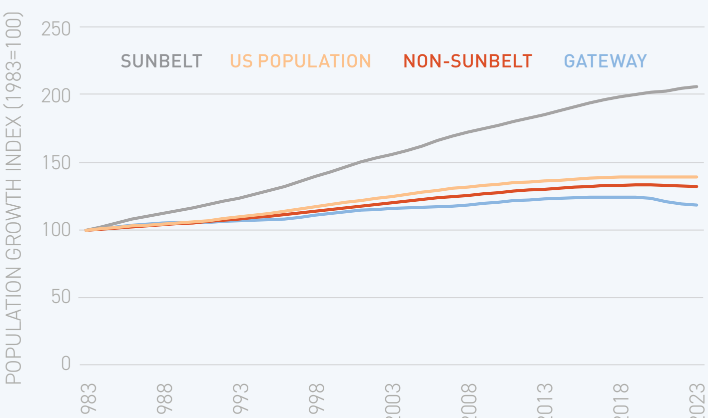


Source: fDi Markets, Financial Times. 2024

This trend is partially normalizing. While Sunbelt markets continue to see population growth, this has reverted to levels closer to the pre-pandemic trend *(Appendix C)*. While non-Sunbelt markets are still seeing working-age population declines, these have slowed notably, with the likes of Washington and Massachusetts witnessing a return to positive population growth.

Normalising population data suggests that COVID was a demographic shock with a dissipating effect. Despite a challenging pandemic period, we believe Gateway markets should not be discounted, with these continuing to attract high volumes of inward domestic migration from younger demographics (i.e., 18-35 year-olds) and international migrants over the 2010-23 period (United States Census Bureau, 2024). While immigration remains a highly sensitive political topic, an ageing US population means it is likely to be an increasingly critical driver of future population—and employment—growth.

APPENDIX C: WORKING AGE POPULATION CHANGE BY MARKET TYPE



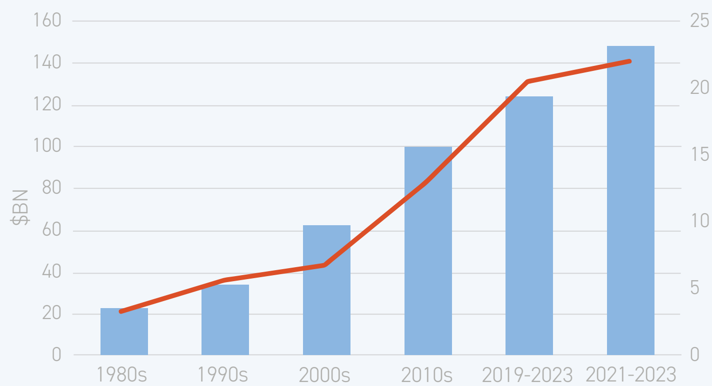
Source: Green Street. 2024.

2. LONGER-TERM DRIVERS OF POPULATION FLOWS: RESPONDING TO GROWING CLIMATE RISKS

The importance of climate in influencing population flows across the US is not new; since the 1960s, growing numbers of the US populace have been moving away from the cooler Northeast and Midwest to warmer areas.

However, more extreme weather events and the hotter climate are posing a risk to this long-standing trend. The frequency, costs and human impact of extreme weather events are growing *(Appendix D)*, with the Californian wildfires, Hurricane Milton and Hurricane Helene providing stark recent examples.

APPENDIX D: EXTREME CLIMATE EVENTS: DAMAGE COST AND FREQUENCY



Source: NOAA, 2024.

Weather events and more chronic climate risks, such as extreme heat days and increasing water scarcity, are impacting the liveability of higher-risk locations, and there is emerging evidence of a consequential effect on population flows. Leduc and Wilson (2024) analyzed the relationship between population growth, extreme heat days and extreme cold days at a county level. They found that over the past five decades, the historically positive relationship between population growth and the number of extreme heat days, and the historically negative relationship with extreme cold days,[8] had weakened, and according to some measures, even reversed.

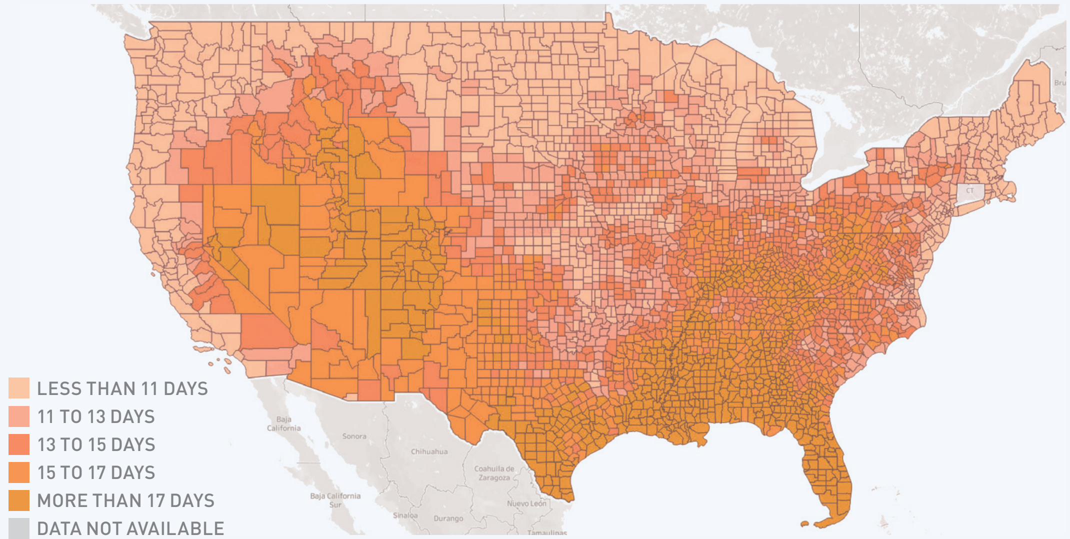
If this moderating trend persists, it could present a risk to the long-established positive migration story for the Sunbelt, requiring a more granular and selective approach when targeting real estate markets within the region. Conversely, more resilient Gateway markets may benefit from renewed population inflows in response.

3. CLIMATE AND INSURANCE: AN INCREASINGLY MATERIAL IMPACT ON CASHFLOWS

Climate is having a more immediate impact on real estate returns through insurance. Rising climate-related insurance claims are leading to increased costs and reduced availability in higher-risk areas. Keys and Mulder[9] (2024) observed a 33% increase in average premiums for homeowners between 2020-23 (13% in real terms), with "a one standard-deviation increase in disaster risk associated with $500 higher premiums in 2023, up from $300 in 2018," indicating a causal relationship between climate risk and higher increases in insurance premiums. Meanwhile, Green Street (2024) noted that annual commercial property insurance premiums were up 11% p.a. over 2018-2023, versus 4% for wider real estate expenses.

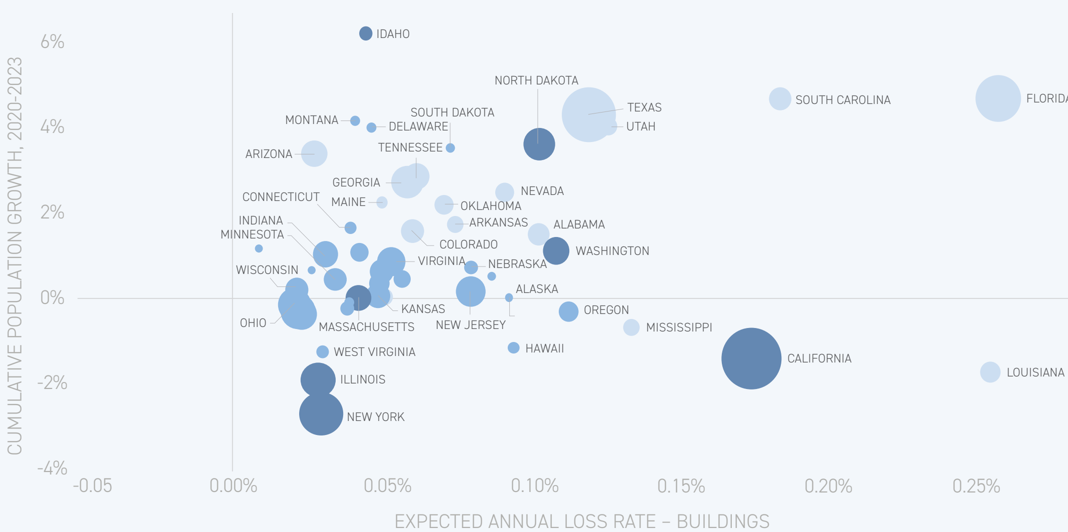
While insurance has historically represented a relatively negligible expense for commercial real estate investors, this is likely to become a more meaningful cost in higher-risk sub-markets. For example, Green Street estimates that home insurance costs in 2023 represented 9% of after-tax income in Miami, versus a national average of 3%.

APPENDIX E: EXTREME HEAT DAYS



Source: ©2024 Mapbox. ©OpenStreetMap

APPENDIX F: CLIMATE VALUE AT RISK VERSUS HISTORICAL POPULATION GROWTH



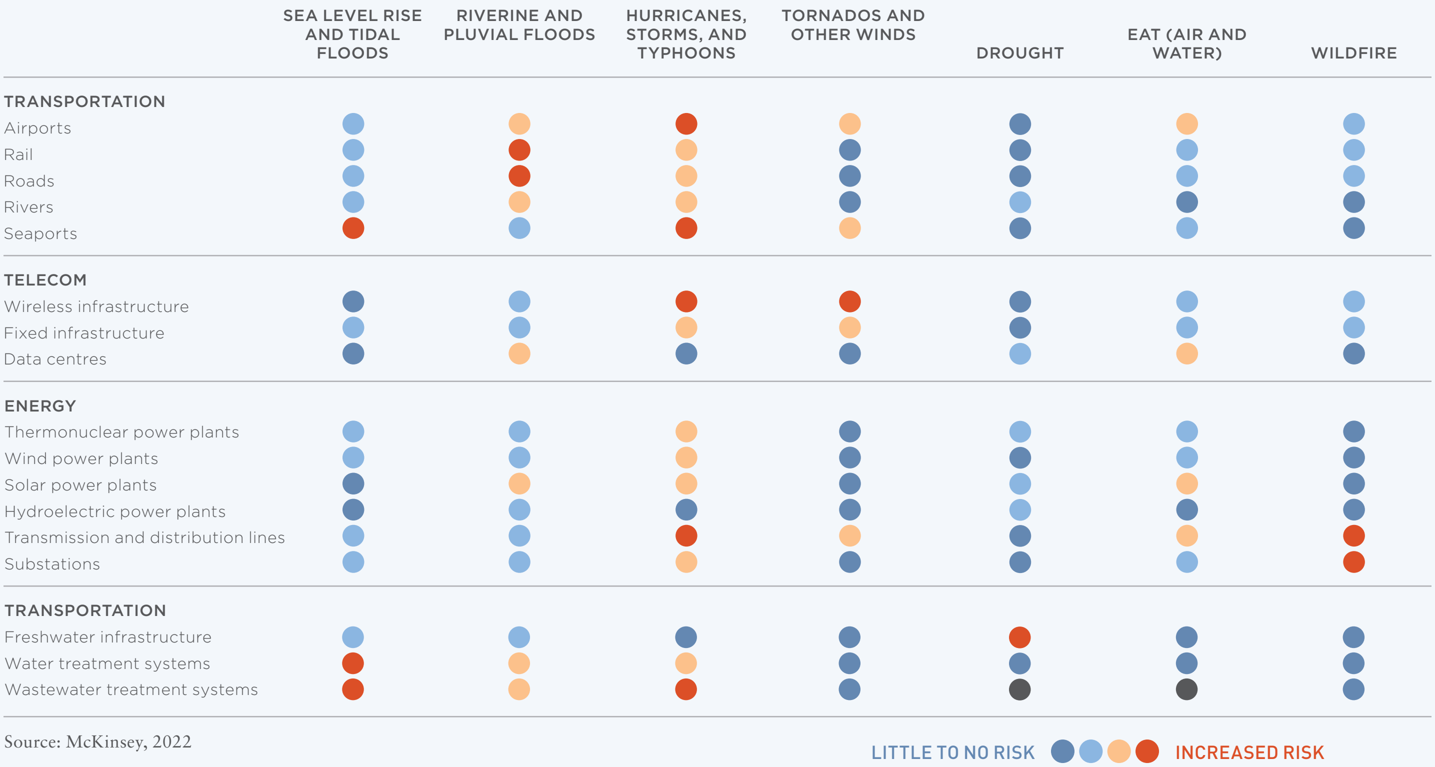
Source: FEMA, US census bureau. 2024.

Appendix F shows that climate event risks tend to be higher in some Sunbelt markets, many of which have seen significant recent population growth and strong real estate performance. In future, our view is that the region should not be viewed in a homogeneous way, necessitating more nuance around location selection for long-term investors.

4. CLIMATE RISKS AND IMPLICATIONS FOR INFRASTRUCTURE

Extreme weather is increasingly an operational risk for key infrastructure assets, such as power networks, airports and wind farms. Infrastructure typically involves considerable upfront investments in assets designed with useful lives of up to 100 years, with the design of these facilities usually assuming past climate patterns will continue. A changing climate, however, and the resulting extreme weather events mean that historical climate bands utilised in planning are becoming outdated, in our view, leaving infrastructure in many locations operating outside of its tolerance levels. McKinsey highlights the relative climate risk across infrastructure sectors in *Appendix G*, with transport, energy transmission, and water infrastructure screening as most at risk.

APPENDIX G: RELATIVE POTENTIAL FUTURE LOSSES FROM CLIMATE HAZARDS BY INFRASTRUCTURE SECTOR



Source: McKinsey, 2022

5. BUILDING RESILIENCE TO CLIMATE AND TRANSITION RISKS

We expect asset-level climate-risk analysis to become an increasingly important component of portfolio management and stock selection in the future, with higher-risk locations becoming more vulnerable to changing occupier demand, increased operating costs and reduced liquidity at exit. Robust assessments of climate risks require granular, building-level assessments alongside an appreciation of wider interdependent risks, such as neighbourhood-level infrastructure vulnerabilities.

We believe any consideration of future portfolio resilience increasingly needs to consider net-zero transition risks. The built environment is a significant contributor to global carbon emissions, and, while the stringency of decarbonisation legislation varies significantly by state, over the long term we expect the sector to be subject to increasing scrutiny from regulators and wider stakeholders. We believe a proactive approach to mitigating environmental risks is prudent and expect real assets with greater transition and climate exposure to be negatively affected, leaving uncompliant assets with reduced liquidity.

We also expect a proactive approach to confer some early mover advantages and upside potential in rental outcomes in more supply-constrained markets. We believe heightened climate risk and increased insurance and adaptation costs will exacerbate existing constraints in residential supply, particularly in a number of larger Gateway markets. This requires, in our view, a focus on retrofitting existing stock, thereby extending the useful life of the buildings, reducing their energy and fossil fuel consumption and ongoing repair and maintenance costs.

A proactive approach to mitigating environmental risks is prudent and expect real assets with greater transition and climate exposure to be negatively affected, leaving uncompliant assets with reduced liquidity.

OUR VIEW

As climate-related disruption becomes more frequent, we believe both real estate and infrastructure investors will increasingly have to contend with the additional capex required for adaptation, loss of revenues from operational disruptions and higher insurance premiums. We have seen early signs of elevated climate risk translating into higher costs for assets located in particularly vulnerable locations and expect this to become a more prominent trend as climate risks intensify.

In our view, investors will have to:

- Increase the depth and granularity of climate risk due diligence at an asset level, considering future climate scenarios
- Regularly review portfolio climate resilience assessments under various climate-change scenarios
- Review cashflow assumptions in terms of capex, operating costs, reletting risks and discount rates
- Consider emerging risks in fair value analysis
- Renew their emphasis on diversification, tilting away from areas of greater climate risk within their portfolios

ABOUT THE AUTHORS

Martha Peyton is a Research Consultant to LGIM America's Real Estate Equity team. In this role, she is responsible for US economic and property market research, which is a foundation for the team's investment strategy. In Legal & General's Private Markets investment strategy and research team, Matt is responsible for market research, influencing strategic operational initiatives and guiding investment strategy in the retail, leisure and hotel sectors, while also being responsible for research into key thematic areas, including transition risk, operational research and emerging alternatives sectors.

NOTES

[1] Bloomberg

[2] The Federal Reserve

[3] The Federal Reserve: Economic Projections. Data as of June 12, 2024.

[4] Seventeen metros with declining 2022-23 population: New Orleans, Los Angeles, Honolulu, Pittsburgh, New York, Buffalo, Rochester, San Francisco, Memphis, San Diego, Chicago, Detroit, St. Louis, Cleveland, Portland, Baltimore, San Jose.

[5] Fourteen metros with strongest 2022-23 population growth (1% or more): Phoenix, Tulsa, Atlanta, Oklahoma City, Nashville, Tampa, San Antonio, Charlotte, Houston, Dallas, Raleigh, Orlando, Austin-, Jacksonville, FL.

[6] Sunbelt markets categorized at state level as Alabama, Arizona, Arkansas, Colorado, Florida, Georgia, Kansas, Louisiana, Mississippi, Nevada, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas and Utah. California has been defined as a Gateway market.

[7] United States Census Bureau, July 2024.

[8] Leduc, Sylvain, and Daniel J. Wilson. 2024. "Snow Belt to Sun Belt Migration: End of an Era?" Federal Reserve Bank of San Francisco Working Paper 2024-21.

9 Keys, Benjamin and Mulder, Philip. 2024. "Property Insurance and Disaster Risk: New Evidence from Mortgage Escrow Data". National Bureau of Economic Research Working Paper 32579.

REVIEWER RESPONSE

After a lengthy introduction, the author reveals the thrust of the article: that population growth is the fundamental driver of demand and Covid-related distortions linger, impacting one's ability to comfortably forecast not only population growth, but also the related offshoots of economic growth, labor force growth, etc. There is meaty discourse on the variability of numbers and metro-level population changes that require detailed understanding of the composition of change. The article is not designed to draw the relationship between population change and occupier demand across property type, but it does leave the reader wondering how might different property types within cities / sub-markets be affected by different migratory patterns.

The side-bar article offers a different viewpoint on population changes and includes the impact of growing climate risks. The first point on population change from Covid is in part covered by the larger article, but the second point incorporates the very real impact of weather events, climates and water resources on migratory patterns. In my view, the most important part of the side-bar for the real estate practitioner is point three – the cost of climate and insurance on cash flows. It is this asymmetrical cap ex and difficult-to-forecast insurance cost that can have debilitating impacts to business plans. Point 4 is indeed an important consideration – what is the impact to of climate to infrastructure, but point 5 is the one that is important for all real estate crystal balls. How will the industry adapt in terms of investment and development to incorporate the "known-unknowns" of climate risk and related migratory changes.

Overall, the author deserves praise for getting back to basics in forecasting – the essential underpinning of any real estate cash flow – and for highlighting real challenges for the industry in the years to come.

– Thomas Brown
Partner,
LGT Capital Partners
Member, Summit Journal Editorial Board

CHRONIC SHORTAGE

Gleb Nechayev
Head of Research and Chief Economist
Berkshire Residential Investments

Housing affordability in the US is now near its lowest levels since the early 1980s. It was already a major challenge before the pandemic but has become more acute since then—and the problem is likely to persist for several years.

The housing affordability in the US is now near its lowest levels since the early 1980s. It was already a major challenge before the pandemic but has become more acute since then. Home prices grew by more than 50 percent over the last five years—twice as fast as household incomes and rents.

The key reason behind this is a severe national shortage of housing which is likely to persist for years.

One of the major implications of this imbalance is the continuing upward pressure on housing costs that will likely keep contributing to consumer price inflation (CPI) beyond the immediate horizon. Any viable long-term solution will require a combination of tax incentives and public-private partnerships at both the federal and local levels to significantly boost housing production and start closing this demand/supply gap. From the market fundamentals perspective, attainable housing will continue to present a broad spectrum of investment opportunities.

Estimates of the current US housing shortage vary from one to three million units for the base figures, to four to five million units when adjusting for quality of the underlying inventory (including obsolescence), to more than seven million units when further adjusting for the needs of low/middle-income households.[1]

While the range of estimates is very wide at the surface, a closer review of (1) what each estimate measures, (2) what assumptions underlie the calculations, and (3) an exploration of these same data sources shows that the range of differences are not as extreme.

The main considerations for such comparisons are whether one includes seasonal homes and units held off market in the calculations, and whether one makes any additional assumptions with respect to the housing quality and affordability. Adjusting supply shortage for obsolescence and affordability certainly makes it far deeper than its base figures that this viewpoint focuses on.

WHERE IS THE HOUSING SHORTAGE?

There are two basic approaches to estimating housing shortage and both produce very similar sets of results. The first approach is to look at the total housing demand as measured by the reported number of households (or occupied units) relative to the number of households that would be expected based on the long-term trend. When the number of households is above the trend, it typically suggests a supply surplus (all else being equal), and when it is below the trend, it points to a supply deficit.

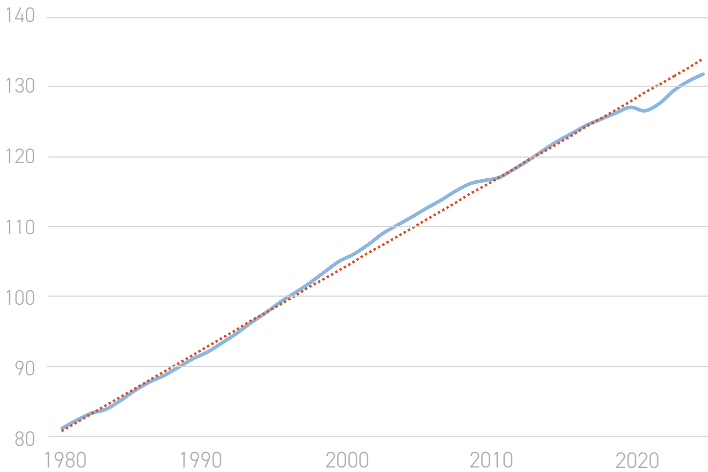
Exhibit 1 illustrates the results based on the first approach. According to a recent Housing Vacancies and Homeownership Survey (HVS), there were 132.1 million households nationally—which is 2.1 million below where that figure would be expected to be based on the long-term trend.[2]

With the annual demand resulting from obsolescence and demolitions being around 400,000 units, this suggests current total pent-up housing demand (or, conversely, supply shortage) of 2.5 million units. Almost half of these "missing" households are, historically, young adults who tend to rent.

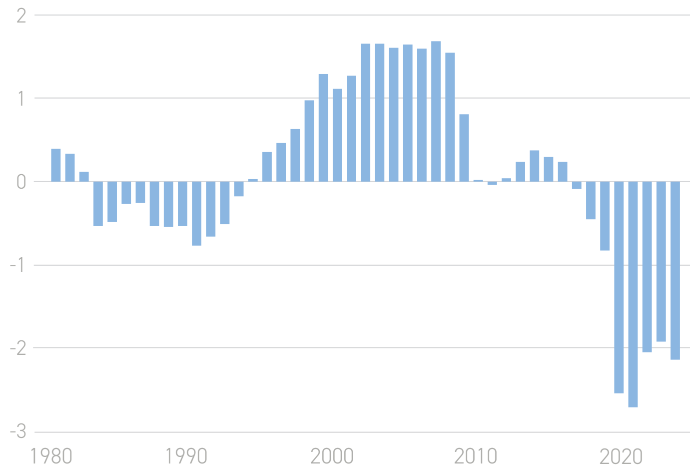
As of 2023, 24.4 million people ages 18 to 34 still lived at home with their parents; that is more than 32% of the total in that cohort (75.3 million). Historically, that share is about 28% and the 4% difference between the current share and its long-term average is equivalent to about 2.5 million people aged 18-34; or about a million households, given the average number of people per household in that group. The key reason why more young adults are living with parents is the severe affordability constraints on being able to form their own household. And the key factor driving housing costs so high is there is not enough housing to meet the demand.

EXHIBIT 1: TOTAL HOUSEHOLDS VS. TREND

TOTAL HOUSEHOLDS MILLIONS



TOTAL HOUSEHOLDS VS. TREND DIFFERENCE, MILLIONS



Sources: Bureau of the Census; Berkshire Research

The second approach to estimate housing shortage looks at supply rather than demand, which provides a more detailed answer, because it allows us to understand not only the aggregate housing imbalance, but also how it is distributed across various market segments (year-round versus seasonal housing), intended tenure (for-sale versus for-rent), property sub-types (single-family versus multifamily), and geographic areas. The data available for such analyses are far from perfect, with margins of errors in quarterly surveys reaching hundreds of thousands of housing units. Despite this, HVS is still the only historically consistent and high frequency source that helps shed some light on these questions by looking at housing shortage (or surplus) as a function of housing vacancy.

The three key states currently experiencing acute housing shortages—Arizona, Florida, and Nevada—also traditionally happen to have the highest concentrations of homes that are held off market, which contributed to their home price and rent declines in the previous cycle.

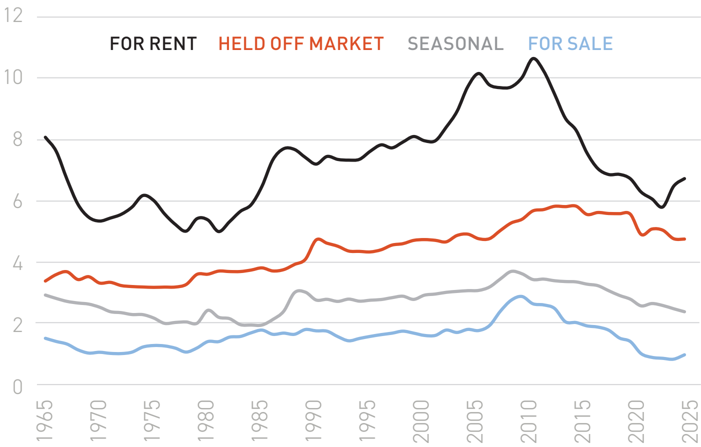
UNDERSTANDING VACANCY

The very notion of a housing shortage may sound surprising when millions of housing units are vacant at any time. More specifically, the Q3 2024 HVS report shows there are now 14.92 million vacant housing units comprised of 11.53 million year-round and 3.39 million seasonal units. The year-round vacant category includes 5.3 million homes that are on the market and 6.2 million that are held off the market. Vacant homes that are on the market include 3.41 million for rent, 893,000 for sale, and 995,000 rented or sold and awaiting occupancy.

While these may seem like big numbers, they do not mean much unless they are expressed as vacancy rates or percentage shares of the corresponding inventories and compared to some historical norms, which are usually approximated by long-term averages *(Exhibit 2)*. For the purposes of this analysis, we compare the current vacancy rates across various housing segments to their corresponding averages since the 1980s when HVS data starts to be continuously available by segment, units in structure, and geography.

The differences between percentages are then multiplied by the current stock figures to be converted into units. The results of this approach show that the aggregate housing shortage is now 2.5 million units *(Exhibit 3)*. This is the highest since at least the early 1980s (and likely longer), and the overall figure also matches the result from the first approach that focuses on demand rather than supply. Most of the shortage is concentrated in year-round housing for rent and for sale which accounts for 1.5 million units, with more than half of it accounted by the single-family segment *(Exhibit 4)*. The remaining shortage is accounted by seasonal and held-off market housing.

EXHIBIT 2: YEAR-ROUND AND SEASONAL VACANCY RATES



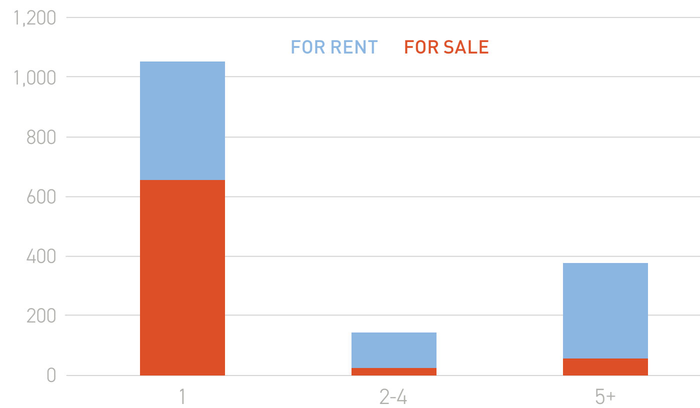
Sources: Bureau of the Census; Berkshire Research

EXHIBIT 3: HOUSING SHORTAGE BY MARKET SEGMENT

	VACANCY RATE, %		HOUSING SHORTAGE	
SEGMENT	LAST 4 QUARTERS*	40-YR AVERAGE	BASIS POINTS	UNITS, MIL.
TOTAL	**10.3**	**12.0**	**-170**	**-2.5**
YEAR-ROUND HOUSING	8.1	9.3	-120	-1.7
FOR RENT	6.6	8.2	-160	-0.8
FOR SALE	1.1	1.8	-70	-0.6
HELD OFF MARKET	4.6	4.9	-30	-0.3
SEASONAL HOUSING	2.4	3.0	-60	-0.8

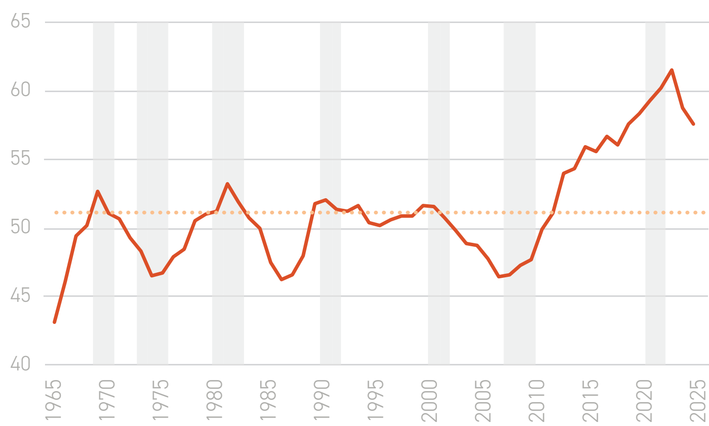
* as of Q3 2024
Sources: Bureau of the Census; Berkshire Research

EXHIBIT 4: HOUSING SHORTAGE BY TENURE AND UNITS IN STRUCTURE



Sources: Bureau of the Census; Berkshire Research

EXHIBIT 5: VACANT UNITS HELD OFF MARKET



Sources: Bureau of the Census; Berkshire Research

ALLEVIATING THE PROBLEM

One potential source that could help alleviate the housing shortage are existing homes that are vacant but held off-market *(Exhibit 5)*. This segment has always been and remains somewhat of a wild card as it tends to be dominated by homes purchased for investment purposes, as a non-primary residence, or for occasional use. Nationally, vacant homes held off-market currently account for 4.3% of the year-round inventory, and this rate stands slightly below the long-term average. This said, these same homes now also account for 54% of all year-round vacant homes compared to 51% historically, and in absolute terms, this excess “shadow” vacant inventory is about 700,000 units.

In the past, the share of vacant homes held off market tended to fluctuate with economic and housing cycles. It was at its highest in 1969-70, 1980-82, 1990-91, and 2000-01—years immediately preceding or accompanying recessions.

The share was at its lowest during the recession of 1973-75 and the Great Recession; both periods being characterized by sharp, abrupt job losses and a high degree of financial distress, forcing many households to sell in an adverse market. If the US housing market were to suffer a major correction (and aggregate oversupply would not be a contributing factor like the last time), we could see that share drop once again, thus helping balance the market somewhat. Coincidentally, three key states currently experiencing acute housing shortages—Arizona, Florida, and Nevada—also traditionally happen to have the highest concentrations of homes that are held off market, which contributed to their home price and rent declines in the previous cycle.[3]

PERSISTENT SHORTAGES

Barring a severe recession with sharp job losses, the US housing shortage is likely to persist for years. The current annual pace of new residential supply (completions) is about 1.6 million units per year, which is barely enough to meet the baseline household growth assumption of 1.0-1.1 million (annual average of the last 10-20 years), plus replacement demand from obsolescence/demolitions of 400,000 units and additional demand for secondary/investment homes of 200,000 million units.

Unless there is a sudden contraction in household growth and/or an influx of held off-market homes, from a purely demand/supply perspective (i.e., keeping other factors such as wages/incomes and interest rates constant), the upward pressure on housing costs is likely to persist. Federal policies to spur more residential construction through tax credits or other incentives (especially for affordable housing) could help narrow the deficit, but that will still likely take years—and availability of land and local zoning restrictions will likely prove challenging. Incentivizing property owners to sell or rent vacant homes held off market can also be a questionable solution, considering that most of such inventory is concentrated at the higher end of the price spectrum, or far above the range that could be deemed "affordable."

Aside from potential macroeconomic and policy implications of the current housing shortage, real estate investors and developers should also consider opportunities as well as risks created by this environment. First, the market clearly needs substantially more new housing for both renter and owner occupancy and in both single-family and multifamily segments. Our prior analysis based on other data sources strongly suggests that virtually all this new supply is needed in the middle and lower ranges of the price spectrum.[4]

Second, the shortage is concentrated in certain parts of the country and unevenly distributed not only across but also within regions and states, varying widely by market, submarket, and product. For example, while housing shortage is present everywhere, it varies from less than 0.5% of existing inventory in Washington, New York, Hawaii, and Iowa to more than 2% in Delaware, Connecticut, Utah, Oklahoma, and Mississippi *(Appendix A)*. Among larger states, total housing shortage is more acute in Ohio, North Carolina, Virginia, Arizona, Nevada, Georgia, and New Jersey. Meanwhile, rental housing shortages also remain very tangible in Texas, California, and Illinois.

SURPLUS EXCEPTIONS

It is also worth noting that despite the aggregate housing shortages, some markets, submarkets, and product niches are facing temporary supply surpluses. These differences need to be evaluated carefully in the context of shifting demographics, including age, household size, income distribution, migration patterns, and so forth.

Rental multifamily with five or more units is a good test-case for this. Nationally, this segment is still undersupplied by about 300,000 units *(Exhibit 4)*. At the same time, institutional-quality subset of rental apartments is currently oversupplied by 0.2%, or about 47,000 units *(Appendix B)*.

Apartment oversupply is even more pronounced in markets across the Sunbelt region of the country, where supply is expanding at a rate of 5-10% annually—the highest pace since the 1980s. The good news is that demand there is also expanding strongly (often exceeding supply) and that the current pace of permits and starts suggests a substantial drop in completions after 2025, which should help fundamentals in those markets start recovering relatively soon. Broader housing supply shortage in these markets should help their apartment segments recover faster once their current apartment pipelines are fully absorbed.

Finally, persistent housing shortage is also a reminder to evaluate scenarios where longer-run inflation ends up higher-than-the-baseline expectation (where it stays close to the Federal Reserve's target of 2%), which could also mean that interest rates do also stay higher for longer. One of the major lessons macro-economists have learned by now is that "housing is the business cycle,"[5] or at least one of its key components, and housing requires a lot more of the right kind of capital investment (both private and public) to keep the overall system functioning well.

APPENDIX A: TOTAL HOUSING SHORTAGE/SURPLUS BY STATE

TOP 5 TOP 10 BOTTOM 10 BOTTOM 5

	FOR SALE		FOR RENT		TOTAL	
STATE	Basis Points	Units, Ths	Basis Points	Units, Ths	Basis Points	Units, Ths
UNITED STATES	-90	-715	-160	-829	-110	-1,545
Delaware	-143	-4	-642	-7	-280	-12
Connecticut	-111	-11	-486	-26	-244	-36
Utah	-96	-8	-436	-16	-202	-24
Oklahoma	-94	-10	-384	-23	-198	-33
Mississippi	-93	-8	-437	-16	-198	-24
Rhode Island	-94	-3	-325	-5	-179	-8
District of Columbia	-100	-1	-228	-5	-179	-6
North Carolina	-134	-40	-260	-42	-178	-82
Ohio	-107	-36	-310	-53	-176	-89
Kansas	-89	-7	-336	-14	-174	-21
Colorado	-103	-17	-294	-26	-170	-43
Virginia	-109	-25	-279	-33	-166	-58
Arizona	-125	-25	-236	-24	-162	-49
Nevada	-172	-13	-146	-8	-161	-21
Alaska	-98	-2	-273	-3	-160	-5
Missouri	-79	-14	-329	-28	-160	-42
Georgia	-100	-28	-239	-37	-150	-65
New Jersey	-91	-21	-247	-33	-148	-53
Nebraska	-73	-4	-288	-8	-147	-12
Kentucky	-81	-10	-279	-17	-144	-27
Michigan	-95	-29	-257	-30	-139	-59
Massachusetts	-65	-11	-255	-28	-138	-40
Wyoming	-59	-1	-305	-2	-133	-3
Maine	-41	-2	-364	-6	-126	-8
Maryland	-139	-23	-78	-6	-119	-29
New Hampshire	-95	-4	-180	-3	-119	-7
Illinois	-63	-22	-226	-39	-117	-61
New Mexico	-81	-5	-193	-5	-117	-10
Montana	-100	-3	-156	-2	-117	-6
Texas	-40	-29	-226	-105	-113	-133
Alabama	-122	-18	-93	-6	-113	-24
Florida	-123	-76	-60	-19	-101	-95
Pennsylvania	-57	-22	-197	-34	-101	-56
Vermont	-91	-2	-91	-1	-91	-3
South Carolina	-104	-17	-42	-3	-86	-20
Minnesota	-67	-11	-117	-8	-82	-20
North Dakota	-56	-1	-124	-2	-82	-3
California	-55	-43	-111	-71	-80	-113
Idaho	-74	-4	-97	-2	-80	-6
West Virginia	-91	-5	-50	-1	-80	-6
Wisconsin	-59	-10	-84	-7	-67	-17
Tennessee	-60	-12	-79	-8	-67	-20
Arkansas	-101	-8	12	1	-61	-8
Oregon	-84	-9	4	0	-51	-9
Louisiana	-7	-1	-138	-9	-51	-10
South Dakota	-20	-1	-117	-1	-51	-2
Indiana	-84	-17	28	2	-50	-14
Washington	-56	-11	-23	-3	-43	-14
New York	-53	-23	-29	-11	-41	-33
Hawaii	-55	-2	-12	0	-38	-2
Iowa	-87	-8	102	4	-31	-4

Sources: Bureau of the Census; Berkshire Research

APPENDIX B: APARTMENT SHORTAGE/SURPLUS: BY MARKET*

TOP 5 TOP 10 BOTTOM 10 BOTTOM 5

	VACANCY RATE		APARTMENT SUPPLY SURPLUS (+) / SHORTAGE (-)	
MARKET	2024	20-Yr Avg	BPS	Units, Ths
UNITED STATES	5.6	5.4	20	46.7
50 MARKETS	5.7	5.5	20	32.4
Indianapolis	6.0	7.2	-120	-2.2
Detroit	4.8	5.8	-100	-2.8
Cincinnati	4.8	5.7	-90	-1.5
Chicago	4.8	5.5	-70	-4.8
Kansas City	5.3	6.0	-70	-1.2
Houston	7.1	7.7	-60	-5.1
Greensboro	6.5	7.1	-60	-0.7
St. Louis	5.9	6.5	-60	-1.0
West Palm Beach	5.5	6.0	-50	-0.7
Pittsburgh	5.7	6.2	-50	-0.7
Cleveland	5.4	5.9	-50	-0.9
Orange County	3.8	4.2	-40	-1.1
Norfolk	4.7	5.1	-40	-0.6
Philadelphia	4.6	4.9	-30	-1.3
New York	3.0	3.2	-20	-3.9
San Francisco	4.3	4.5	-20	-0.6
Washington, DC	4.8	5.0	-20	-1.2
Newark	3.6	3.8	-20	-0.9
Columbus	5.5	5.6	-10	-0.3
Milwaukee	4.1	4.1	0	-0.1
Richmond	5.5	5.5	0	-0.1
Las Vegas	6.2	6.2	0	0.1
Sacramento	5.1	4.9	20	0.3
Boston	4.7	4.5	20	1.2
Seattle	5.2	5.0	20	0.7
Denver	6.0	5.7	30	1.3
San Jose	4.4	4.1	30	0.7
Phoenix	6.9	6.5	40	1.7
Riverside	5.0	4.6	40	0.8
Tampa	6.6	6.1	50	1.6
Jacksonville	7.4	6.9	50	0.8
Orlando	6.3	5.7	60	1.7
Dallas	7.0	6.4	60	4.4
San Diego	4.5	3.9	60	2.0
Los Angeles	4.9	4.3	60	6.9
Atlanta	7.7	7.1	60	3.5
Miami	4.7	4.0	70	2.2
Nashville	6.0	5.2	80	1.6
Raleigh	6.7	5.9	80	1.6
Baltimore	5.8	5.0	80	1.9
Charlotte	6.9	6.1	80	2.0
Memphis	8.0	7.1	90	1.1
Fort Lauderdale	5.7	4.8	90	1.8
Portland	5.7	4.6	110	2.7
Fort Worth	7.9	6.7	120	3.0
Oakland	5.3	4.1	120	2.6
Salt Lake City	6.1	4.7	140	2.0
Minneapolis	5.7	4.3	140	4.8
San Antonio	8.6	7.1	150	3.5
Austin	7.6	5.8	180	5.9

* 50 largest markets based on apartment inventory

Sources: RealPage, Berkshire Research

ABOUT THE AUTHOR

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

NOTES

[1] The range of estimates quoted here is based on published reports by John Burns Consulting & Research, Freddie Mac, Moody's Analytics, National Association of Home Builder (NAHB), National Association of Realtors (NAR), National Low Income Housing Coalition (NLIHC), Up for Growth, and Zillow.

[2] CPS/HVS has been conducted by the Census Bureau for decades and is the main publicly available source providing estimates of households and homeownership rates on a quarterly frequency: https://www.census.gov/housing/hvs/data/histtabs.html

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REVIEWER RESPONSE

The author rightly posits that the US is, and is likely to continue to be, chronically under-housed. One need only look at how relatively resilient for-sale prices have been in the face of higher borrowing rates to comprehend that there is generally more demand than supply. While this is a good thing for existing homeowners whose properties have become more valuable, it is a constraint to young people whose ability to form households has a direct impact on domestic growth.

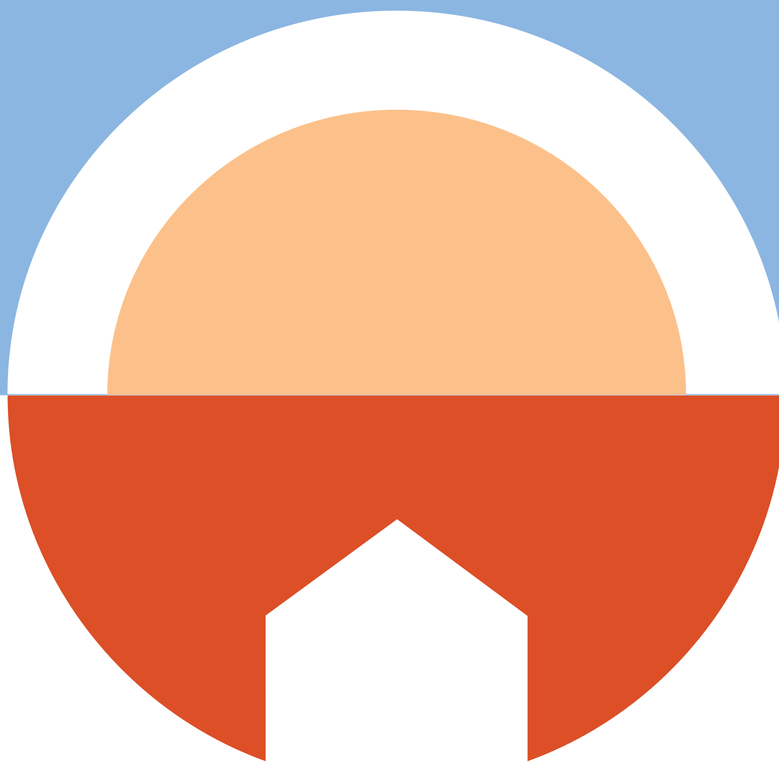
Towards the end of the piece, the author points out that the distribution of this shortage is not created equally, and that existing inventory is woefully inadequate in certain states (like North Carolina, Arizona, and New Jersey) while being a more benign element elsewhere. This deserves deeper consideration; the calculations outlined at the beginning of the article that arrive at roughly the same aggregate housing shortfall (+/-2 million housing units nationwide) cannot quantitatively account for the relative desirability of the available housing in terms of where it is. If 10% (or more) of the existing inventory today is in locations that are not attractive to today's households, the deficit is arguably even greater.

One juxtaposition in the current environment that is highlighted is the seeming disconnect between a relative cyclical excess of for-rent supply (as reflected in increases in apartment vacancy rates and a slowdown in rental rate growth over the last ~18 months) and a housing shortfall. Some may wonder how it is possible that we do not have enough housing and yet thousands of apartment units are sitting vacant – the piece highlights this as being related to the type of rental product being delivered (i.e., too many high-priced institutional units and not enough affordably priced units), however it bears mentioning that delivering truly affordable new product has become economically unviable for many investors given rising costs and elevated return hurdles. As the conclusion states, a scenario whereby inflation settles higher for longer makes these even more difficult to deliver – perpetuating the chronic shortage.

– Sabrina Unger
Managing Director, Head of Research and Strategy, American Realty Advisors
Member, Summit Journal Editorial Board

From the market fundamentals perspective, attainable housing will continue to present a broad spectrum of investment opportunities.

FLORIDA FOCUS



Rafael Aregger
Head of US Investments
Empira Group

The National Association of Home Builders' Multifamily Production Index reported a low score towards the end of 2024, but instead of serving as a red flag for developers, a low rating can also be seen as an opportunity.

Sentiment around multifamily production is mixed, with significant obstacles for new development. The National Association of Home Builders' (NAHB) Multifamily Production Index, a scale from zero to one hundred measuring builder and developer sentiment around current apartment and condo development conditions, reported a reading of forty in Q3 2024.[1] This score, the lowest in 2024, indicates that present conditions are chiefly viewed more negative than good.

But instead of serving as a red flag for developers, a low rating can also be seen as an opportunity—particularly in markets like South Florida.

Upon emerging from the depths of the COVID-19 pandemic, a widespread narrative centered on residential oversupply has risen to the top of industry conversations. Yet, the real situation is more nuanced.

It is true that a large number of new units are being delivered throughout 2024 and 2025; however, due to the current capital markets-related headwinds, new development has essentially come to a halt. New deliveries significantly drop off in 2026, 2027, and the years thereafter. On aggregate, the region is still tremendously undersupplied when it comes to housing and the slowdown in construction activity and aging of existing inventory will only exacerbate this supply shortage in the medium- and long-term.

The combination of diminishing new supply, aging/subpar existing inventory, plus growing regional demand for housing driven by favorable economic and demographic trends, offers a solid long-term foundation for developers to capitalize on.

OVERSUPPLY: AN OVERESTIMATED PHENOMENON

Concerns around temporary oversupply are valid, and effects are being felt by developers who are currently delivering new units, competing on lease-up with several other projects delivering at the same time.

When looking ahead to 2026 and 2027 once new deliveries have largely diminished, absorption projections signal that South Florida's multifamily pipeline will struggle to keep up with demand as there continues to be a broader regional housing shortage on an aggregate level. This shortage will only widen as developers and investors continue to pump the brakes and newer units continue to be absorbed.

In terms of occupancy, the South Florida market continues to report resilient occupancy rates, despite absorption concerns: 95% in Q2 2024, outpacing the national average by 80 basis points.[2] With regard to absorption, by the end of Q2 2024, there were 6,910 net units absorbed in South Florida, equating to 89% of the total net absorption in 2023 and more than the entire net absorption in 2022.[3]

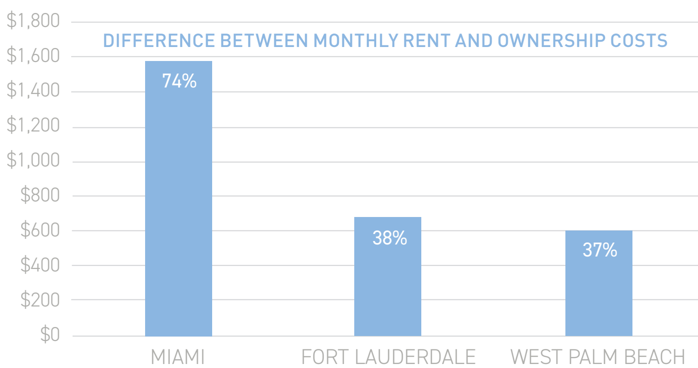
A recent report by Berkadia contradicts the oversupply worries with occupancy projections showcasing that multifamily occupancy has already troughed in 2023 and is expected to remain within the 96% range in 2026. Furthermore, the occupancy spread between South Florida and the national level is solely expected to widen in favor of the former.

Brickell, an area of Miami, which has become the leading financial hub of the South and a draw for large corporations, experienced growing residential rents, resilient office occupancies, and is a prime example that the oversupply phenomenon is overstated. As of Q3 2024, there were no market-rate-only multifamily projects under construction, with only three in the permitting phase, despite the strong local market fundamentals.[4] The newest entirely market-rate multifamily property in Brickell was delivered in 2019 under the name "Maizon."

Brickell has seen numerous branded luxury condominiums deliver since 2019, though South Florida's condominium shadow rental market is a common misconception. It would be inaccurate to assume that this condominium shadow rental market will capture or subsidize the multifamily housing shortage in a meaningful way.

Owning a residential property today is much more costly than renting, which is an equation unlikely to change any time soon, with the average monthly mortgage payment significantly outpacing monthly rent payments nationwide.[5] In South Florida, monthly cost premiums for total ownership compared to costs for renter households are up as much as 74% in metros, including Miami.[6] In addition to mortgage payments, condominium owners are also on the hook for escalating HOA fees, insurance, and property taxes, thereby limiting ability to recoup costs of ownership from a tenant. As a result, Miami's condominium shadow rental market comes at much higher rents (approximately 20%-30% higher) than the top end of the Class-A multifamily market, which means that a condominium rental unit and a multifamily unit are not in fact competing for the same type of tenant.

EXHIBIT 1: OWNERSHIP VERSUS RENTERSHIP COST PREMIUM, 2024



Source: SmartAsset 2024 Study. Monthly Homeownership Costs includes mortgage, insurance, property taxes, basic utilities and any association fees. Monthly rent includes basic utilities

NOT ALL STOCK IS EQUAL

Another consideration limiting aggregate residential supply is the fact that a significant portion of South Florida's housing inventory is aging. In Miami-Dade, Broward, and Palm Beach counties, 74% of condos were built before 1993.[7] The aging supply forces renters to rent older units. For example, 377 multifamily units were rented that were built before 1980 in the affluent zip code of Brickell from January through May 2024, due to the undersupply of newer buildings.

Further analyzing South Florida zip codes with the most pre-1980 multifamily units rented during this time period, more than two-thirds of those zip codes had an inventory with a median built year prior to 2000.[8] Older buildings have become costly to maintain, lack safety measures to mitigate the effects of severe weather hazards, and overall present as a much less attractive housing option for the evolving renter profile in the region.

EXHIBIT 2: TOP ZIP CODES IN SOUTH FLORIDA WITH THE MOST MULTIFAMILY UNITS RENTED, JANUARY–MAY 2024

POSTAL CODE	CITY NAME	MEDIAN YEAR BUILT
33139	MIAMI BEACH	1965
33131	MIAMI – BRICKELL	2008
33141	MIAMI – NORTH BAY VILLAGE	1958
33130	MIAMI – BRICKELL/LITTLE HAVANA	2008
33137	MIAMI – BUENA VISTA	2015
33160	MIAMI – EASTERN SHORES	1980
33132	MIAMI – DOWNTOWN/MIDTOWN	2007
33025	BROWARD – HOLLYWOOD	2000
33009	BROWARD – HALLANDALE	1974
33133	MIAMI – COCUNUT GROVE	1992
33134	MIAMI – COCUNUT GROVE/LITTLE GABLES	1967
33178	MIAMI– WEST DORAL	2010
33020	BROWARD – HOLLYWOOD	1971
33180	MIAMI – AVENTURA	1991
33140	MIAMI – NORTH MIAMI BEACH	1967

Source: MIAMI MLS data. MIAMI REALTORS COMMERCIAL- Southeast Florida Residential Rental Market May 2024 Report. Homes built before 1980

New building codes implemented following the Champlain South Tower collapse in 2021 have increased operational costs and potential financial risks (e.g., assessments) for older buildings, making them less appealing for both residential and investment purposes. These new building codes require mandatory structural integrity inspections for condominium buildings that are three stories or taller, particularly those reaching thirty years old, with harsh timelines for buildings located near the coastline.

Meanwhile, affluent young professionals and empty nesters increasingly seek new, amenity-rich rental properties in premium locations. New York transplants focus on walkability and amenity scores, willing to pay a premium for such conveniences. Traffic has also become an infrastructural hurdle for South Florida, further increasing the value for properties accessible to public transportation and with proximity to jobs, restaurants, and leisure activities.

The price margin between Class A, B, and C rents have widened. From the end of 2020 to the first quarter of 2024, average Class A rent premiums increased by approximately 23% compared to Class B from 2015-2019, and average Class A rents saw an increase of 35% in premiums compared to Class C from 2015-2019.[9] Furthermore, over the last decade, 90% of demand growth has been concentrated in four- and five-star units in Miami.

ECONOMIC AND DEMOGRAPHIC RESILIENCE IN SOUTH FLORIDA

In terms of multifamily rental demand, South Florida has solidified its position as a hotspot for resilient economic and demographic growth, particularly Miami and West Palm Beach, which have benefited from an influx of high-paying jobs and skilled professionals.

Florida's GDP is expected to grow by 4.1% in 2025, with a 3.9% increase anticipated in 2026.[10] The strong correlation between multifamily rent growth, GDP growth and a healthy local labor market, illustrates a solid demand backdrop for multifamily investments in South Florida in the years ahead.

Florida's GDP is expected to grow by 4.1% in 2025, with a 3.9% increase anticipated in 2026.

EXHIBIT 3: UNEMPLOYMENT RATE BY COUNTY, STATE OF FLORIDA, JULY 2024

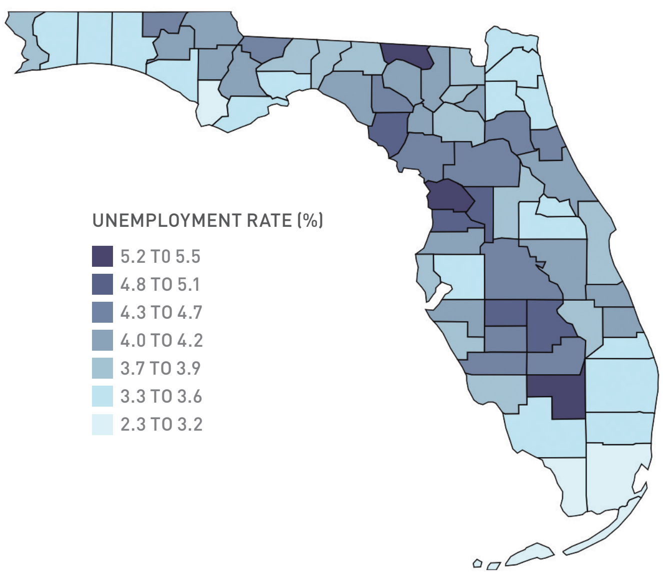


Figure 3: Source: BLS.Gov, Local Area Unemployment Statistics Map, July 2024

The region's economy is also diversifying beyond its traditional reliance on leisure and hospitality, in turn cultivating resilience. Sectors such as information technology, professional services, and manufacturing are expanding, further decreasing industry-specific dependence and risk. Southeast Florida is projected to boast 2.4% job growth in 2025. As of Q2 2024, there were 1.6 job openings for every unemployed Floridian.[11] This exemplifies a robust job market and confirms a dynamic business landscape for employers, both of which will continue to propel in-migration.

Revisiting Miami and Brickell as a prime example, in August 2024, Miami recorded a 2.9% increase in private-sector jobs—double the national average—adding 33,300 positions.[12] Brickell appeals to affluent residents, with its primary ZIP code (33131) boasting a mean household income of $185,585 (median of $121,730).[13]

Further highlighting the strength of the job market and the robust demand for commercial spaces, recent Q2 2024 data indicates that Miami's Class A office vacancy rates have decreased 1.1% year-over-year. Brickell displayed an impressive average asking lease rate of $99.40 per square foot—a 5.8% year-over-year increase in price.[14]

Companies are investing in the region and growing their skilled workforces. In addition to Ken Griffin's large investment in South Florida, J.P. Morgan is also increasing its capacity by adding four hundred more employees, doubling the size of its Brickell office to 160,000 square feet. Paul Singer's firm, Elliott, just closed on the office tower 701 Brickell, a Class A trophy asset, for $443 million, which represents the second largest office transaction in the history of Florida. Similarly, in West Palm Beach, Goldman Sachs, Point72, and J.P. Morgan are among an impressive list of tenants of the newly developed office tower, 360 Rosemary.

South Florida's Class A office market is healthy, which differentiates it from most office markets across the US and is representative for the region's strong local economy and intact growth prospect.

Southeast Florida is projected to boast 2.4% job growth in 2025.

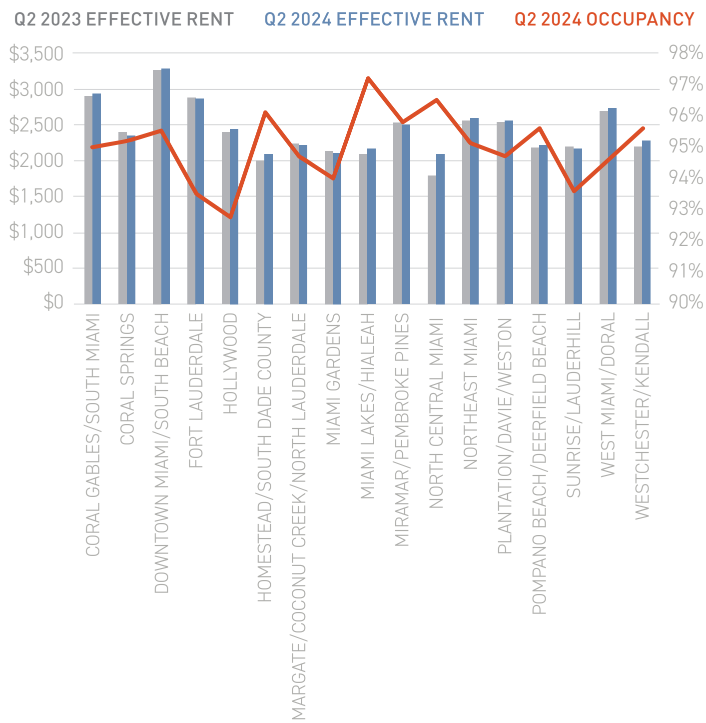
THE IMPORTANCE OF MICRO-LOCATION STRATEGY

Investment success in South Florida increasingly depends on micro-location analysis. Submarkets like Coral Gables or Downtown Miami outshine others in effective rent and occupancy growth.

For instance, in Q2 2024, Downtown Miami reported an effective rent of $3,286 with a 70-basis-point increase in occupancy to 95.5%. In contrast, North Central Miami reported rents of $2,096 and a 150-basis-point decline in occupancy, which indicates lower desirability and stronger temporary supply headwinds due to lower barriers to entry for new development.[15]

Developers who target submarkets with higher barriers to entry plus superior characteristics regarding walkability, transportation, safety, and access to top schools will see higher rent growth and occupancy, thereby increasing their chance for investment success.

EXHIBIT 4: SOUTH FLORIDA SUBMARKETS, EFFECTIVE RENT AND OCCUPANCY



Source: Berkadia Mid-Year 2024 Multifamily South Florida Report

ACTIVE PLAYERS IN THE SOUTH FLORIDA MARKET WILL BE REWARDED

The real estate sector is approaching the next phase of growth, making this the ideal moment to prepare for future opportunities. In fact, the negative sentiment and related slowdown in new supply activity may essentially unearth the best opportunities in South Florida over the next few years.

The current environment offers unique entry points that should not be overlooked due to negative sentiment. Investors who continue to be active in markets with steady demand, growth drivers and supply limitations will be rewarded over the next real estate market cycle.

ABOUT THE AUTHOR

Rafael Aregger is the Head of US Investments at Empira Group, a leading real estate investment manager.

NOTES

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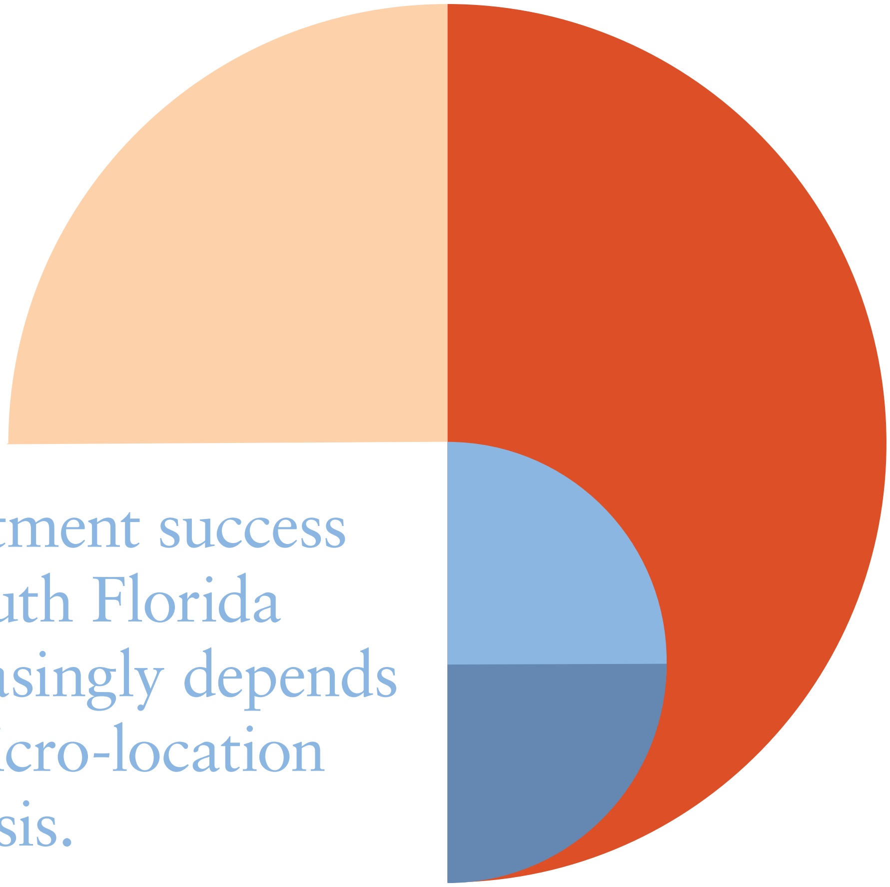
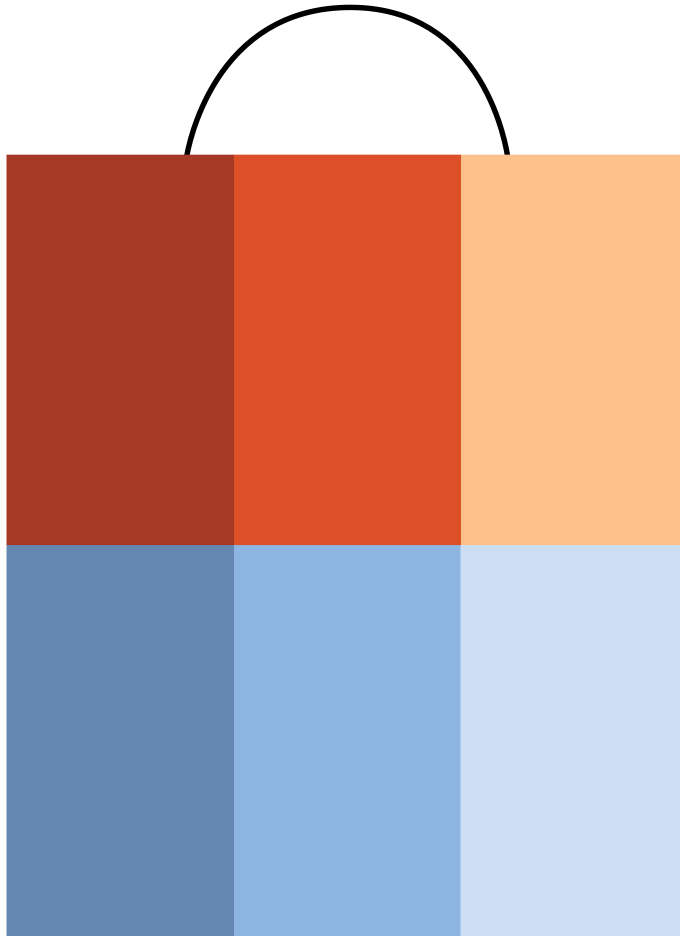


Investment success in South Florida increasingly depends on micro-location analysis.

WHOLESALE CHANGE



Stewart Rubin
Senior Director, Head of Strategy and Research
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Dakota Firenze
Senior Associate
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Retail has gone from being the weakest asset class to a promising one due to modest inventory growth and the elimination of redundant space. Opportunities abound in growing markets in which retail has not yet caught up with an increasing population.

In 2014, we published an article titled "Challenges Confronting US Retail Properties," in which we outlined the major challenges confronting retail properties and voiced concern about the health of the sector.[1]

During the subsequent period the sector continued to exhibit weakness and many retail facilities became redundant or obsolete. Delinquency rates have remained elevated for most of that time period. In response to this weakness, the level of new construction decreased substantially, and more than 280 million square feet of space was demolished over the past decade. As a result, retail vacancy rates are lower now than they were pre-COVID (the only major sector of which that can be said).

In the future, more obsolete retail space is expected to be destroyed or repurposed. The sector appears to be getting closer to recalibration based on the combination of reduced construction and demolitions. Nevertheless, nearly every retail property in America competes with Amazon (and other online retailers).

In urban areas, retail rents differ from block, mid-block, and corner; and in suburban and exurban areas, rents differ by favorable/unfavorable intersection, and curb-cut to curb-cut. It is perhaps the most location-specific property type because visual exposure, access, and pedestrian and vehicular traffic patterns impact desirability to a granular extreme.

While each retail property has unique characteristics and involves very targeted investment decision-making, the sector is impacted by metro area supply and demand characteristics as well as national economic considerations. On the market level, factors like population growth, household income growth, and retail per capita impact potential performance in the retail sector. On the national macro level, the health of the economy, wages, savings, and retail sales impact the sector.

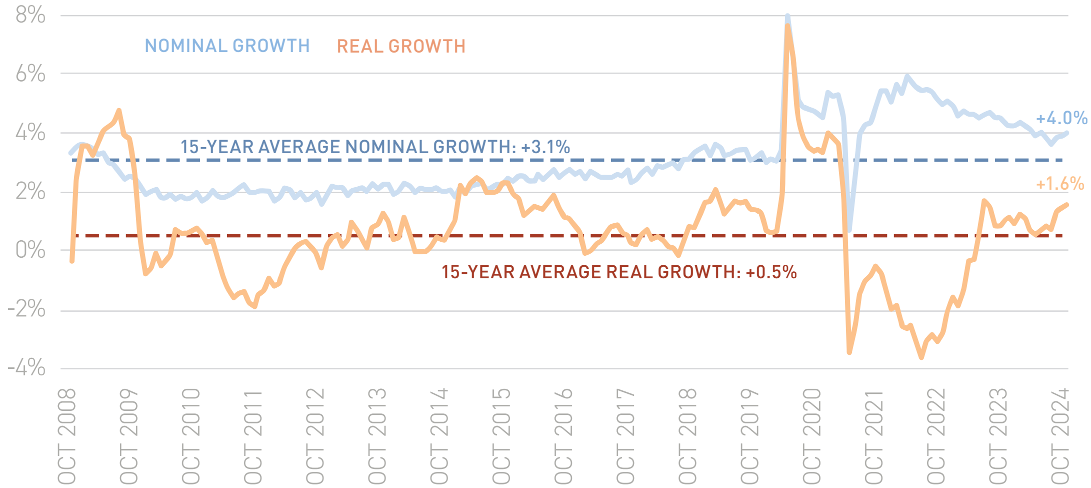
We begin our discussion on the macroeconomic level.

STAGNANT WAGE GROWTH AND EXHAUSTION OF COVID-ERA SAVINGS

Stagnant wage growth and the exhaustion of excess savings derived from COVID-era fiscal stimulus could pressure retail sales in the future. Over the past fifteen years, annual wage growth (nominal) has averaged 3.1%, only slightly outstripped average annual inflation over that period, resulting in *real* average wage growth of just 0.5% annually over the past 15 years.

As of October 2024, real wage growth of 1.6% YOY is an improvement, but it comes on the heels of nearly two years of high inflation and negative real wage growth. Since the pandemic began, inflation-adjusted wages are up a cumulative 2.3% over that four-and-a-half-year period. Workers who have experienced wage growth that has barely kept up with inflation may be forced to reduce discretionary spending in order to pay for necessities.

EXHIBIT 1: AVERAGE HOURLY EARNINGS GROWTH IN THE PRIVATE SECTOR



Source: US Bureau of Labor Statistics

Americans' excess savings climbed to a high of nearly $2.1 trillion in August 2021, boosted by a combination of fiscal stimulus and inability to spend on services during the pandemic. However, this has now been exhausted, and the level of Americans' savings is below the level prior to the beginning of the COVID response, according to the San Francisco Federal Reserve.

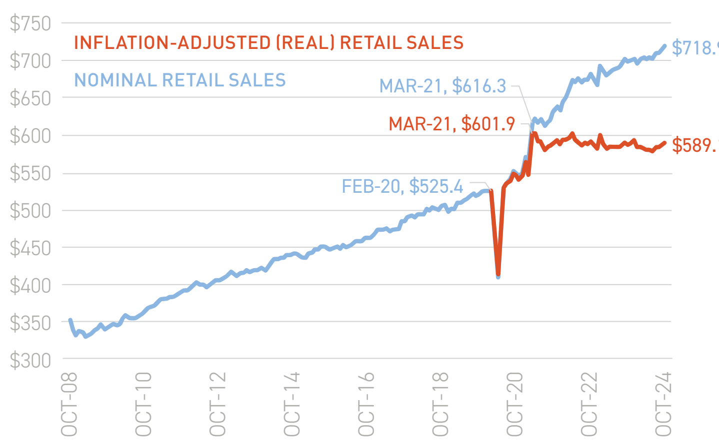
EXHIBIT 2: AMERICANS' EXCESS SAVINGS ($ TRILLIONS)

Source: US Bureau of Economic Analysis; San Francisco Federal Reserve; as of September 2024

RETAIL SALES ARE FLAT ON REAL BASIS

Retail sales on a nominal basis are up 2.8% YOY as of October 2024. However, real retail sales are up 0.3% YOY. Similarly, from March 2021, nominal retail sales are up 17%, while real retail sales are down—2% over the same period. This stagnation in real retail sales demonstrates that consumer spending may not be as strong as headline nominal retail sales would imply.

EXHIBIT 3: INFLATION-ADJUSTED RETAIL SALES IN RETAIL IN FOOD SERVICES



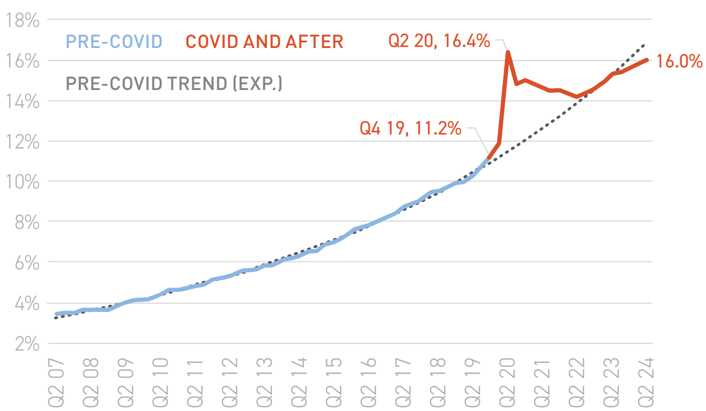
Source: US Census Bureau, "Advance Monthly Retail Sales: October 2024"

EVERY RETAIL PROPERTY HAS A VIRTUAL MALL NEXT DOOR

Every retail property in America competes with a virtual mall situated in the palm of each American's hand. This comes in the form of Amazon as well as other online retailers. E-commerce as a share of total sales increased from 15.8% in Q1 2024 to 16.0% in Q2 2024. The growth in e-commerce sales has slowed in both nominal and real terms, from 8.1% and 4.6% YOY in Q1 2024, down to 6.7% and 3.7% YOY in Q2 2024, respectively. Not dissimilar from retail sales, e-commerce sales were up 83.1% on a nominal since Q1 2020, however, real e-commerce sales were up 51% over the same period.

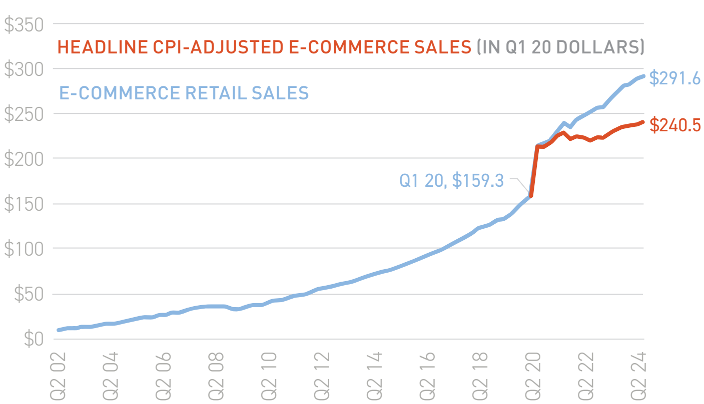
In terms of occupancy level, retail has been the best-performing major property type since the beginning of the pandemic.

EXHIBIT 4: QUARTERLY E-COMMERCE SALES, AS PERCENTAGE OF TOTAL RETAIL SALES



Source: US Census Bureau; as of 2024

EXHIBIT 5: QUARTERLY E-COMMERCE RETAIL SALES



Source: US Census Bureau; as of 2024

CRE RETAIL FUNDAMENTALS

In terms of occupancy level, retail has been the best-performing major property type since the beginning of the pandemic. Among the four major property types, it is the only one with a vacancy rate lower than it was pre-COVID. A major factor in this good performance has been the nominal new construction that has entered the market since pre-COVID. Apart from industrial, retail asking rent growth has outstripped the other property types over the past year as of Q2 2024.

EXHIBIT 6: VACANCY AND RENT GROWTH IN THE US

	VACANCY RATE, %		RENT GROWTH (YR/YR)	RENT GROWTH SINCE COVID BEGAN
PROPERTY TYPE	Q1 20	Q2 24	Q2 24	Q2 24
MULTIFAMILY	6.7%	7.8%	1.1%	18.6%
OFFICE	9.4%	13.8%	0.8%	0.9%
INDUSTRIAL	5.2%	6.5%	4.3%	36.3%
RETAIL	4.5%	4.1%	2.7%	14.7%

Note: Since the pandemic. Began as defined Q1 2020 through Q2 2024. Multifamily rent is effective rent.

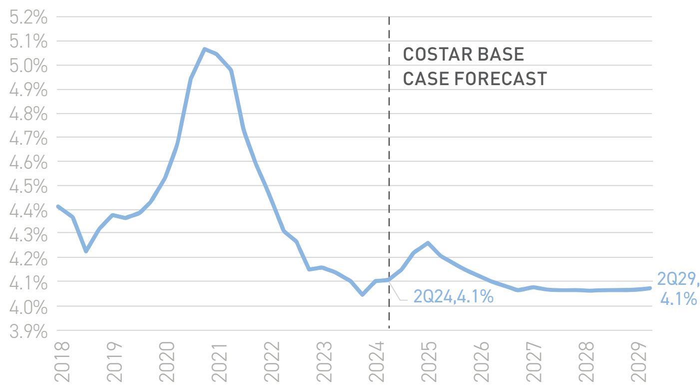
Source: CoStar Group; as of Q2 2024.

Apart from industrial, retail asking rent growth has outstripped the other property types over the past year as of Q2 2024.

Forecasts project the very-low level of construction to continue, and for supply and demand to remain largely neutral, resulting in similar vacancy rates over the next five years. Asking rents, which have grown 2.7% YOY on a nominal basis, are projected to have only modest rent increases of about 2% annually over the next five years.

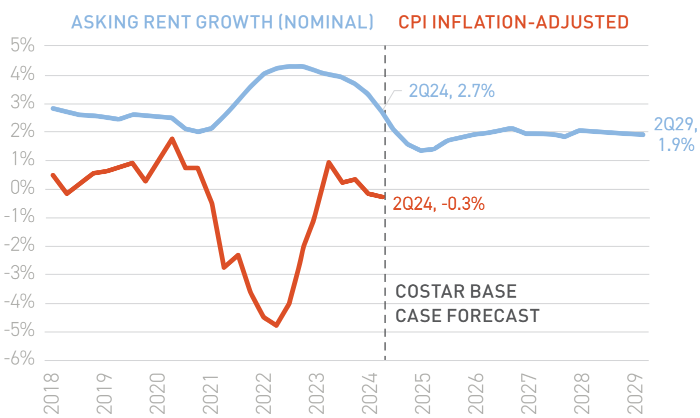
> As of Q2 2024, the retail vacancy rates in central business districts (CBDs) and suburban locations were 4.5% and 3.9%, respectively.

EXHIBIT 7: TOP 88 MARKETS, RETAIL VACANCY RATES



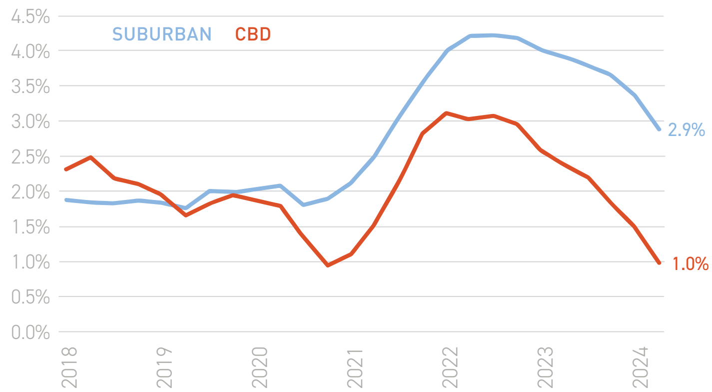
Source: CoStar Group; as of Q2 2024

EXHIBIT 8: TOP 88 MARKETS, RETAIL RENT GROWTH (YEAR-OVER-YEAR)



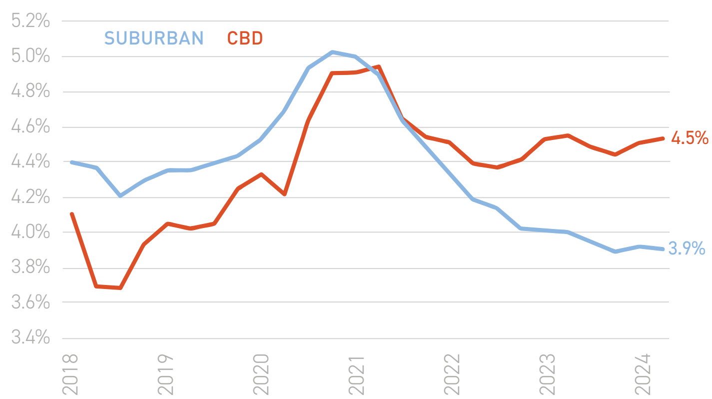
Source: CoStar Group; as of Q2 2024

EXHIBIT 9: TOP 88 MARKETS, RETAIL ASKING RENT GROWTH (PERCENT YEAR-OVER-YEAR)



Source: CoStar Group; as of Q2 2024

EXHIBIT 10: TOP 88 MARKETS, RETAIL VACANCY RATE (PERCENT)



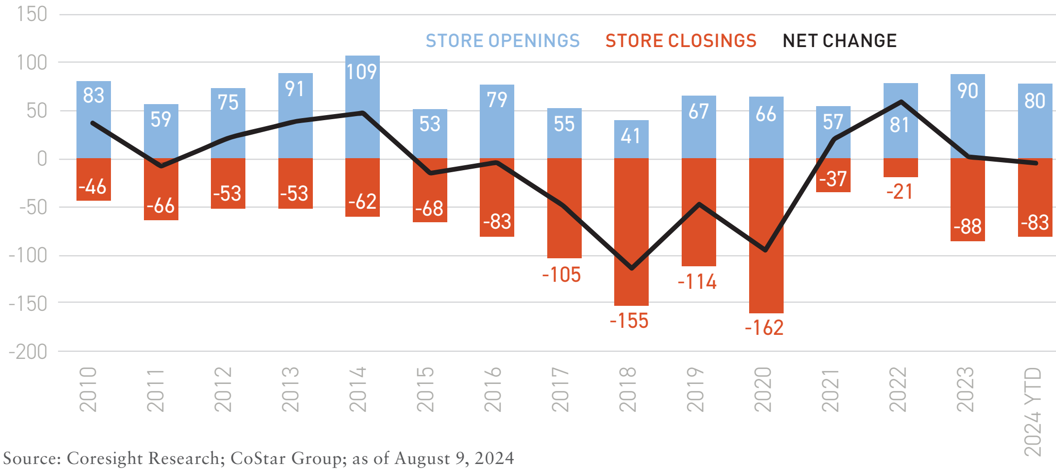
Source: CoStar Group; as of Q2 2024

Demand for urban retail has been weakened by less daytime foot traffic in certain urban cores stemming from remote work. Conversely, suburban neighborhood centers are seeing some of the benefits from remote work, and we expect this dynamic to continue. Prior to 2019, urban retail experienced lower vacancy rates and greater rent growth relative to suburban locations. Since COVID, this trend has reversed. As of Q2 2024, the retail vacancy rates in central business districts (CBDs) and suburban locations were 4.5% and 3.9%, respectively. Likewise, suburban retail asking rent growth of 2.9% YOY outstrips 1.0% YOY growth for retail properties in CBD locations.

NET STORE OPENINGS FLAT AFTER STRONG PAST THREE YEARS

In 2024 year-to-date, retail store openings are down slightly on a net basis. Over the previous three years, store openings have outpaced closures, which was a shift from before COVID, when closures significantly outpaced openings between 2015 and 2020.

EXHIBIT 11: RETAIL SPACE ANNOUNCED OPENINGS AND CLOSINGS (MILLION SQUARE FEET)

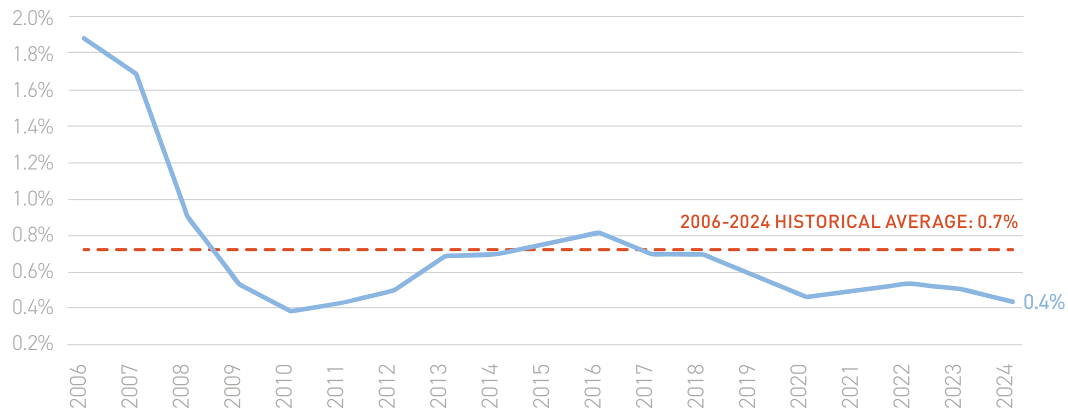


Source: Coresight Research; CoStar Group; as of August 9, 2024

CONSTRUCTION IS SUBSTANTIALLY BELOW PAST LEVELS

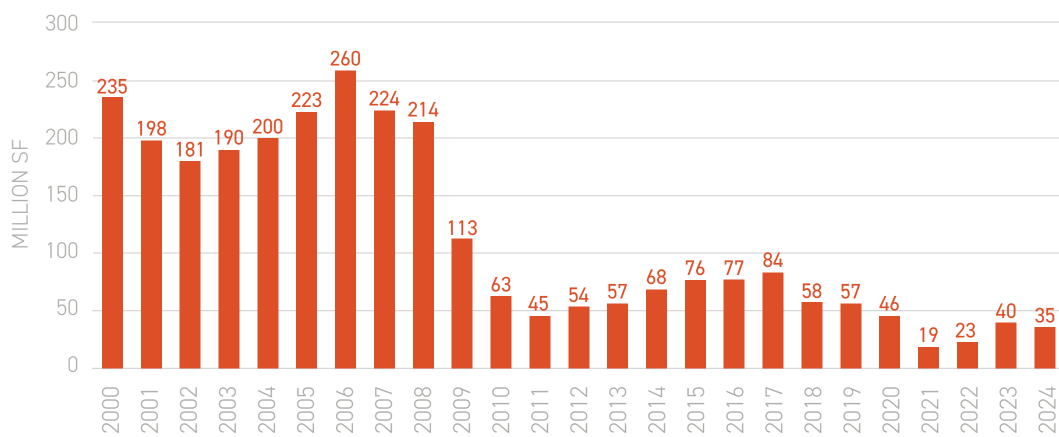
The level of retail space currently under construction stands at just 0.4% of existing inventory, which is below average over the past 18 years of 0.7%. In the years prior to the Global Financial Crisis (GFC), an average 214 million square feet of retail space was delivered annually in the US Since the GFC (from 2009 to 2024), the average has fallen to 57 million square feet. Retail new supply hit a record low in 2021 during the COVID pandemic.

EXHIBIT 12: TOP 88 MARKETS, RETAIL UNDER CONSTRUCTION (SQUARE FEET, AS PERCENT OF EXISTING INVENTORY)



Source: CoStar Group; as of Q2 2024

EXHIBIT 13: TOP 88 MARKETS, NET DELIVERED RETAIL SQUARE FEET (ANNUAL)

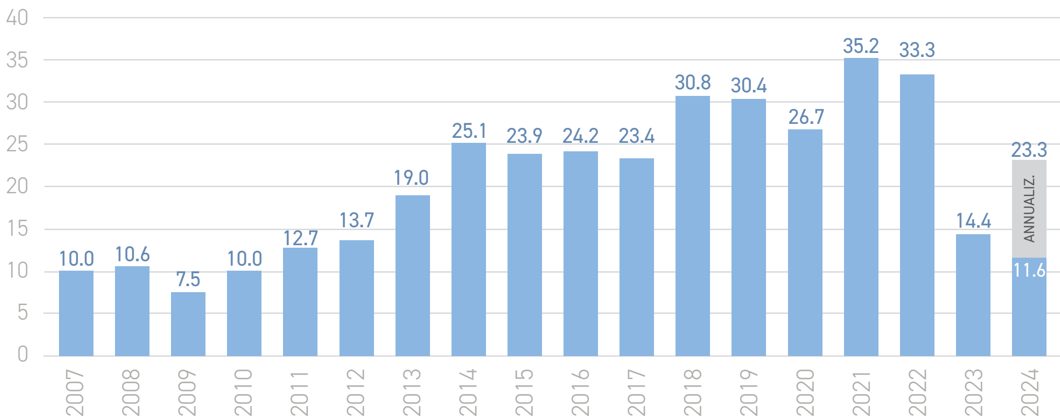


Note: 2024 is annualized based on data through Q2

Source: CoStar Group; as of Q2 2024

Although the level of gross retail construction remains low by historical standards, another factor leading to the low level of net retail construction is the demolished retail space across the US. Over the past four and a half years, 122 million square feet have been removed from inventory, and 280 million square feet over the past decade.

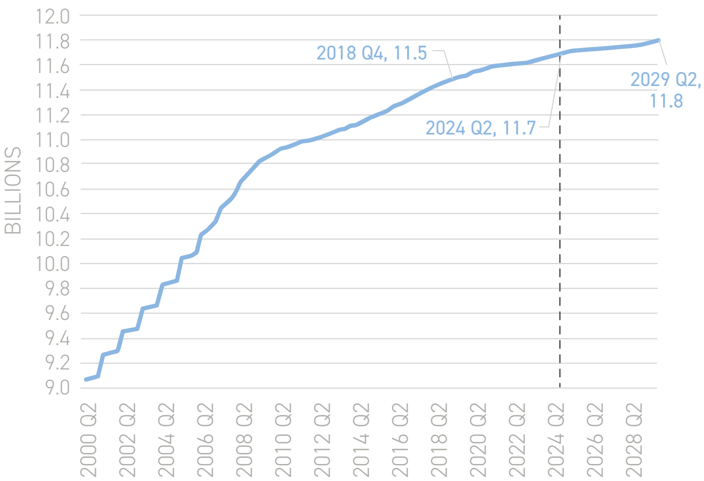
EXHIBIT 14: RETAIL SPACE DEMOLISHED BY YEAR (MILLIONS OF SQUARE FEET)



Source: CoStar Group; as of Q2 2024

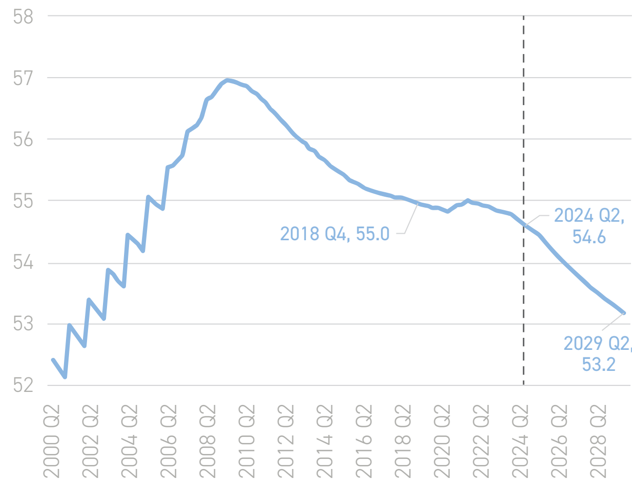
Total retail inventory has grown at an anemic rate over the past fifteen years. This is the result of little new construction and the demolishment and reimagining of some existing space. However, considering that the US population has grown over the same time period, the per capita retail space has plummeted at a significant rate.

EXHIBIT 15: TOP 88 MARKETS, TOTAL RETAIL INVENTORY (SQUARE FEET)



Source: CoStar Group; as of Q2 2024

EXHIBIT 16: TOP 88 MARKETS, RETAIL PER CAPITA (SQUARE FEET PER PERSON)

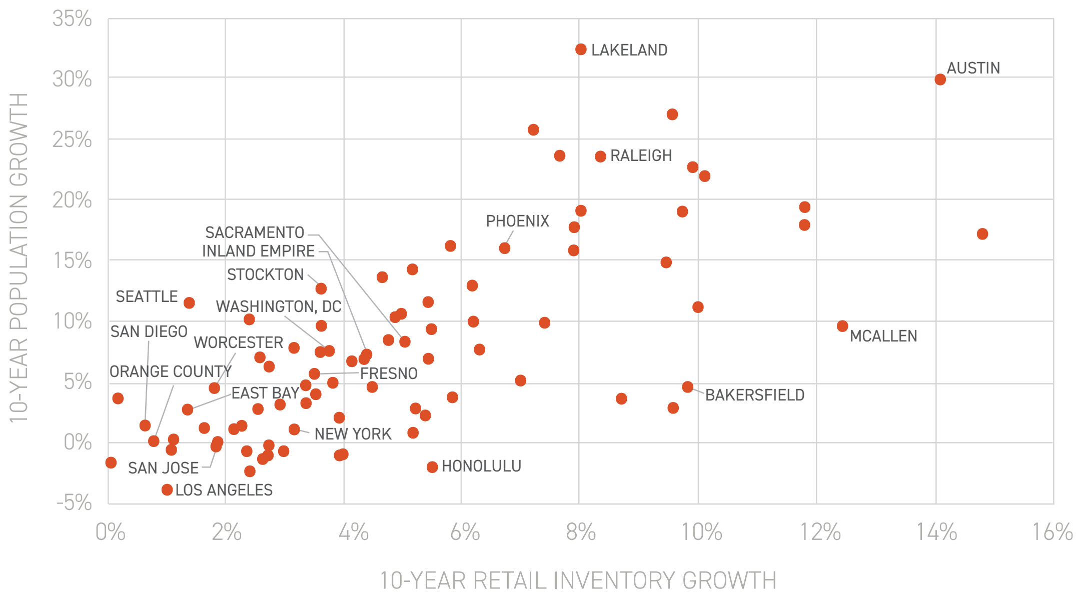


Source: CoStar Group; as of Q2 2024

POPULATION GROWING FASTER THAN INVENTORY IN MOST MARKETS

Over the past decade, the rate of population growth has outpaced the rate of retail inventory growth in fifty-five of the top eighty-eight markets. Of markets with population growth greater than 22% over this period, only Austin had retail inventory growth that surpassed 10%. Generally, metro areas above the black line could represent retail markets that are less at risk of oversupply.

EXHIBIT 17: POPULATION GROWTH AND RETAIL INVENTORY GROWTH, 2014–24



Source: CoStar Group; as of Q2 2024

OVERBUILT RETAIL, NOT EVENLY DISTRIBUTED

The US retail market is still widely considered overbuilt. According to the International Council of Shopping Centers (ICSC),[2] the US has twenty-four square feet of shopping center and mall retail per capita, significantly more than Canada (17), Australia (11), U.K. (5), France (4), China (3), and Germany (2). When all retail is considered, the US has thirty-six square feet per capita, compared to 19.5 in the UK, according to CoStar.[3] However, this overcapacity is not evenly distributed.

In this section, we examine which parts of the US are most oversupplied.[4] The oversupply is particularly relevant considering that retail is also challenged by relatively stagnant wage growth and e-commerce.

Over the past decade, the rate of population growth has outpaced the rate of retail inventory growth in 55 of the top 88 markets.

EXHIBIT 18: RETAIL SPACE PER CAPITA

RANK	METRO AREA	RETAIL PER CAPITA (SF/PERSON)
1	Dayton - OH	75.4
2	Albany - NY	74.4
3	Birmingham - AL	73.8
4	Little Rock - AR	73.7
5	Rochester - NY	73.2
6	Milwaukee - WI	73.1
7	Cleveland - OH	70.9
8	Memphis - TN	70.0
9	Oklahoma City - OK	69.6
10	Buffalo - NY	69.5
11	Tulsa - OK	68.8
12	New Orleans - LA	68.7
13	Greensboro - NC	68.5
14	Pittsburgh - PA	68.2
15	Omaha - NE	66.6
16	Savannah - GA	66.3
17	Greenville - SC	65.9
18	Columbia - SC	65.7
19	New Haven - CT	65.6
20	Hartford - CT	65.3
21	Knoxville - TN	64.9
22	Louisville - KY	63.9
23	Saint Louis - MO	63.6
24	Chicago - IL	62.7
25	Albuquerque - NM	62.5
26	Indianapolis - IN	62.2
27	El Paso - TX	61.9
28	Norfolk - VA	61.6
29	Providence - RI	61.2
30	Detroit - MI	60.6
31	Grand Rapids - MI	60.6
32	Kansas City - MO	60.1
33	Cincinnati - OH	60.0
34	Richmond - VA	59.7
35	Atlanta - GA	59.1
36	Lehigh Valley - PA	59.1
37	Fort Myers - FL	58.9
38	Sarasota - FL	58.8
39	Jacksonville - FL	58.7
40	Nashville - TN	58.6
41	Houston - TX	58.4
42	Colorado Springs - CO	58.0
43	Dallas-Fort Worth - TX	57.5
44	Charleston - SC	57.5
45	Salt Lake City - UT	57.0
46	Fort Lauderdale - FL	56.8
47	Columbus - OH	56.6
48	Stamford - CT	56.4
49	Baton Rouge - LA	55.9
50	Minneapolis - MN	55.5
51	Orlando - FL	55.5
52	San Antonio - TX	55.4
53	Philadelphia - PA	55.3
54	Miami - FL	54.9
55	Denver - CO	54.6
	88 Market Average	54.6
56	Charlotte - NC	54.5
57	Long Island - NY	53.9
58	San Francisco - CA	53.0
59	Tucson - AZ	53.0
60	Tampa - FL	52.8
61	Palm Beach - FL	52.7
62	Las Vegas - NV	52.2
63	Northern New Jersey - NJ	52.2
64	Boise - ID	51.6
65	Baltimore - MD	51.0
66	Boston - MA	50.8
67	Ventura - CA	50.6
68	Portland - OR	50.1
69	Worcester - MA	50.0
70	Raleigh - NC	49.8
71	Austin - TX	49.4
72	Fresno - CA	48.6
73	Phoenix - AZ	47.6
74	Los Angeles - CA	47.0
75	McAllen - TX	46.7
76	Sacramento - CA	46.4
77	Orange County - CA	45.8
78	East Bay - CA	44.7
79	New York - NY	44.6
80	Seattle - WA	44.6
81	Inland Empire - CA	43.0
82	San Diego - CA	42.8
83	Washington - DC	42.2
84	Honolulu - HI	42.1
85	San Jose - CA	41.2
86	Lakeland - FL	40.4
87	Stockton - CA	39.4
88	Bakersfield - CA	38.8
	United States	36.0

Source: CoStar Group; as of Q2 2024

There are two components to retail space per capita change; 1) population change, and 2) retail inventory levels.

Overbuilt retail markets in the US tend to be concentrated in areas that have experienced stagnant to declining population change. In general, these markets include features of post-industrial economies. In the period from 2000 to 2024, the US population grew 19.4%, while markets with high retail per capita grew slower or declined, like Dayton (population growth of +0.9%), Rochester, NY (+0.8%), Milwaukee (+3.9%), Cleveland (-4.1%), Buffalo (-1.6%), New Orleans (-7.0%), Pittsburgh (-4.0%), New Haven (+4.7%), and Hartford (+5.5%). Growth in retail inventory (even if moderate) coupled with anemic or declining population has resulted in high retail per capita in these markets.

The pandemic was also a catalyst for migration. In the period from 2018 to 2024, the US population grew 2.2%, while some markets with high retail per capita saw population growth which was slower or declined, like Dayton (+0.4%), Albany (+0.7%), Birmingham (+1.3%), Rochester, NY (-1.4%), Milwaukee (-0.8%), Cleveland (-1.3%), Memphis (-0.5%), and Buffalo (-0.9%). In fact, eight of the ten markets with the highest retail per capita also had population growth below the national average over both the 2000–24 and 2018–24 time periods.

Oklahoma City and Memphis had two of the top ten retail per capita figures in 2024. This is due to being two large US metro areas in terms of geographic area relative to their population, at 5,500 and 4,600 square miles, respectively.[5] This results in relatively lower population density. Since the population is spread out over a large land area, more retail is required. Since 2018, Oklahoma City has benefitted from population growth, and now ranks ninth, down from sixth in 2018. Memphis did not benefit from population growth and now has a higher retail per capita, currently ranked eighth, up from twelfth in 2018.

Metros with some of the lowest retail per capita are large metro areas such as Washington, D.C., Seattle, New York, and Los Angeles. In the age of e-commerce, low retail per capita does not necessarily translate into sustained low vacancy rates. Manhattan's retail vacancy and availability rates have climbed from 3.4% and 5.1% in 4Q2018 to 5.1% and 6.5% as of Q2 2024, despite its relatively light retail footprint, economic prosperity, and near record-setting tourism levels. However, Manhattan has suffered a 3.6% population decline since pre-COVID and online prices are substantially lower than high priced Manhattan retailers can offer.[6] In addition, many Manhattan landlords are financially squeezed by large mortgages and may be postponing leasing in the hope of signing a high-end restaurant chain or a bank branch. Post-pandemic, remote work, less urban foot traffic, increased crime, and homelessness have negatively impacted urban retail in many locations in the US, including Manhattan.

California metros also dominate the bottom of the list. The low per capita retail may be due to the large, concentrated population centers in the state and, perhaps, some retailers being reluctant to locate or remain in some of the higher-crime, very-high-density areas of Los Angeles. Barriers to entry, including topography, anti-growth politics, and the infill nature of a built-out environment probably contribute to the relatively light retail footprint. The Inland Empire has a relatively concentrated population for suburban areas.

In the age of e-commerce, low retail per capita does not necessarily translate into sustained low vacancy rates.

The pandemic caused accelerated migration around the US from expensive coastal metros to lower cost/tax areas in the sunbelt and intermountain west.

CHANGE IN RETAIL SPACE PER CAPITA SINCE COVID

As noted, there are two components to retail space per capita change; 1) population change, and 2) retail inventory levels. The pandemic caused accelerated migration around the US from expensive coastal metros to lower cost/tax areas in the sunbelt and intermountain west. This resulted in more excess retail space in areas that lost population and less space per capita in fast growing parts of the US Most of the increase per capita resulted from increasing or declining populations, however, there are several examples of increased inventory being the cause. Although Miami, recorded almost no population change between 2018 and 2024, its retail inventory increased 4.1% compared to 1.8% for the US Austin recorded the greatest inventory increase at 7.6%, but it was outstripped by population growth of 14.8%. Likewise, other fast-growing areas like Houston, San Antonio, Jacksonville, Boise, Dallas, Charleston, Lakeland, and Orlando added retail space but not nearly at the rate of population increases. Despite retail inventory growth, major markets like Raleigh, Austin, Charlotte, Jacksonville, Tampa, and Phoenix have a low retail per capita relative to other major markets.

Conversely, migratory trends away from more expensive coastal markets, which accelerated during COVID, caused retail per capita to rise in these markets. San Francisco moved up from ranking 71st to 58th highest retail per capita in the nation. Similarly, Los Angeles was up from 79th to 74th rank, New York (82nd to 79th), and San Jose (87th to 85th). Although rising retail per capita due to population loss is a particular challenge for these markets, retail precision-investing[7] strategies still apply.

Many post-industrial markets, which have experienced stagnating and declining population over the past 20 years, continue to become even more overbuilt due to continued outmigration. Chicago went from rank 35th to 24th, Cleveland from 11th to 7th, Rochester, NY from 7th to 5th, Buffalo from 17th to 10th and Pittsburgh from 19th to 14th, Detroit from 41st to 30th.

Border metros such as El Paso, McAllen, Laredo, and Buffalo service international shoppers from Mexico or Canada and thus justify higher retail per capita.

EXHIBIT 19: CHANGE IN RETAIL SPACE PER CAPITA, 2018–24

RANK	METRO AREA	INVENTORY % CHANGE ('18-'24)	POPULATION % CHANGE ('18-'24)	RETAIL PER CAPITA % CHANGE ('18-'24)
1	San Francisco - CA	-0.2%	-6.4%	6.6%
2	Los Angeles - CA	0.1%	-4.2%	4.5%
3	Miami - FL	4.1%	0.0%	4.1%
4	Honolulu - HI	0.6%	-3.3%	3.9%
5	New York - NY	1.5%	-2.0%	3.6%
6	San Jose - CA	0.7%	-2.8%	3.5%
7	Chicago - IL	0.6%	-2.3%	3.0%
8	Cleveland - OH	1.5%	-1.3%	2.9%
9	Rochester - NY	1.2%	-1.4%	2.6%
10	Stamford - CT	2.3%	0.1%	2.2%
11	Ventura - CA	-0.1%	-2.2%	2.2%
12	El Paso - TX	3.8%	1.9%	1.9%
13	East Bay - CA	0.0%	-1.8%	1.8%
14	Hartford - CT	1.5%	-0.2%	1.8%
15	Buffalo - NY	0.8%	-0.9%	1.8%
16	Pittsburgh - PA	0.3%	-1.4%	1.7%
17	New Orleans - LA	-0.4%	-2.0%	1.7%
18	Memphis - TN	1.1%	-0.5%	1.6%
19	Saint Louis - MO	0.6%	-0.8%	1.4%
20	Detroit - MI	0.3%	-1.0%	1.3%
21	New Haven - CT	0.9%	-0.4%	1.3%
22	Baltimore - MD	1.1%	0.0%	1.1%
23	Albany - NY	1.5%	0.7%	0.8%
24	Orange County - CA	-0.8%	-1.6%	0.8%
25	Northern New Jersey - NJ	1.9%	1.2%	0.6%
26	Long Island - NY	0.5%	-0.2%	0.6%
27	Louisville - KY	1.7%	1.2%	0.4%
28	Norfolk - VA	1.6%	1.2%	0.4%
29	Milwaukee - WI	-0.5%	-0.8%	0.3%
30	Bakersfield - CA	1.5%	1.2%	0.3%
31	Albuquerque - NM	1.6%	1.4%	0.2%
32	Birmingham - AL	1.4%	1.3%	0.1%
33	Boston - MA	1.3%	1.3%	0.0%
34	San Diego - CA	-0.9%	-0.8%	-0.1%
35	Sacramento - CA	2.2%	2.4%	-0.2%
36	Fresno - CA	1.5%	1.7%	-0.3%
37	Dayton - OH	0.0%	0.4%	-0.4%
	United States	1.8%	2.2%	-0.4%
38	Fort Lauderdale - FL	1.5%	2.0%	-0.5%
39	Philadelphia - PA	0.3%	0.8%	-0.5%
	88 Market Average	1.8%	2.5%	-0.7%
40	Portland - OR	0.9%	1.6%	-0.7%
41	McAllen - TX	4.4%	5.3%	-0.9%
42	Lehigh Valley - PA	1.0%	1.9%	-0.9%
43	Grand Rapids - MI	1.7%	2.7%	-0.9%
44	Kansas City - MO	1.9%	2.9%	-1.0%
45	Little Rock - AR	2.1%	3.1%	-1.0%
46	Providence - RI	-0.5%	0.9%	-1.3%
47	Worcester - MA	0.3%	1.6%	-1.3%
48	Cincinnati - OH	0.7%	2.1%	-1.4%
49	Washington - DC	1.1%	2.5%	-1.4%
50	Inland Empire - CA	1.7%	3.2%	-1.5%
51	Indianapolis - IN	2.7%	4.6%	-1.8%
52	Columbus - OH	2.1%	4.1%	-1.9%
53	Greensboro - NC	1.1%	3.1%	-2.0%
54	Salt Lake City - UT	1.1%	3.2%	-2.0%
55	Denver - CO	1.5%	3.6%	-2.1%
56	Colorado Springs - CO	2.1%	4.3%	-2.1%
57	Houston - TX	6.0%	8.3%	-2.1%
58	Tulsa - OK	2.1%	4.3%	-2.1%
59	Tucson - AZ	1.4%	3.8%	-2.3%
60	Minneapolis - MN	-0.2%	2.3%	-2.4%
61	Oklahoma City - OK	3.2%	6.0%	-2.6%
62	Palm Beach - FL	2.3%	5.2%	-2.8%
63	Omaha - NE	1.0%	3.9%	-2.8%
64	Las Vegas - NV	3.5%	6.7%	-3.0%
65	San Antonio - TX	5.7%	9.0%	-3.0%
66	Baton Rouge - LA	-2.2%	1.2%	-3.3%
67	Stockton - CA	1.5%	5.2%	-3.5%
68	Nashville - TN	3.9%	7.8%	-3.6%
69	Savannah - GA	3.6%	7.6%	-3.7%
70	Richmond - VA	0.7%	4.7%	-3.8%
71	Atlanta - GA	2.0%	6.1%	-3.8%
72	Seattle - WA	-0.6%	3.4%	-3.9%
73	Orlando - FL	4.6%	9.0%	-4.1%
74	Columbia - SC	0.4%	4.7%	-4.1%
75	Dallas-Fort Worth - TX	5.0%	9.7%	-4.2%
76	Charleston - SC	4.9%	9.7%	-4.4%
77	Greenville - SC	2.8%	7.8%	-4.6%
78	Phoenix - AZ	3.1%	8.3%	-4.8%
79	Tampa - FL	2.4%	8.0%	-5.2%
80	Jacksonville - FL	5.2%	10.9%	-5.2%
81	Knoxville - TN	0.1%	6.2%	-5.7%
82	Charlotte - NC	3.0%	9.4%	-5.8%
83	Austin - TX	7.6%	14.8%	-6.2%
84	Raleigh - NC	2.7%	11.4%	-7.8%
85	Boise - ID	5.1%	14.2%	-7.9%
86	Sarasota - FL	3.4%	12.6%	-8.1%
87	Fort Myers - FL	2.5%	13.4%	-9.6%
88	Lakeland - FL	4.9%	18.8%	-11.7%

Source: CoStar Group; as of Q2 2024

BUYING POWER

Another way of looking at retail supply is by comparing the product of the number of households and the real median household income (Buying Power). Buying Power is then observed on a per retail square foot basis.

Markets that have experienced the greatest growth in “buying power per retail square foot” include those with both fast-growing populations and median incomes, where retail construction has not kept up. This includes Boise (27.2%), Austin (24.5%), Phoenix (22.8%), Fort Myers (22.6%), and Jacksonville (21.8%). Many of these markets were bolstered not only by population growth, but also by median household income growth as well.

There are four markets which saw a decline in this metric, San Francisco (-2.9%), New York (-2.7%), Hartford (-2.0%), Stamford (-0.5%). Although real median household income rose in these markets, severe population losses offset this benefit. Other markets with below-average growth in “buying power per retail square foot” are markets in the Midwest, such as Cleveland (1.4%), Chicago (2.8%), Pittsburgh (3.3%), Milwaukee (3.4%), and Detroit (3.7%), which were adversely impacted by both sluggish income growth and slow-to-declining population growth.

EXHIBIT 20: BUYING POWER PER RETAIL INVENTORY SQUARE FEET, 2018–24

RANK	METRO AREA	BUYING POWER/ RETAIL INV. 2018Q4	BUYING POWER/ RETAIL INV. 2024Q2	% CHANGE
1	Boise - ID	$395	$502	27.2%
2	Austin - TX	$543	$676	24.5%
3	Phoenix - AZ	$464	$570	22.8%
4	Fort Myers - FL	$352	$432	22.6%
5	Jacksonville - FL	$372	$454	21.8%
6	Fresno - CA	$334	$403	20.6%
7	Salt Lake City - UT	$421	$500	18.9%
8	Sarasota - FL	$417	$495	18.7%
9	Charlotte - NC	$408	$480	17.7%
10	Stockton - CA	$484	$567	17.2%
11	Tampa - FL	$398	$465	16.7%
12	Orlando - FL	$365	$425	16.5%
13	Charleston - SC	$414	$481	16.2%
14	Omaha - NE	$369	$426	15.6%
15	Seattle - WA	$725	$837	15.5%
16	Providence - RI	$407	$468	15.2%
17	Albuquerque - NM	$324	$372	15.0%
18	Lakeland - FL	$419	$482	14.9%
19	Raleigh - NC	$522	$599	14.7%
20	Nashville - TN	$414	$475	14.6%
21	Denver - CO	$553	$633	14.4%
22	Palm Beach - FL	$446	$510	14.4%
23	Knoxville - TN	$309	$352	13.9%
24	McAllen - TX	$235	$268	13.9%
25	Colorado Springs - CO	$422	$478	13.3%
26	Miami - FL	$342	$387	13.2%
27	Buffalo - NY	$340	$383	12.7%
28	Savannah - GA	$322	$363	12.7%
29	San Antonio - TX	$353	$397	12.4%
30	San Diego - CA	$637	$714	12.0%
31	Tucson - AZ	$390	$435	11.5%
32	Inland Empire - CA	$459	$508	10.8%
33	Sacramento - CA	$556	$615	10.7%
34	Indianapolis - IN	$368	$408	10.7%
35	Bakersfield - CA	$408	$451	10.7%
36	Greenville - SC	$312	$345	10.6%
37	Las Vegas - NV	$392	$433	10.5%
38	Atlanta - GA	$408	$451	10.5%
39	Dallas-Fort Worth - TX	$408	$450	10.3%
40	Long Island - NY	$654	$720	10.1%
41	Fort Lauderdale - FL	$377	$415	10.1%
42	Columbia - SC	$305	$336	10.0%
43	Grand Rapids - MI	$383	$420	9.8%
44	Louisville - KY	$358	$392	9.5%
45	Orange County - CA	$651	$711	9.3%
46	Philadelphia - PA	$478	$521	9.1%
47	Richmond - VA	$427	$465	9.0%
48	Portland - OR	$572	$621	8.6%
49	Houston - TX	$372	$402	8.0%
50	East Bay - CA	$795	$858	8.0%
51	Worcester - MA	$523	$565	8.0%
	88 Market Average	$471	$508	8.0%
52	Ventura - CA	$558	$602	7.9%
53	Dayton - OH	$298	$321	7.9%
	United States	$640	$690	7.8%
54	Cincinnati - OH	$401	$432	7.7%
55	El Paso - TX	$242	$261	7.6%
56	Columbus - OH	$427	$458	7.4%
57	Saint Louis - MO	$400	$429	7.4%
58	Memphis - TN	$276	$296	7.2%
59	Kansas City - MO	$420	$449	6.9%
60	Greensboro - NC	$285	$304	6.7%
61	Los Angeles - CA	$504	$536	6.2%
62	Minneapolis - MN	$533	$566	6.2%
63	Honolulu - HI	$654	$693	5.9%
64	Albany - NY	$389	$411	5.8%
65	Washington - DC	$863	$912	5.6%
66	Boston - MA	$661	$698	5.6%
67	Little Rock - AR	$277	$291	5.2%
68	Baton Rouge - LA	$371	$388	4.6%
69	New Orleans - LA	$293	$306	4.5%
70	Lehigh Valley - PA	$419	$437	4.3%
71	Rochester - NY	$339	$352	4.0%
72	New Haven - CT	$410	$427	3.9%
73	Detroit - MI	$396	$411	3.7%
74	Oklahoma City - OK	$307	$318	3.4%
75	Milwaukee - WI	$338	$349	3.4%
76	Pittsburgh - PA	$376	$388	3.3%
77	Northern New Jersey - NJ	$600	$619	3.1%
78	Chicago - IL	$434	$446	2.8%
79	Tulsa - OK	$302	$310	2.8%
80	Norfolk - VA	$409	$418	2.3%
81	Baltimore - MD	$601	$610	1.5%
82	Cleveland - OH	$340	$344	1.4%
83	San Jose - CA	$1,040	$1,053	1.3%
84	Birmingham - AL	$298	$298	0.2%
85	Stamford - CT	$603	$600	-0.5%
86	Hartford - CT	$467	$457	-2.0%
87	New York - NY	$616	$600	-2.7%
88	San Francisco - CA	$901	$875	-2.9%

Source: CoStar Group; as of Q2 2024

Overall, this metric follows the general patterns of the retail per capita measure.

THE FUTURE OF RETAIL

Retail has gone from being the weakest asset class to a promising one due to modest inventory growth and the elimination of redundant space. Opportunities abound in growing markets in which retail has not yet caught up with an increasing population. This includes markets with low retail per capita like Raleigh, Austin, Charlotte, Jacksonville, Tampa, and Phoenix.

Increased buying power due to both household growth and median income growth bolster these markets. Additionally, overbuilding in retail in these markets may be less likely because the impact of e-commerce on retail space is more well known. Areas with barriers to building and reduced prices may afford good investment opportunities. Suburban retail has benefitted from remote work, has outperformed, and offers good investment prospects, especially in growing areas with barriers to retail building. Some have found success redeveloping existing redundant retail facilities into other uses.

Areas with barriers to building and reduced prices may afford good investment opportunities.

ABOUT THE AUTHORS

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

NOTES

[1] Rubin, Stewart. "Challenges Confronting US Retail Properties." CREFC Finance World (Summer 2014). Other Strategy & Research Group articles on the topic of retail include:
Rubin, Stewart. "Challenges Confronting Regional Malls Intensify." IRE Americas (September 2017).
Rubin, Stewart. "Overbuilt Retail – Not Evenly Distributed." (December 2018).

[2] Based on 2018 data. More update data was not available.

[3] Source: CoStar Group. Data for other nations is not available.

[4] "All Retail" is used for the metro-by-metro analysis in this whitepaper.

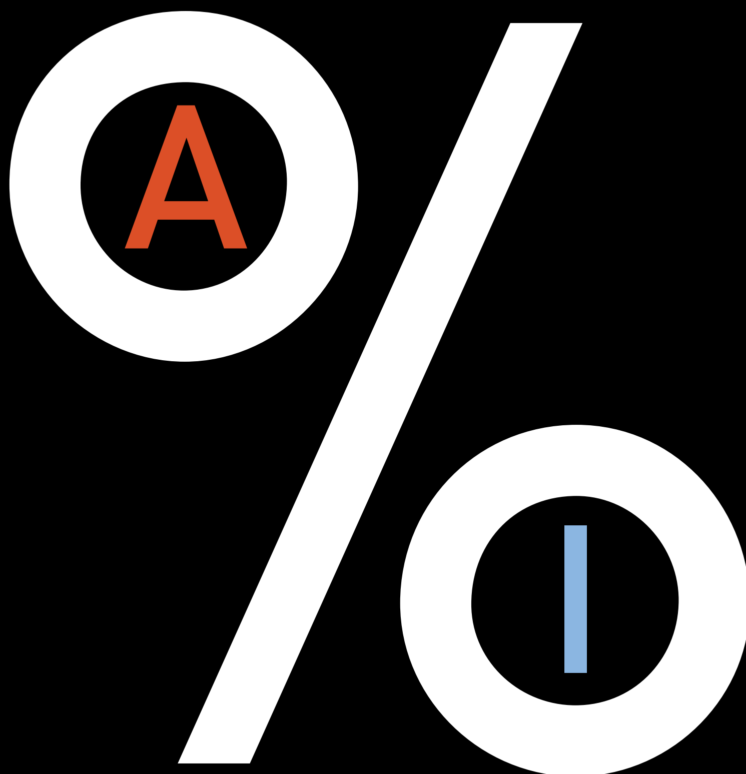
[5] with over 500,000 people. Source: US Census Bureau

[6] E-Commerce is particularly attractive in New York City since prices are very high to pay for expensive rent and labor.

[7] That is to say, investing in promising targeted areas within a metro that has less attractive fundamentals.

Opportunities abound in growing markets in which retail has not yet caught up with an increasing population.

GAME CHANGE



Jon Treitel
CFA, CAIA, Portfolio Strategist
CBRE Investment Management

The growth outlook for listed infrastructure continued to improve in 2024. Companies have been key beneficiaries of a virtuous cycle of generative AI development, and today's generative AI needs represent a game change for the utility sector.

The growth outlook for listed infrastructure continued to improve in 2024, and companies have been key beneficiaries of a virtuous cycle of generative AI development.

We have seen increased profitability for data centers, rising estimates of future capacity installations, surging forecasts for power demand, and the utility investment needed to service this demand.

With these trends in mind, this article provides a brief overview of:

- The extraordinary rise in utility earnings expectations following increased investment demand
- The need for infrastructure as an "all of the above" solution to service generative AI
- The discounted valuations for listed infrastructure and the prospects for total return

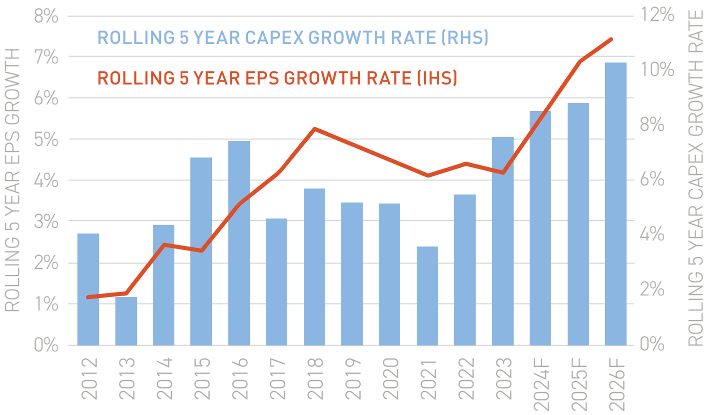
ACCELERATING UTILITY EARNINGS EXPECTATIONS

Current regulated utility earnings growth estimates are without precedent. Historically, regulated utilities in the US were moderate growers. With the retirement of coal plants, the replacement with natural gas, and the penetration of renewables, investment levels increased and growth improved *(Exhibit 1)*.

Today's generative AI needs represent a game change for the utility sector. As of September 2024, estimates for data center power demand called for a quadrupling of 2023 levels by 2030, representing more than 600 terawatt hours and 11%-12% of total US power demand.[1]

With associated levels for utility power demand growth rising, we expect a doubling in US utility investment by 2026 compared to 2015 levels. With higher investment, we expect utility earnings to accelerate. Notably, our forecasts do not consider a dramatic increase in the profitability or regulated returns (based on costs of capital) allowed for utilities. These should have an additional upward bias in a future period where long-term interest rates average higher than in the previous decade; we have already seen an upward bias for utility authorized returns on equity (ROEs) in 2024 compared to 2023 and 2022 levels.

EXHIBIT 1: RISING UTILITY GROWTH; EARNINGS FOLLOWS INVESTMENT



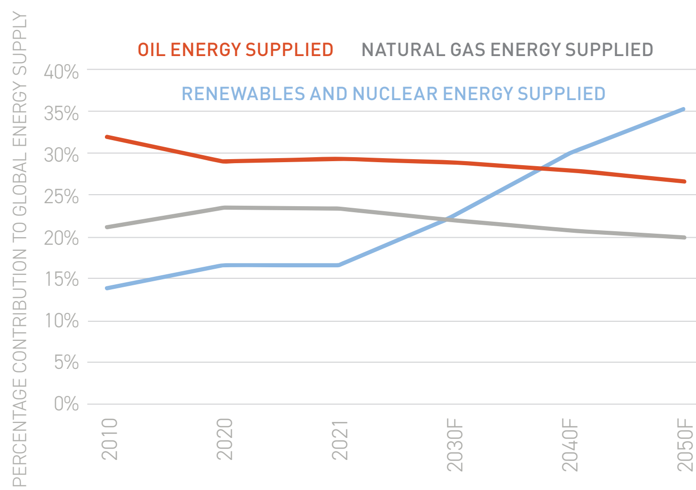
Source: CBRE Investment Management[2]

At the utility level, planning for data center power capacity is extending into the latter half of this decade and beyond.

We see average long-term utility growth estimates as having the potential to reach a high single digit rate in the next two years. This is a dramatic change from a decade ago. We also see the potential for both upward revisions and an increased duration to these growth expectations.

At the utility level, planning for data center power capacity is extending into the latter half of this decade and beyond. Today, we see evidence of utilities rationing current power distribution to data centers pending the start-up of new transmission. Others have noted flagship assets as constrained by 2028, reduced transmission capacity through 2030, or are seeking "take-or-pay" contracts to support new transmission infrastructure. In the current environment, we clearly see a likelihood for enhanced utility investment over an extended period.

EXHIBIT 2: RENEWABLES, NUCLEAR AND TRADITIONAL HYDROCARBONS NEEDED TO MEET FUTURE ENERGY SUPPLY NEEDS



Source: CBRE Investment Management IEA (2022), World Energy Outlook 2022, IEA, Paris.[3]

INFRASTRUCTURE AS AN "ALL OF THE ABOVE" SOLUTION

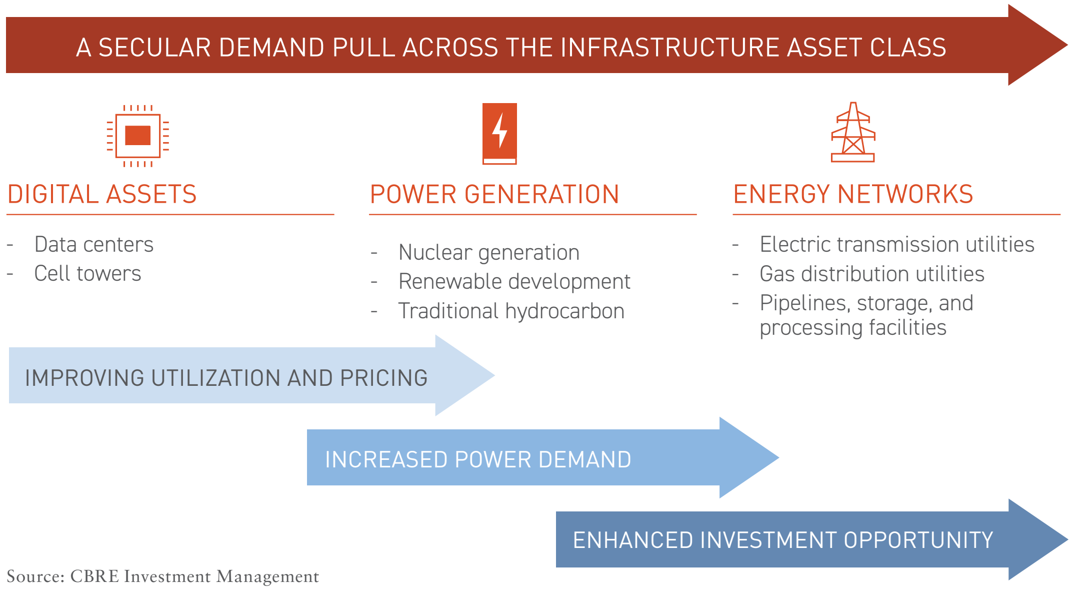
We see diverse forms of energy, and diverse sectors across infrastructure, as needed to service generative AI. In the last several months, announcements have been made regarding the restart of nuclear generation for the first time in US history; for example, Microsoft and Constellation Energy announced in September a partnership to restart the Three Mile Island nuclear facility, while Holtec Energy is working to restart the Palisades plant in Michigan. The Three Mile deal includes a long-term power purchase agreement from Microsoft.

Even before the rise of generative AI, we expected nuclear energy, renewable generation and traditional hydrocarbons capacity to assist in meeting future global demands. The need for a comprehensive energy supply is only enhanced in a post AI world.

We believe the beneficiaries of generative AI are well placed across the infrastructure asset class. Communications infrastructure companies are seeing stronger growth alongside the benefits of moderately lower borrowing rates. Contracted energy generation and renewable development are prospering in a new upcycle, while the need for energy transmission and transport remains strong.

When rolled up to the asset class level, we see infrastructure's earnings are trending at approximately 300 basis points above their historic average, driven by infrastructure as an "all of the above" solution for generative AI.

EXHIBIT 3: INFRASTRUCTURE AS AN "ALL OF THE ABOVE" SOLUTION FOR AI



Source: CBRE Investment Management

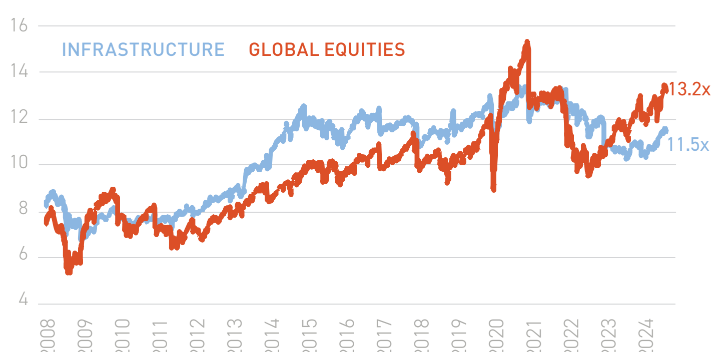
With the contributions of strong income yields, above-average earnings growth, and discounted valuations, we are optimistic that the asset class will eclipse the historical 8%-10% total returns it has generated over the course of the last decade.

COMPELLING VALUATIONS AND POTENTIAL TOTAL RETURNS

The above-average earnings growth of listed infrastructure is a key consideration in its ability to generate above-average returns in the years ahead. The starting point for investors—that of current discounted valuations—is also key.

As of Q3 2024, the earnings multiple of listed infrastructure still trades at a large discount to broad equities. The asset class offers high-income, discounted valuations to private markets and is one of the larger historical beneficiaries of cuts in global central bank borrowing rates. With the contributions of strong income yields, above-average earnings growth, and discounted valuations, we are optimistic that the asset class will eclipse the historical 8%-10% total returns it has generated over the course of the last decade.

EXHIBIT 4: EV/EBITDA: GLOBAL INFRASTRUCTURE VERSUS GLOBAL EQUITIES



Source: CBRE Investment Management, iShares MSCI ACWI ETF, SPDR S&P Global Infrastructure ETF, ProShares Dow Jones Brookfield Global Infrastructure ETF, as of 10/31/2024.[4]

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Jon Treitel is the Portfolio Strategist for Listed Real Assets and a Senior Director at CBRE Investment Management. He leads listed consultant relations and supports CBRE IM client solutions and distribution partners while overseeing listed real asset thought leadership and related solutions analyses.

NOTES

[1] McKinsey and Company, "How data centers and the energy sector can sate AI's hunger for power," September 2024; one terawatt hour is enough to provide fully power 70,000 homes for a year, including heating and cooling.

[2] Capex forecasts 2024-2025 per Edison Electric Institute; 2026 per CBRE Investment Management based on public company disclosures and informed by rate base growth expectations. Earnings forecasts per CBRE Investment Management as of September 2024. Earnings forecasts are based upon company-level forecasts, which are based upon company disclosures and CBRE IM analyst estimates for capital expenditures, equity ratios, regulated returns on equity, and other variables which can affect the earnings power of public utilities. Forecasts and any factors discussed are not a guarantee of future results.

[3] Information is the opinion of CBRE Investment Management, which is subject to change and is not intended to be a forecast of future events, a guarantee of future results or investment advice. Forecasts and any factors discussed are not a guarantee of future results.

[4] Information is the opinion of CBRE Investment Management, which is subject to change and is not intended to be a forecast of future events, a guarantee of future results or investment advice. Forecasts and any factors discussed are not a guarantee of future results.

[5] Information is the opinion of CBRE Investment Management, which is subject to change and is not intended to be a forecast of future events, a guarantee of future results or investment advice. Forecasts and any factors discussed are not a guarantee of future results.

REVIEWER RESPONSE

The author presents an intriguing case for the tailwinds expected to benefit listed infrastructure in the coming year, tying this growth to advancements in generative AI and the corresponding demand for electrical power generation, transmission, and data centers. This perspective highlights a compelling investment opportunity in an evolving market.

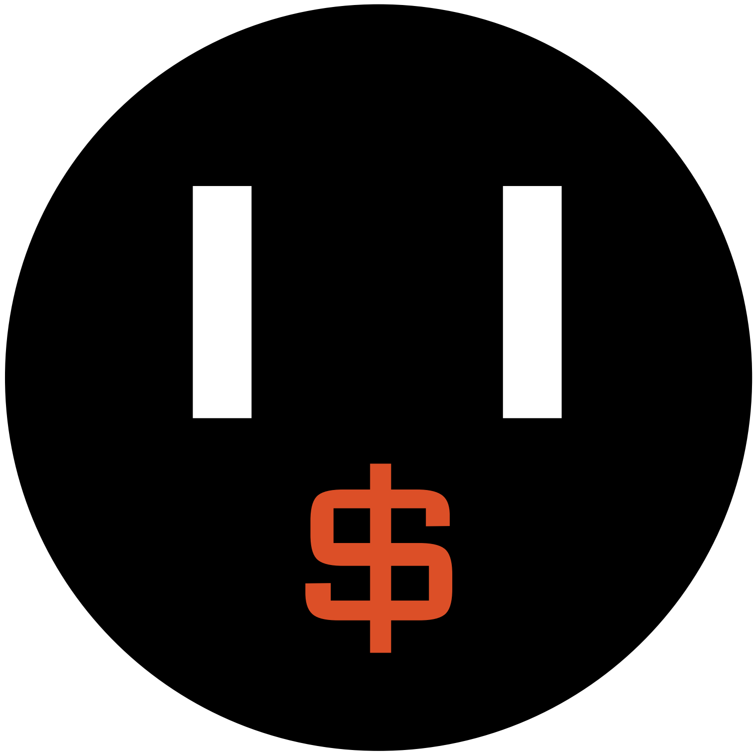
While the article provides an engaging overview, it opens the door to several questions that could deepen the analysis. For instance, on the demand side, it would be interesting to explore how geography influences the siting of data centers. Is proximity to certain cities, power sources, or cooling a more critical factor? Could data centers even be located outside the continental US? Additionally, the evolving landscape of AI raises questions about how upcoming technological advancements—such as the next generation of chips—might reshape energy requirements or data center design.

The complexities of the supply side also offer an avenue for further discussion. The politics and regulations surrounding power generation, transmission lines, and data centers could significantly influence investment opportunities. What will be the impact of Biden's Executive Order on Advancing US Leadership in Artificial Intelligence Infrastructure? Will the limitations on exporting AI chips remain in force for the foreseeable future? Will the next administration be more aggressive or more conservative on these fronts? How might these factors create either tailwinds or headwinds for the listed infrastructure sector? Moreover, addressing the timing challenges between the immediate demands of AI and the longer lead times for building new power infrastructure would add valuable insight.

For investors, the article could be an opportunity to delve deeper into the distinctions between various types of power generation—green energy, nuclear, and traditional coal or gas—and their unique investment profiles. These distinctions can be critical for investors operating under mandates that prioritize clean energy sources. Furthermore, while the author notes discounted valuations in listed infrastructure, expanding on the reasons behind these relative discounts could offer greater understanding of the opportunity. Are these valuations signaling risks, or do they reflect exuberance in other market sectors?

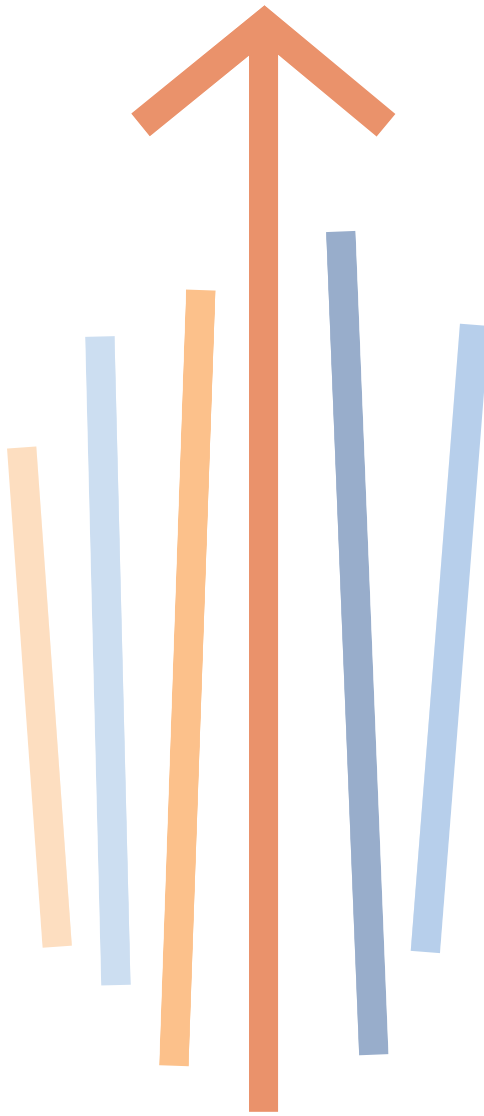
In sum, the article successfully sparks interest in a promising sector but leaves room for further exploration. With more detail on demand, supply, and investment considerations, it could provide an even more comprehensive guide to navigating this compelling investment opportunity.

– Peter Grey-Wolf
Vice President, Wealthcap
Member, Summit Journal Editorial Board



The above-average earnings growth of listed infrastructure is a key consideration in its ability to generate above-average returns in the years ahead.

FOR THE TREES



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Already leveraged for other commercial real estate asset types, mass timber has the potential to revolutionize industrial real estate development by offering sustainable, durable, and efficient construction solutions.

With its alignment to corporate environmental, social, and governance (ESG) goals and positive environmental impact, this article outlines how mass timber can represent an innovative pathway for modern and future construction and development in the industrial real estate sector.

Already leveraged for other commercial real estate asset types, mass timber has the potential to revolutionize industrial real estate development by offering sustainable, durable, and efficient construction solutions.

THE RISE OF MASS TIMBER AND INDUSTRIAL REAL ESTATE

After a long century of steel and concrete construction dominance, mass timber construction innovation has emerged as a revolutionary construction method, with proven load-bearing capabilities and ability to be used in various applications beyond traditional wood construction.

Its strength and durability, superior fire rating, usability across spans/grids, and speed of construction make it suitable for large-scale commercial real estate, including multi-story offices, industrial warehouses, and even military bases. Mass timber components are prefabricated and can be manufactured offsite, reducing construction timelines, cutting labor costs and minimizing on-site disruptions. Moreover, it offers a sustainable alternative to conventional materials like steel and concrete, which have significant environmental footprints.

The mass timber market is experiencing rapid growth, driven by advancements in technology, acceptance in regional building codes, and a growing emphasis on sustainable building practices. Unlike traditional lumber, mass timber products are created by bonding multiple layers of wood together to form large, structural components. Innovations in cross-laminated timber (CLT), glue-laminated timber (glulam), and other engineered wood products have made mass timber a viable option for a wide range of applications.

Mass timber also boasts construction safety and reliability, helping to improve lender confidence in financing mass timber projects, furthering the adoption of mass timber by developers and also boosting investor support. As of September 2024, there were 2,253 mass timber buildings in progress or completed in the US, including a growing number of factory/industrial projects.[1] These projects are concentrated along the coasts, with Washington, Oregon, California, and Massachusetts accounting for more than half of all projects since 2013, but adoption is spreading to Texas, Colorado, and Illinois.[2]

While mass timber is predominantly used in residential and office construction today, it has a growing potential for applications in other construction. Industrial, in particular, is a natural extension for developers, partly due to the recognized economic and environmental benefits of mass timber construction, and partly due to the reality that the sector is challenged by aging stock and the need to develop more nimble, state-of-the-art buildings.

E-commerce infiltration into the industrial real estate sector, coupled with supply chain reconfiguration, is shifting the way industrial properties are used, triggering major pivots in the specifications of industrial stock. Tenants are seeking newer, state-of-the-art facilities that can accommodate technological innovation in the management, storage, and distribution of goods. Unsurprisingly, tenants are increasingly exiting older facilities in favor of more advanced ones, enabling footprint efficiency and consolidation in many instances. Nearly 50% of leases executed in the second quarter of this year were for Class A space, indicating a strong preference for high-quality, advanced facilities.[3]

Over the last decade, the industrial tenant base has become more dominated by large multi-national corporations, many with corporate strategies and initiatives driving occupiers to make real estate leasing decisions through an ESG lens; considering environmental sustainability, employee wellbeing, and satisfaction, and talent retention.

As industrial real estate developers look to meet the demand for state-of-the-art buildings, and the construction industry responds to investors' desire to achieve carbon-reduction goals, sustainable designs are incorporating wood as the building material.

The mass timber market is experiencing rapid growth, driven by advancements in technology and a growing emphasis on sustainable building practices.

THE CONVERGENCE OF MASS TIMBER AND INDUSTRIAL REAL ESTATE

As a relatively new design and construction concept in the United States, mass timber use within industrial real estate has a few notable use cases, and an accompanying set of viability and benefits, including:

Efficiency: Prefabricated mass timber components enable faster on-site assembly, reducing construction schedules by around 25%.[4] Faster construction timelines and cost savings are typically considered the main value proposition for wood use in development.

Sustainability: The environmental footprint is significantly lower by substituting wood for concrete and steel, making it an attractive option for sustainable construction. Using mass timber and other wood technologies in 7-15 story buildings is estimated to be equivalent to taking more than two million cars off the road for a year.[5]

Aesthetic Appeal: The natural finish of wood can enhance tenant experience and building design. Multifamily buildings featuring mass timber can often command higher rents due to their unique aesthetic appeal.[6]

Regulatory Momentum: Mass timber offers durability and fire resistance comparable to steel and concrete.[7] US building codes in nineteen states and eight major Texas cities now allow mass timber structures up to eighteen stories, reflecting increasing acceptance.[8]

Economic volatility and emphasis on ESG within real estate, along with the critical need to make the most economical design decisions, may lead to increased adoption of mass timber construction for industrial development, especially for multi-story warehouses and urban logistics hubs where land is limited.

As the technology and production techniques for mass timber mature, economies of scale can make mass timber increasingly cost-effective compared to steel and concrete. Coupled with the inflationary and supply chain issues that have pushed input prices for new warehouse construction up 44% over the last five years, as measured by the producer price index, mass timber could become the preferred choice in terms of cost and sustainability.[9]

The use of mass timber in industrial construction is projected to grow by around 8% annually over the next decade, driven by increasing acceptance and cost competitiveness.[10] Cross-laminated timber consumption in North America is expected to grow more than 40% annually, compared to 15% in the EU through 2027, indicating rising demand for timber products and benefiting both forestry and construction industries.[11]

INDUSTRIAL PROJECTS FEATURING MASS TIMBER

1. An aerospace manufacturer integrated mass timber into their 185,000-square-foot, two-story industrial warehouse completed in 2023. Steel delays catalyzed the use of mass timber, providing both speed and sustainability. The supplier provided 2.215 million board feet of lumber and manufactured the necessary glulam beams, columns, and CLT and GLT panels for the attached office, completing the project within eighteen months. The trees used for the mass timber components were sustainably harvested from Pacific Northwest forests.[12]

2. A 28,000-square-foot high-density library storage facility, completed in 2018, is the first in Arkansas and the first in middle America to use CLT structural systems. Originally designed as a concrete block building, the switch to a mass timber frame and CLT walls saved taxpayers $1.1 million. Sourced from sustainably harvested local timberlands, the project achieved LEED gold certification and won an AIA Arkansas Honors Award in 2019.[13]

Mass timber construction can store carbon making it an attractive option for developers and tenants aiming to reduce their carbon footprint and significantly offset emissions, particularly in industrial buildings with large environmental impacts.

EXHIBIT 1: EXAMPLE OF A 185,000-SQUARE-FOOT, TWO-STORY INDUSTRIAL WAREHOUSE, COMPLETED IN 2023

Source: WoodWorks

CONSTRUCTION CONSIDERATIONS

The development of mass timber projects is still limited in acceptance within the network of lenders, investors, contractors, and subcontractors, given specialized knowledge required to implement, a lack of data and case studies, and a nascent supply chain. This type of construction requires extensive up-front planning, involving mechanical, electrical, and plumbing representatives early in the design process, resulting in increased costs that may arise from working with subcontractors and code officials unfamiliar with mass timber construction. Likewise, the production of CLT in North America is still developing, forcing projects to utilize imported CLT from Europe. However, global companies are establishing production hubs in North America, reducing dependence on European imports, as North America's vast timberlands hold promise to potentially provide a steady supply of sustainably managed timber.

Developers' increased experience with mass timber is expected to reduce project costs further beyond the initial cost-savings of using mass timber, and expand the material's viability for industrial construction, while localized manufacturing efforts in the US and Canada help minimize shipping costs and the associated carbon footprint.

From an environmental standpoint, studies show mass timber construction can store carbon—each cubic meter locking in about one ton of CO_2—making it an attractive option for developers and tenants aiming to reduce their carbon footprint and significantly offset emissions, particularly in industrial buildings with large environmental impacts.[14]

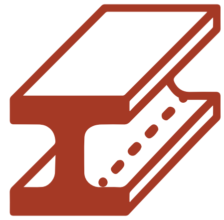
EXHIBIT 2: CARBON FOOTPRINT COMPARISON: TIMBER VERSUS OTHER BUILDING MATERIALS

TIMBER

1m³ sequesters
1 metric tonne of Co2

IRON

1 tonne of manufactured
cement produces about
0.47 tonnes of Co2



CEMENT

1 tonne of manufactured
iron produces about
0.6 tonnes of Co2

Source: Mass Timber Institute based at the University of Toronto, as of December 2024.

The growth of mass timber use in industrial real estate has the potential to revitalize local economies through job creation, business investment, and productivity, particularly in rural areas where timber is a major resource. Increasing demand for timber products could create jobs in forestry, manufacturing, and construction, thereby balancing urban economic benefits with the environmental benefits of sustainable forestry practices.

WHAT'S NEXT FOR TIMBER?

With supportive regulatory changes, increasing cost-competitiveness, and demand driven by ESG commitments—combined with North America's well-integrated supply chain that leverages local resources—the future of mass timber in industrial real estate is positioned for meaningful growth.

The intersection of these sectors represents a dynamic shift toward more sustainable, efficient, and regionally beneficial construction practices. As the industry continues to evolve, mass timber could play a pivotal role in creating a more sustainable and efficient built environment, with transformative potential in the industrial real estate sector.

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NOTES

[1] "Woodworks.org as of November 2024 https://www.woodworks.org/resources/mapping-mass-timber/

[2] Forest Economics Advisors, as of December 2022.

[3] CBRE Capital Markets Update as of August 2024.

[4] American Wood Council, as of December 2024.

[5] Mass Timber Institute based at the University of Toronto, as of December 2024.

[6] Dunn, C. 5 Legitimate Reasons for Using Mass Timber in Multifamily Construction, as of 2024, June 2024.

[7] Mortimer, A. "Mass Timber vs Steel: The Future Is Hybrid." As of August 2024.

[8] Status of Building Code Allowances for Tall Mass Timber in the IBC - WoodWorks | Wood Products Council, as of December 2024.

[9] BLS, Producer Price Index by Industry: New Warehouse Building Construction, as of October 2024.

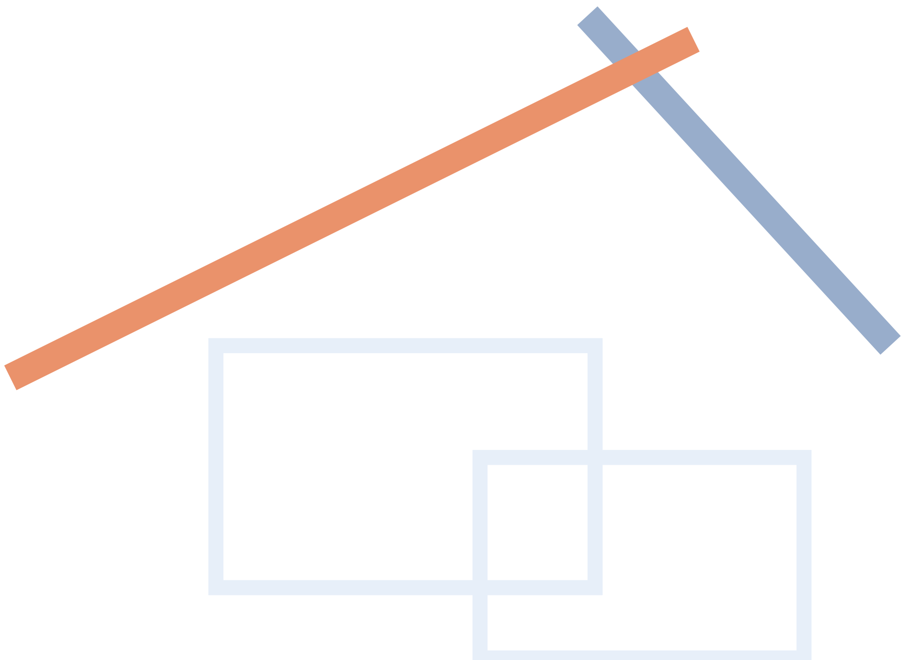
[10] The Brainy Insights. Mass Timber Construction Market Report, as of July 2024.

[11] Forest Economics Advisors, as of December 2022.

[12] WoodWorks. Aerospace manufacturer uses mass timber to meet speed, sustainability goals, as of December 2024.

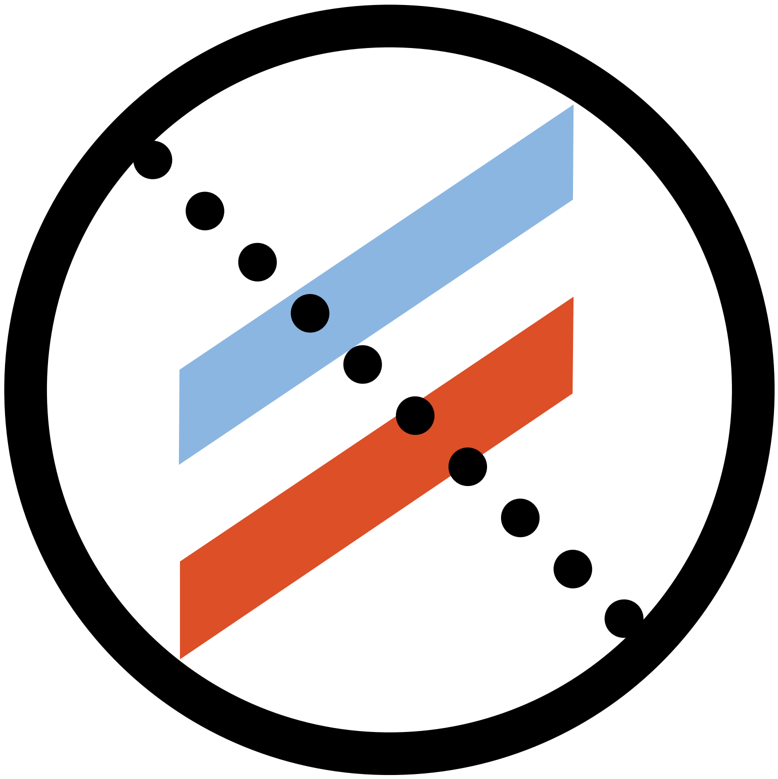
[13] WoodWorks. U of Arkansas Library Storage Facility, as of December 2024.

[14] Mass Timber Institute based at the University of Toronto, as of December 2024.



As the industry continues to evolve, mass timber could play a pivotal role in creating a more sustainable and efficient built environment, with transformative potential in the industrial real estate sector.

BORDER INDUSTRIAL



Dags Chen, CFA
Managing Director, Head of US Real Estate Research and Strategy
Barings Real Estate

Lincoln Janes, CFA
Director of US Real Estate Research and Strategy
Barings Real Estate

It is tempting to pass on a strategy that appears right in the crosshairs of a trade policy regime change, yet the degree to which border port industrial markets have been undersupplied has been persistently dramatic and becoming more so.

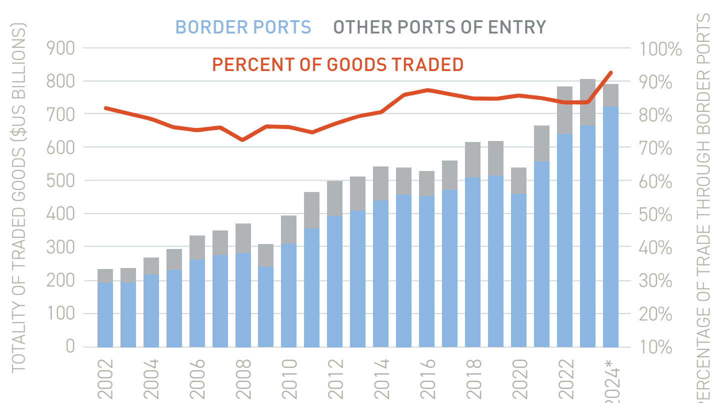
The combined value of goods traded between the US and Mexico reached $808 billion in 2023 according to the Bureau of Economic Analysis *(Exhibit 1)*. That is 2.5 times more than the value of aggregate goods traded between the two countries in 2002.

And in 2019, Mexico surpassed both Canada and China in terms of goods traded. Even as protectionist rhetoric between the two nations has ramped up since the November 2024 elections, Mexico's status as America's largest and most important trading partner is unlikely to change given the mutually beneficial relationship. With the return of Donald Trump to the White House and his vociferous endorsement of tariffs to correct the perceived injustices created through global trade, investors and businesses are now concerned that the incoming administration will tip the scales towards self-inflicted and self-defeating economic wounds.

The concept of "reshoring" is an extension of this same logic. Reshoring (also known as on-shoring or near-shoring) references the (re)location of manufacturing and production activities to a firm's country of domicile. Ironically, Trump's first presidency spurred a reshoring "renaissance" that continues to the present. In practice, reshoring can take on different manifestations. As it concerns American industry, currency, wages, and business costs make the prospect of fully repatriating manufacturing operations for domestic firms cost prohibitive over the near-term—and aging demographics create long-term headwinds. In many instances, firms have moved higher value-add segments of their supply chains back to the US while keeping or moving other segments to foreign countries such as Vietnam, Malaysia, China, Canada, and Mexico. Trump has explicitly targeted these half-measures.

Leading up to his reinstatement as president, Trump has pledged 25% tariffs on goods from Mexico and Canada and an "additional 10%" on imports from China until issues related to drugs and illegal border crossings are resolved. The proposed Mexico and Canada tariffs would violate the terms of Trump's USMCA trade agreement, which he authored during his first presidency, ahead of its July 2026 review. Mexican and Canadian leaders' initial responses were mixed but generally conciliatory. Clearly, both Canada and Mexico are prepared to make concessions, but their messaging also couched the potential for retaliation.

EXHIBIT 1: AGGREGATE VALUE OF GOODS TRADED THROUGH US MEXICO LAND PORTS



Sources: Bureau of Economic Analysis, Census Bureau as of October 2024. Data for 2024 is annualized based upon figures through October 2024.

Real estate investors are also concerned around the multifaceted implications of a more protectionist trade regime in the US. Possible impacts include development delays, higher materials and equipment costs, lower tenant demand as well as higher inflation more broadly creating additional upward pressure on borrowing costs. Property investors need to make investment decisions that span multiple years, and given the uncertainty around trade policy, many would prefer to pause as they assess what the next four years could bring.

In 2019, Mexico surpassed both Canada and China in terms of goods traded.

PORT MARKETS ALONG THE US MEXICO BORDER

Real estate investment along the US-Mexico border is relatively nascent. Historically, 83% of total goods trade between the US and Mexico comes through four border ports (or "districts," as described in the parlance of the US Census Bureau). These four districts are comprised of the industrial metros of Brownsville, Laredo, McAllen, and El Paso, Texas; Nogales, Arizona; and San Diego, California. Combined, these industrial markets encompass approximately 400 million square feet of industrial space. For comparison, Chicago has 1,400 million square feet of stock, making it the largest industrial market in the nation. Relatively, there is not a lot of warehouse space in and around ports of entry along the US and Mexican border.

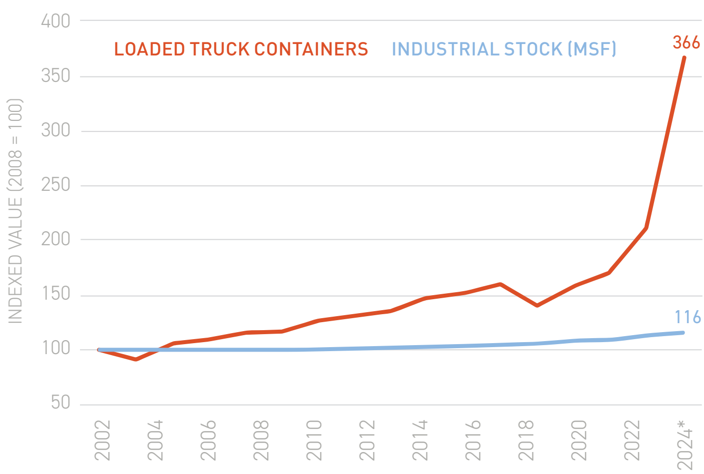
Industrial markets accompanying ports of entry do not need to be sizeable. Savannah, the fourth busiest coastal port in the continental US, has an industrial market of 136 million square feet, versus nearby Atlanta with nearly 900 million square feet of inventory. Traditionally, goods move through ports directly to primary warehouse markets largely by interstate and rail. But increasingly, ports are seen as an intermediate stop for goods on the way to their destination. The post-pandemic reconfiguration of supply chains has prioritized optionality and resiliency through redundancy versus simply trying to achieve the greatest cost efficiencies.

Savannah provides a helpful case study around how a port industrial market can evolve. From 2008 to 2024, Savannah's industrial stock rose by 174% cumulatively, versus 19% for the national industrial market. While the market has experienced higher than average vacancy due to the accelerated pace of construction, warehouse rent growth in Savannah has outpaced the US even as industrial rents nationally rose at their fastest pace ever following pandemic lockdowns.

While the stock of industrial space across US Mexico border ports has been rising for years, they have lagged the national pace. From 2008 to 2024, the aggregate amount of space across border ports has increased by only 16% versus 19% nationally.

In 2008, 2.7 million loaded truck containers crossed the border; by the end of 2024, it would be close to 10 million—a 266% increase, or nearly seventeen times the pace by which industrial stock has expanded *(Exhibit 2)*. The degree to which Southern US border port industrial markets are undersupplied versus the volume and the value of the products that pass through them has become almost comically stark. Given the uncertainty around how trade policy will change and how and when those changes will be implemented, one could easily imagine a scenario in which demand for warehouse space in border ports could dramatically increase in coming years—particularly along trade routes with goods that require assembly or other sources of value-add.

EXHIBIT 2: BORDER PORT INDUSTRIAL STOCK VERSUS LOADED TRUCK CONTAINERS CROSSING BORDER (INDEXED VALUES)



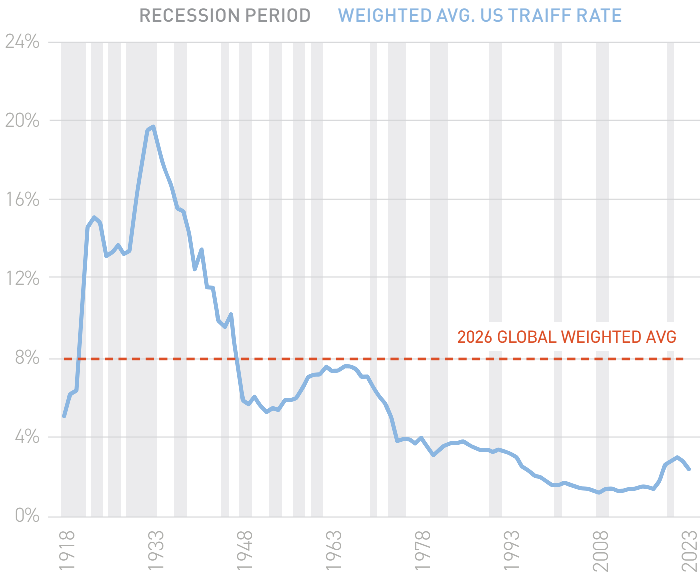
Sources: Costar, Bureau of Transportation Statistics as of October 2024.
Data for 2024 is annualized based upon figures through October 2024.

REASONS FOR UPSIDE TO THE OUTLOOK FOR US MEXICO TRADE

Market consensus appears to coalesce around a baseline scenario of manageably higher tariffs and the initial Trump duty announcements as a starting point for negotiations. Bloomberg forecasts overall US import taxes will increase from around 3% in 2024 to around 8% in late 2026, mainly due to China (Exhibit 3). In addition, potential tariff increases are expected to be targeted and used to extract specific concessions. A trade war between the US and it's top three US trading partners—Mexico, Canada, and China—is unsustainable because it would severely undermine economic growth, price stability, and employment.

Among other benefits, trade with Mexico has a greater association with supporting US jobs than China through bilateral manufacturing as around 40% of the content from Mexican imports are produced or finalized in the US compared to around 4% from China, based on Wilson Center analyses. Although posturing and brinksmanship between the two nations is likely to continue, there are long-lived and entrenched factors that compel both to maintain mutually beneficial trade relations.

EXHIBIT 3: WEIGHTED AVERAGE US IMPORT DUTIES AS A PERCENT OF IMPORTS



Sources: USDT, NBER, Federal Reserve

Around El Paso alone, $7.8 billion of infrastructure spending has been proposed between 2024 through 2028.

Structural Cost Advantage: Aging US demographics and a low unemployment rate point to lack of slack in the workforce whereas Mexico's population growth and lower labor costs provide production capacity and price efficiency. The Mexican peso has continually weakened against the American dollar for decades. The MXN/USD exchange rate has fallen to 0.0494 in December 2024 from 0.3618 in Q1 1990. The CAD/USD exchange rate in contrast has only declined from 0.8548 to 0.7057 over that same period.

From 2006 to 2021, Mexico's cost competitiveness has improved marginally by 2.3% while China's cost competitiveness has declined by 12.4%, according to Boston Consulting's Global Manufacturing Cost-Competitiveness Index. The cost advantage that Mexico possesses over both China and Canada has been built up over decades, and supply chains for American industry increasingly traverse the Mexican border. Even as the next administration prepares to start its term, countless corporate executives are plying Trump's ear about the criticality of trade with Mexico.

In 2008, 2.7 million loaded truck containers crossed the border; by the end of 2024, it would be close to 10 million.

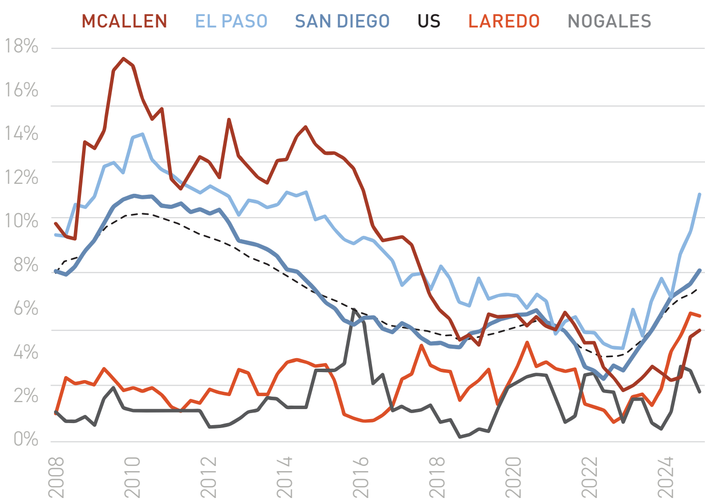
Public Private Investment and Border Security: One of the reasons behind Mexico's favorable cost structure is due to past and future investment in transportation infrastructure. Around El Paso alone, $7.8 billion of infrastructure spending has been proposed between 2024 through 2028. US foreign direct investment into Mexico, whose GDP activity overwhelmingly is related to US export production, has also risen in the years following the pandemic. Training has also been a focus of the Mexican government and global firms to improve the productivity of the country's domestic labor force. Additionally, despite repeated incriminations over illegal border crossings and drug trafficking, there have been marked improvements in safety and crime reduction in and around the border over the past year. With greater media focus and public sector budget allocation to monitoring crossings, border security should continue to improve.

Financial Markets: Despite the "Republican sweep" in the 2024 presidential and congressional elections, financial markets will be a referendum on the unintended consequences of the Trump administration's policy actions. While public equity markets have moved higher on the promise of lower headwinds for corporations from taxes and regulation following the November election, the 10-year Treasury yield has moved up by around 70 basis points from mid-September through early December 2024 on account of the risk of higher inflation and more deficit spending. Trump often associates his performance with market trends, and adverse effects due to trade policy resulting in accelerating inflation and tighter financial conditions should restrain the administration from the worst excesses.

Capital flows into border port industrial markets have been subdued especially when considering how enthusiastically institutional investor appetite has grown for the industrial property sector over the past decade. It is tempting to pass on a strategy that appears right in the crosshairs of a trade policy regime change, yet the degree to which border port industrial markets have been undersupplied has been persistently dramatic and becoming more so. As critical as US-Mexico trade has become even since the last Trump administration, there is justification to think that disruption to trade policy will be marginal coming from a "pro-business" President but represents an added source of return. Smaller markets, however, can in the near-term become overrun by development spurred by capital flows, so monitoring supply cycles is critical to any longer-term investment exposure *(Exhibit 4)*.

Despite repeated incriminations over illegal border crossings and drug trafficking, there have been marked improvements in safety and crime reduction in and around the border over the past year.

EXHIBIT 4: HISTORICAL INDUSTRIAL VACANCY



Source: Costar as of December 2024

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Dags Chen is Managing Director and Head of US Real Estate Research and Strategy, and Lincoln Janes, CFA, is Director of US Real Estate Research and Strategy for Barings Real Estate, one of the world's largest diversified real estate investment managers, with $48.18 billion AUM, offering a broad spectrum of solutions across private real estate debt and equity.

NOTES

[1] The BCG Global Manufacturing Cost-Competitiveness Index estimates shifts in direct costs for the world's 25 leading manufacturing exporting economies in four dimensions: manufacturing wages, productivity, energy costs, and currency exchange rates.

REVIEWER RESPONSE

Evolving strength of US- Mexico goods trade about to face a round of US tariff-related disruptions. Does it represent an industrial investment opportunity on the US side of the border? An interesting and insightful article that raises the possibility and provides, at a high level, rationale and analysis. It also introduced me, and I suspect other readers, to the extensive web-based, customizable Bureau of Transportation border crossing statistics.

The thesis is based partly on the premise that border crossing (ports) are increasingly seen as an intermediate stop for goods on the way to their destination rather than a drive by. It would be great to have support (references and/or data) for this claim. This is connected to a growing demand for flexibility and optionality on the part of manufacturing tenants. Does this desired optionality on the part of tenants imply the need for industrial product that is more operational in focus and with shorter-term leases having expansion and contraction options built in? What is the implication for warehouse/distribution versus manufacturing/ assembly? I am also wondering if the uncertainty is about to be heightened to levels that imply the 'option to wait' is very valuable until things are negotiated both south and north of the border.

Reinforcing the potential opportunity is the strong growth in loaded truck containers relative to the stock of industrial property in port markets. While suggestive it is hard to translate this into demand without more support of the intermediate stop for goods argument above. In addition, the incredible surge in 2024 container flows that drives the "comical gap" *(see Exhibit 2)* would seem to need explanation. Could it be a 1 year outlier and if so how does that affect the thesis?

As a next step it would be nice to get more into the weeds of the local markets. The article finishes with vacancy rate times series for select border markets. Would be terrific to have expanded information on size, type and year built by metro. I think it would be particularly useful to connect market (port) level versions of *Exhibit 2* (industrial stock and truck container flows) to market level industrial dynamics *(Exhibit 4)*.

– Jim Clayton, PhD

Professor and Timothy R. Price Chair Director,
Brookfield Centre in Real Estate & Infrastructure
York University Schulich School of Business

Member, Summit Journal Editorial Board

Mexico's status as America's largest and most important trading partner is unlikely to change given the mutually beneficial relationship.

RESILIENCE AMIDST UNCERTAINTY

Asaf Rosenheim
Director
Profimex

In the face of geopolitical disruption, global diversification, including focused investment into US real estate, is more than a defensive move—it's a pathway to resilience and growth.

In times of war, when local economies face uncertainty and instability, the need for resilient investment strategies becomes paramount. For overseas investors, particularly those in regions affected by conflict, safeguarding assets and ensuring steady returns often requires looking beyond their borders. The US real estate market emerges as a compelling choice—a beacon of stability and opportunity amidst turmoil.

Real Estate in the US is not just a safe haven; it also represents a strategic pivot for diversifying portfolios and mitigating risks tied to local upheavals. Israeli and Ukrainian investors, both deeply affected by regional conflicts, have demonstrated the advantages of this approach. As Israeli investors channel significant capital into American properties, they find refuge in a market characterized by robust performance, legal protections, and promising growth. Ukrainian investors, too, navigate challenges by seeking safer international investments while planning for domestic recovery.

This dynamic underscores a critical lesson: in the face of geopolitical disruption, global diversification is more than a defensive move—it's a pathway to resilience and growth.

As conflicts reshape economies, the ability to adapt and invest in stable foreign markets, such as the US real estate sector, ensures long-term security and positions investors to capitalize on future opportunities. For those navigating the uncertainty of war, these strategies serve not only to protect wealth but also to empower recovery and optimism for the years ahead.

THE GEOPOLITICAL LANDSCAPE

Geopolitical conflicts have a significant influence on financial markets. Real estate markets are no exceptions in this regard, although the latter has been viewed as bastions of stability that can withstand economic turbulence.

With that being said, for investors situated in areas directly affected by warfare, certain risks can be tremendous, especially in regions that are prone to geopolitical instability.

The aim of this article is to explore how real estate investors in Israel and Ukraine—two countries that have had to face conflicts in recent times—adapted their strategies. By analyzing how Israeli and Ukrainian investors have adjusted their portfolios, the article seeks to show how investors managed to reduce risks, capitalize on opportunities, and show resilience when faced with uncertainty. The lessons learned can illuminate broader patterns that provide essential insights to all kinds of investors who might be facing similar challenges.

IMPACT OF CONFLICT ON REAL ESTATE MARKETS

While geopolitics and war have an effect on the real estate market, it must also be noted that the effects are not uniform. Israel is a case in point in this regard, with property values remaining relatively stable over time (and even appreciating) after periods of unrest due to returning investor confidence.

After the First Lebanon War in 1982, for example, property values increased by 28% within one year afterwards, and 16% in the subsequent year, highlighting the strength of the Israeli market.[1] Moreover, recent trends also showcase a recovery when it comes to deal activity among Israeli LPs; something that was influenced by lower costs of capital and lower tax rates.[2] On top of this, with assets under management when it comes to long-term savings growing by an average of 10% every year, thereby reaching a total of $720 billion, Israeli investors have also increased their capacity to invest in large-scale investment opportunities.[3]

The Ukrainian market, on the other hand, has faced significant challenges since Russia's incursion into Eastern Ukraine. In 2022, transactions dropped sharply, with sales dropping to 355,100 units. In 2021, the Ukrainian real estate market recorded sales of 915,200 units, meaning that the amount of units sold declined by over 60%. Ukrainian investors have adapted their investment strategies by focusing their investments on safer regions, including in Western Ukraine, while also utilizing government support to analyze war-related risks.[4]

Generally speaking, international conflicts usually lead to a sharp rise in investor caution. When it comes to Ukraine, the conflict has had a profound impact on the banking sectors, with credit rating agencies downgrading a number of banks and considering others as being in default.[5] This has also had an impact on Ukrainian investors, who adopted a heavily cautious approach by giving priority to liquidity and safety in relation to their investments.

On the Israeli side, the phrase "when the cannons roar, Israelis buy" also shows a non-traditional behavioural approach to investing, revealing that conflicts can be seen as opportunities.[6] As Sun Tzu said, "in the midst of chaos, there is also opportunity," and through risk mitigation and asset preservation strategies, investors can both preserve their wealth as well as look forward towards increasing it.

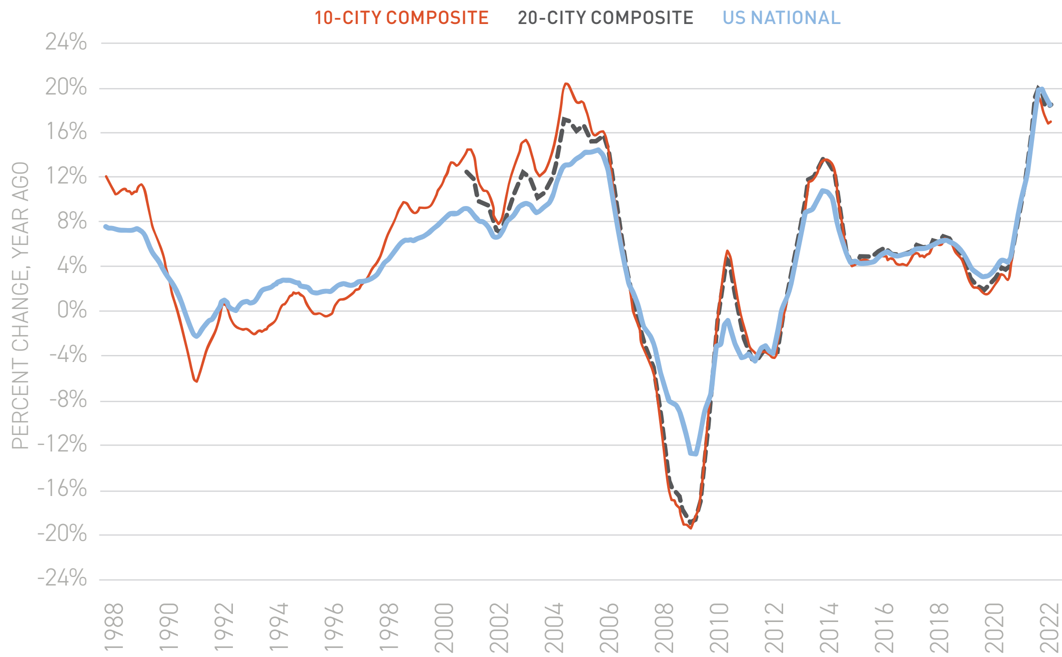
As Sun Tzu said, "in the midst of chaos, there is also opportunity," and through risk mitigation and asset preservation strategies, investors can both preserve their wealth as well as look forward towards increasing it.

ISRAELI REAL ESTATE INVESTORS: ADAPTATION AND RESILIENCE

Although the Israeli real estate market has shown considerable resilience in the face of adversity, in recent years, Israeli investors have also looked towards diversifying their investments. In 2022 alone, Israeli investors invested approximately $2.3 billion in the international real estate market, with almost $1 billion of that amount being invested in the US.[7] Popular destinations when it comes to investment in the real estate market include cities like New York City, which has been receiving renewed interest as a result of domestic economic stability and the potential for high returns.[8] Investment in the United States comes as no surprise in this context, given that the American real estate market is viewed as a safe haven asset.

This is confirmed by statistics which show that in 2021, the S&P CoreLogic Case-Shiller twenty-city home price index reported an 18% increase in one year[9] when compared to an average inflation level of 4.7%.[10] Simply put, Israelis who invested in the American real estate market in 2021 made significant average gains of over 13%, year on year.

EXHIBIT 1: ANNUAL RETURNS OF THE US NATIONAL, 10-CITY COMPOSITE, AND 20-CITY COMPOSITE HOME PRICE INDICES



Source: S&P CoreLogic Case-Shiller

Needless to say, Israeli investors demonstrate behaviours that are akin to corporate managers who are preparing for systematic risks. Just like managers create war chests that they can draw upon in times of need, these investors are relying on strategies which include portfolio diversification, leveraging structured credit investments, and maintaining liquidity in order to navigate periods of considerable risk and volatility.[11]

These behaviours showcase how investors are balancing short-term caution with long-term optimism, thereby enabling them to continue building on their investment momentum, notwithstanding periods of regional and global turbulence.

The European Union, has set aside up to 50 billion euros in relation to Ukraine's recovery, with 8 billion euros solely focused on strengthening private investment.

UKRAINIAN REAL ESTATE MARKET: CHALLENGES AND STRATEGIC RESPONSES

Russia's invasion of Ukraine has brought with it significant disruptions to the Ukrainian real estate market, realized as reduced investor confidence as well as infrastructural damage.

Ukrainian investors have since adopted innovative strategies in order to mitigate these risks. One such strategy has been to focus on investments in Western Ukraine, which is farther away from the conflict zone than Central and Eastern Ukraine. Moreover, the Ukrainian government has also provided investors with data platforms that assess war-related risks, thereby supporting their decision-making during times of war.[12]

Ukrainian developers are also making use of discounts, instalment payments, and attractive exchange rates to try to lure buyers' confidence.[13] Meanwhile, Ukrainian firms who work in industries related to real estate are also diversifying their business, aiming to expand to international markets such as Dubai.[14] In simple terms, Ukrainian businesses and investors are being highly cautious when it comes to investments.

However, it is also important to note that investors are also being encouraged to invest in Ukraine, with the ultimate aim being to rebuild and modernize the country's infrastructure. The European Union, for example, has set aside up to €50 billion in relation to Ukraine's recovery, with €8 billion solely focused on strengthening private investment.[15] Moreover, various US private equity firms are engaging in impact investing in Ukraine and the surrounding region, thereby aiding when it comes to investment sentiment in the country.[16]

LESSONS FOR OTHER INVESTORS

Drawing on the experiences of Israeli and Ukrainian investors, as well as historical case studies, diversification is the key to success. Through the spreading of investments across different regions and types of properties, investors can very well hedge against the possibilities of localized risks while ensuring constant returns in stable markets.

When trouble is brewing in the geopolitical sphere, Israeli investors have shown the ability to transform chaos into opportunity. Investors are also being encouraged to keep an eye out for investing in the rebuilding of Ukraine after the war ends, especially since the country continues on its path to Westernization.[17]

Ukrainian investor behaviour, on the other hand, has been highly cautious, focusing on liquidity and safety rather than opportunity. In simple terms, whereas the Israeli investor approach is akin to the approach that the American investors took during the GFC of 2008, where they exhibited a flight to quality by buying undervalued assets that rose in value, Ukrainians are taking a more defensive approach, that is more akin to the Greek response during the Eurozone debt crisis.

However, it is also essential to note that safe-haven investments, which include the American real estate market, can be seen as a bastion of both cautiousness and opportunity, meaning that significant gains can be made in an environment which is not volatile or risky. As such, investors investing in such assets can both exhibit a flight to quality while also remaining highly cautious.

At the end of the day, the most important thing that investors need to keep in mind is that their investments should help them succeed in the long term rather than for a short while. That's not to say that there might not be opportunities in the short term. However, by focusing on resilience and preparedness, investors can strengthen their positions in the face of geopolitical disruptions.

Diversification is the key to success.

ABOUT THE AUTHOR

Asaf Rosenheim is a Director for Profimex.

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Real Estate in the US is not just a safe haven; it also represents a strategic pivot for diversifying portfolios and mitigating risks tied to local upheavals.

CYBER RISK VIGILANCE

Marie-Noëlle Brisson, FRICS, MAI
Co-Founder
CyberReady, LLC

Michael Savoie, PhD
Co-Founder
CyberReady, LLC

Real estate leaders have a fiduciary duty to act in the best interests of their companies and shareholders, and increasingly, this means incorporating cybersecurity awareness to board governance. But what does good governance actually look like in the real estate space?

Real estate leaders have a fiduciary duty to act in the best interests of their companies and shareholders, and increasingly, this means incorporating cybersecurity awareness to board governance. Broad cybersecurity measures will enable a safe digital strategy, protect sensitive information and prevent cyber risks as much as possible.

This article explores how legislation and regulation has responded to rising cyber risks, what corporate compliance looks like, and how boards can be prepared to perform cyber oversight (as illustrated in *Exhibit 1*).

EXHIBIT 1: SOUND CYBER GOVERNANCE

Source: Principles for Board Governance of Cyber Risk Insight Report March 2021, page 6

ATTACKS ARE INCREASING AND COMING FROM MULTIPLE DIRECTIONS

As digital business grows, so do third-party ecosystems (e.g., vendors, suppliers, partners, etc.). Most organizations have invested in digital technologies without prioritizing the supply chain. As digital risk expands, there is often a fragmented response. Due to a lack of proper integration into governance strategies, digital risk is often treated as an IT-only issue, despite the fact that such risk is manifested across entire organizations and supply chains.

And on an operational level for business use, AI, in the form of large language models (LLMs) and generative AI is a set of technologies that are based primarily on machine learning and deep learning, used for data analytics, predictions and forecasting, object categorization, natural language processing, recommendations, intelligent data retrieval, and more.[1] As the use of AI grows within the organization, and between its suppliers and customers, the cyber risk to the organization increases dramatically.

RISING RISKS RAMPS UP CYBER REGULATION AND BOARDS NEED TO BE AWARE OF NEW REGULATIONS

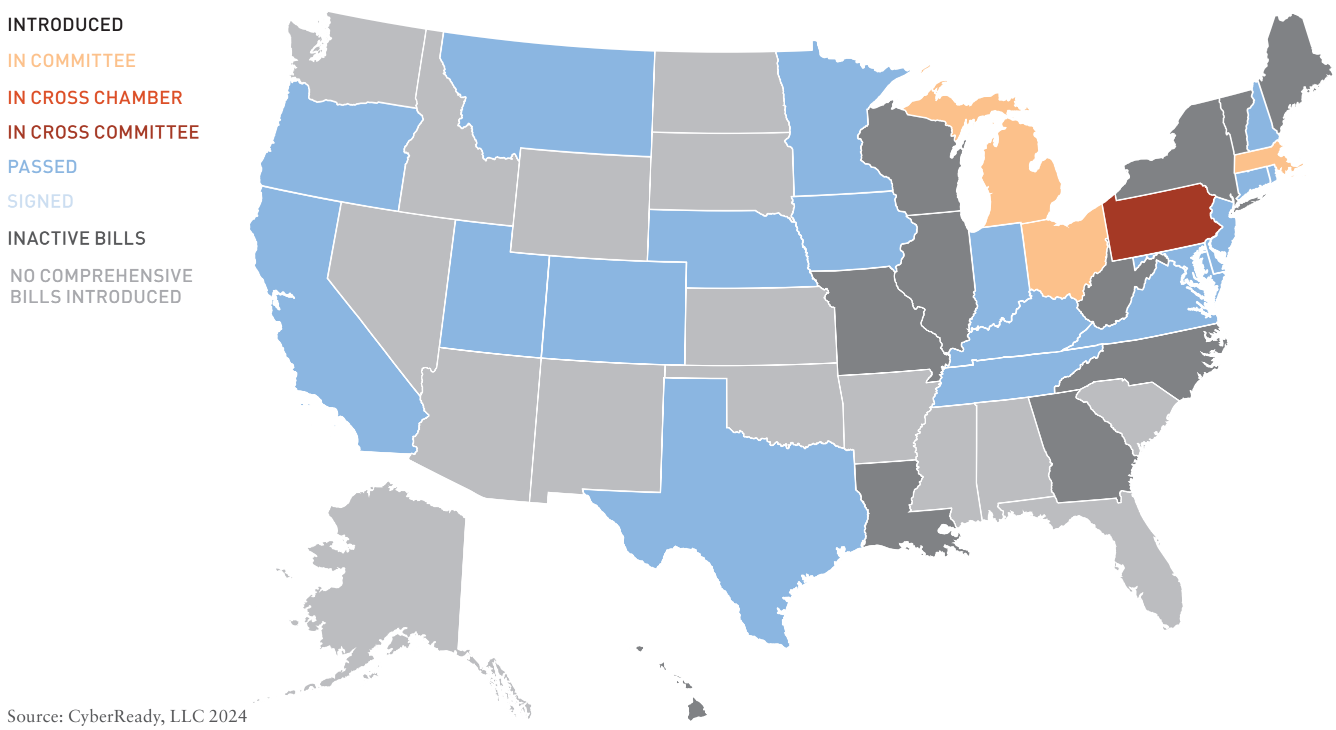
New Federal Laws

Although there is not a specific federal law governing cybersecurity or artificial intelligence oversight by directors, there are legal obligations to keep in mind. For example, the Gramm-Leach-Bliley Act (GLBA) includes the requirement to implement safeguards against cyber threats.[2] The Sarbanes-Oxley Act (SOX) requirement to maintain adequate internal controls over financial reporting, could include cybersecurity controls if they are deemed material.[3]

Besides sector-specific cybersecurity laws, below are the main recent laws and trends directors need to be aware of at the federal level:

- The Internet of Things (IoT) Cybersecurity Improvement Act of 2020
- The proposed American Data Privacy and Protection Act (ADPPA), not yet signed into law, but which would establish nation-wide consumer data protections.
- The 2023 Executive Order calling for the evaluation and mitigation of privacy risks of AI, and the formation of a new AI Safety Institute to create guidance and benchmarks for evaluating AI capabilities.

EXHIBIT 2: US STATE PRIVACY LEGISLATION TRACKER, 2024



Source: CyberReady, LLC 2024

State Privacy and AI Laws

At the state level, data privacy laws are rapidly gaining traction. While a growing number of states have passed such legislations, their respective contours are not the same and directors need to exercise caution.

Similarly, AI legislation is a developing patchwork. As of the writing of this article, only three states (California, Colorado, and Utah) had signed laws (effective Jan, Feb 2026) while Illinois, Massachusetts, and Ohio had active bills under committee review.[4]

New SEC Rules

The Securities and Exchange Commission (SEC) in July 2023 adopted rules requiring public companies to disclose (i) material cyber incidents within four business days; and (ii) material information regarding their cyber risk management, strategy, and governance on an annual basis. This rule introduces two new notions for directors: accountability to investors, and materiality whereby companies will need to develop appropriate metrics such as number of customers affected, sensitivity of data exposed, etc. It also focuses on incident response which requires directors to focus on business continuity and disaster recovery plans.

New Standards and Frameworks

The ISO/IEC 27000 family of standards handles IT security, cybersecurity, and privacy protection; and ISO 27001, the most common standard for information security management systems, vetting people, processes, and technology for confidentiality, integrity, and availability, was updated in 2022 to expand the handling of information security and data protection. Other references such as the National Institute of Standards and Technology (NIST) Cybersecurity Framework can also help improve cybersecurity practices by providing benchmarks for companies to measure their cyber maturity.

Secure by Design is becoming a requirement for many supply chains and thus should be a point of vigilance for directors. "Secure by Design products are those where the security of the customers is a core business requirement, not just a technical feature." (Secure by Design: CISA driving safer tech - LinkedIn) It has been embraced by more and more sectors, i.e.:

- guidelines published by The National Elevator Industry Inc to improve cybersecurity control systems for elevators and escalators
- ISA 62443, released in late 2021 by the International Electrotechnical Commission, to safeguard critical infrastructure and industrial control systems and processes from cyber attacks

As with the SEC rule, a strict calendar of reporting is a must; four business days after companies become aware of a cyber incident is a short turnaround, but it is also becoming the norm for successful insurance claims.

THE INFLATION OF LAWS, REGULATIONS AND STANDARDS RAMPS UP COMPLIANCE AND ACCOUNTABILITY

The new laws and trends reflect a few common attributes, all pointing in the direction of better preparation and vigilance from boards across three areas:

Speed of Implementation: The usual time span between enactment and enforcement of new cybersecurity laws used to be around two years. Today, there is usually not that much time to prepare for implementation after a law is passed.

Extraterritoriality: It is not new, SOX already in 2002 had an extra territorial reach. But now it is the norm and should be a point of vigilance for directors involved with international activities.

Risk Approach: Adoption of a multi-risk approach is encouraged, with proportionate technical, operational, and organizational security measures, underscoring the importance of risk mapping and business continuity, as well as board's preparedness.

Measure of Materiality

Just as the concept of materiality made inroads in ESG accounting, for the first time in the US, the new SEC cyber disclosure rules are based not on data privacy breach but on materiality to investors; directors need to put in place or approve KPIs and thresholds to measure materiality, such as number of clients impacted, duration, geographic spread, and criticality of services affected. The board also must decide on who has the authority to declare materiality, and at what level it gets engaged.

Speed of Reporting

As with the SEC rule, a strict calendar of reporting is a must; four business days after companies become aware of a cyber incident is a short turnaround, but it is also becoming the norm for successful insurance claims. It also begs the question of disclosure: a specific plan to disclose a disruption and effectiveness of incident response needs to be established to be transparent to investors and create trust without sharing too much information.

Heavy Fines

Catching up with heavy European fines, cyber penalties in the US have become heavier. The FTC has dealt heavy fines, just like the SEC for inadequate and misleading disclosures. States have also joined in the trend, as in the recent cases of California fining Google[5] or Kaiser[6], and Illinois[7] and Texas[8] imposing heavy fines on META for violation of biometric laws.

Accountability

The SEC raised the "cyber" bar for the market in general by requiring directors of public companies to have the knowledge and skills necessary to assess cybersecurity risks and establish liability of top management and board members for gross negligence in case of security incidents.

Directors and officers (D&O) liability insurance typically covers claims alleging breach of fiduciary duty, including those related to cybersecurity oversight. However, coverage may be limited if the directors are found to have acted recklessly or in bad faith. The eventuality of lawsuits against directors if investors believe that they failed to adequately oversee cybersecurity risks, or disclose material cybersecurity events, should be of concern to business leaders. Board meeting minutes, for example, are an easy tool for documenting what was discussed (and when), which could make a difference between a painful lawsuit or an easier resolution.

Data privacy and cyber safety have evolved from mere regulatory compliance to a customer trust imperative and thus a strategic opportunity for directors.

Digital risk is often treated as an IT-only issue, despite the fact that such risk is manifested across entire organizations and supply chains.

NEW ACCOUNTABILITY REQUIRES RAMPED UP PREPAREDNESS AND VIGILANCE

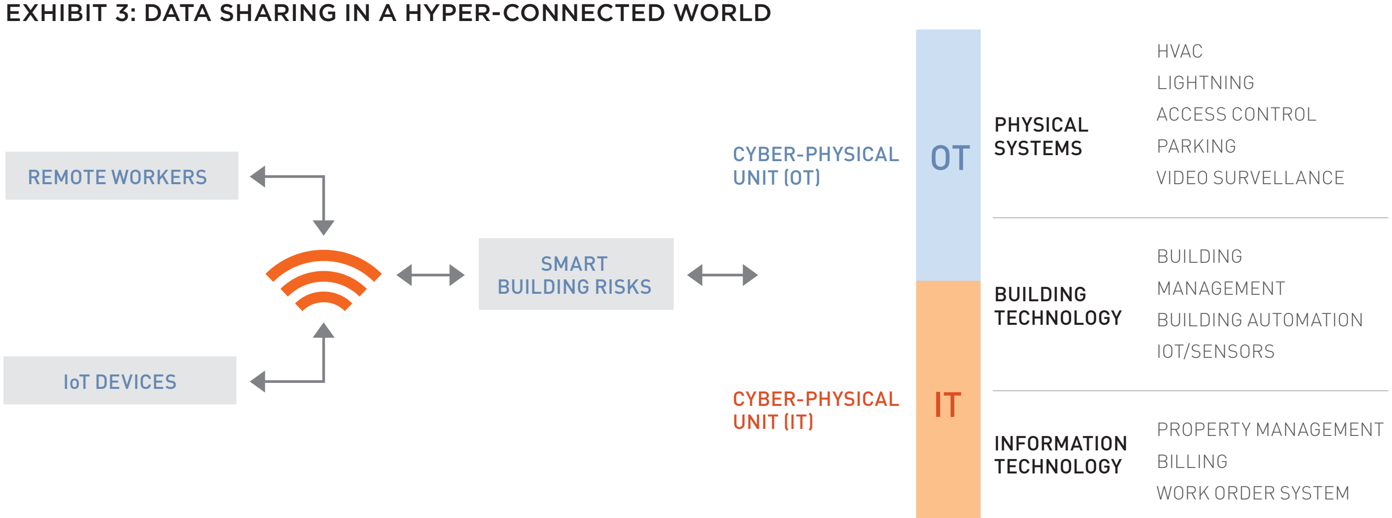
The business world is hyperconnected. The value chain of data ownership can be very complicated, because it often involves aggregation from many sources. A set of controls and audit procedures must be in place to ensure ongoing compliance with internal data policies and external government regulations. Data governance should extend to third parties as well. The same data issues raised and resolved internally should be addressed in interactions with external entities.

The Role of the Board

With today's interconnectivity, it is imperative that the board take a holistic risk management view *(Exhibit 4)*. Here, leaders gain a full view of how their organization's risks impact objectives, strategies, and business operations. Successful integrated risk management (IRM) programs take into account events that might take place outside of the identified risk, contributing to a healthy analysis of the landscape and the board's position in all areas of the company's operations.

In addition to integrating operational, enterprise, and cybersecurity risk management functions, a mature IRM program could also integrate ESG risk management and reporting into the umbrella, getting ahead of pending regulatory requirements.

EXHIBIT 3: DATA SHARING IN A HYPER-CONNECTED WORLD



Source: CyberReady, LLC 2024

EXHIBIT 4: HOLISTIC RISK MANAGEMENT

1. RISK APPETITE AWARENESS
2. BETTER DATA
3. PROJECT PRIORITIZATION
4. FINDING EFFICIENCIES
5. COST SAVINGS
6. THIRD PARTY TRUST
7. DISASTER PREPAREDNESS AND RESILIENCE

Source: CyberReady, LLC, 2024

Business Continuity and Disaster Recovery

Strong data governance is also increasingly critical for business continuity and crisis management.

Modern cyber risk management must address physical, behavioral, technical security and data privacy.

- **Physical Security:** Are buildings and building operations secure from intruders? Is sensitive data protected from prying eyes (e.g., intentional, accidental, or even remote through video conferencing)?
- **Behavioral Security:** Do personnel understand and practice safe data management practices? Do employees understand how to spot a phishing attack? Are safe protocols followed when entering and exiting spaces containing sensitive data? Is line-of-sight checked when participating in video calls?
- **Technical Security:** Is the network secure? This seems a simple question, but with the addition of generative AI, remote workers, IoT devices, and cloud storage, the network is no longer limited to the office. Technical security must focus on protecting the data wherever it is flowing.
- **Data Privacy:** Who has access to the data? Who controls and tracks this access? Is the board aware of what third-parties do with data provided them by the organization? How are breaches reported/responded to?

Modern cyber risk management must address physical, behavioral, technical security and data privacy.

Finally, it is not enough to merely protect each of these areas. Good cyber risk management must address the interaction between them. As an example, many companies require employees to use a passkey to access the office. That is good physical security. However, if a package delivery person is standing outside the door with an arm full of packages, most employees will hold the door and allow them to enter. While this is common courtesy, it creates a breach that could allow a malicious actor to enter the facility. Proper policy and training on how to handle this situation is part of behavioral security. Both physical and behavioral security are required in this instance to maximize the protection to the company.

Now more than ever boards need to treat cyber risk as a business risk. Whether it is a smart building, interconnected devices, remote workers logging on to office networks with personal devices, or third parties accessing corporate information, private data is within easier reach and more vulnerable to attack.

ABOUT THE AUTHORS

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NOTES

1 https://cloud.google.com/learn/what-is-artificial-intelligence

2 (https://www.ftc.gov/business-guidance/privacy-security/gramm-leach-bliley-act)

3 https://sarbanes-oxley-act.com/#:~:text=Under%20the%20Sarbanes%2DOxley%20Act,that%20system%20of%20internal%20controls)

4 https://iapp.org/media/pdf/resource_center/us_state_ai_governance_legislation_tracker.pdf

5 https://oag.ca.gov/privacy/privacy-enforcement-actions

6 https://dmhc.ca.gov/Resources/Newsroom/PressReleases/June15,2023.aspx

7 https://www.legaldive.com/news/class-action-lawsuits-illinois-biometric-data-law-privacy-corporate-counsel-law-arent-fox-freeman/699258/

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ALTERNATE REALTY

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In the face of increased technological proliferation, property owners must develop new systems that not only safeguard their intellectual and physical assets, but also verify and track digital interactions (and revenue) tied to their properties.

The growing convergence of digital and physical worlds is reshaping the landscape of real estate, introducing complex new challenges in managing both tangible assets and their digital interface. In recent years, the rapid growth of augmented reality (AR) and extended reality (XR) ecosystems has been fueled by breakthroughs in both hardware—such as AR glasses and smartphones—and software, including immersive apps, interactive games, and digital advertising. These technologies are poised to revolutionize sectors like entertainment, real estate, advertising, and tourism by blending digital content seamlessly with the physical world.

While this innovation opens up exciting new possibilities for engagement, it also brings with it significant challenges, particularly around property rights.

For instance, unauthorized AR advertisements projected onto buildings or virtual objects anchored to real-world locations without consent could infringe upon property owners' rights. In a world where the line between digital and physical spaces is becoming increasingly blurred, property owners will find themselves navigating not just the physical space they control but also the rights and interactions that unfold in digital environments. They risk losing control over how their assets are used, represented, and even monetized.

Without a clear framework to govern these digital interactions, the potential for exploitation and conflict grows—leaving property owners vulnerable to unintended or unauthorized use of their physical and virtual spaces.

To stay ahead, property owners must develop new systems that not only safeguard their intellectual and physical assets, but also verify and track digital interactions tied to their properties. By implementing such systems, they can maintain authority over how their properties are represented and utilized by AR, ensuring that both the real and virtual dimensions of their assets are protected and commercialized.

DIGITAL MEDIA RIGHTS IN REAL ESTATE

Digital Media Rights represent a new category of intellectual property that extends traditional real estate rights into the digital universe. Historically, property rights have been limited to the physical land, buildings, and air rights associated with a property. However, with the evolution of augmented reality (AR) and extended reality (XR) technologies, digital content is increasingly interacting with and overlaying real-world physical spaces. Many property owners are unaware that their buildings, landscapes, or public areas are being used for AR content without their permission. They now face the challenge of managing not only their physical assets but also the digital interactions associated with them. The rapid growth of AR/XR technology presents a new frontier for intellectual property rights – one that requires strategic foresight and the development of comprehensive legal and technological frameworks to protect both physical and digital property interests.

DRM IN THE MEDIA INDUSTRY

Digital Rights Management (DRM) systems have long been used in the media industry to protect and monetize intellectual property. The evolution of digital content—from music and films to video games and e-books—has necessitated the development of systems that ensure creators are compensated for the use of their work and that unauthorized duplication or distribution is prevented.

Legal Precedents Protecting Real Estate as Intellectual Property

Real estate, like any other form of intellectual property, is safeguarded by a comprehensive framework of legal precedents that regulate its lawful development, use, and monetization. Traditionally, property rights have centered on tangible aspects—such as land, buildings, and the surrounding physical space. However, as augmented reality (AR) and other digital technologies intersect with the physical world, property rights will extend into the digital world, requiring owners to protect against unauthorized virtual intrusions. The legal foundation for property-related intellectual property rights is established through key precedents, including air rights, trespassing laws, and the Lanham Act.

Air Rights: Controlling the Space Above Property

One of the most established legal frameworks for protecting real estate as intellectual property is the concept of air rights, or the property owner's legal right to control, lease, or sell the space above their land. These rights are particularly valuable in urban environments, where developers often seek to build vertically, using the airspace above existing structures. Property owners can sell their air rights to developers, allowing them to build taller buildings while compensating the original owner for the use of the transferred space.

Air rights illustrate the principle that property ownership extends beyond the physical boundaries of the land itself. Just as property owners can sell or lease the space above their land, they should also have the right to control the digital spaces associated with their assets. Just as property owners can sell or lease the space above their land, they should also have the right to control the digital spaces associated with their assets – areas where virtual objects, advertisements, or experiences could reside

In the context of AR, digital trespassing occurs when virtual content is rendered on a property without the owner's consent.

Trespassing Laws: Preventing Unauthorized Digital Use

Another important legal framework for protecting real estate is trespassing law – entering or using another person's property without permission. While traditionally focused on physical intrusions, trespassing laws can also apply to unauthorized digital interactions with real estate. In the context of AR, digital trespassing occurs when virtual content is rendered on a property without the owner's consent. This could include an AR game that uses a private property for part of its gameplay, or an AR advertisement associated with a building without permission.

Several legal cases have addressed the issue of trespassing in digital environments. For example, Pokémon Go, a mobile AR game that placed virtual creatures and objects on real-world properties, caused several lawsuits to be filed by property owners who claimed that the game encouraged players to trespass on their land. Businesses owners could also claim tortious interference with business relationships and interference with prospective economic advantage. These cases highlighted the need for clear legal protections against unauthorized digital use of real estate.

The Lanham Act & AWCPA: Protecting Property in Commercial Use

The Lanham Act, which generally prevents deceptive and misleading use of trademarks in the United States, provides protections for property owners in the context of commercial use. The Act prohibits the use of a property's image in a way that could confuse consumers or falsely suggest that the property owner endorses a particular product or service. This is particularly relevant in the context of AR, where advertisements or branded content could be overlayed onto a specific building without the owner's permission, leading consumers to believe that the property owner has endorsed the product being advertised.

The *Architectural Works Protection Act of 1990* assigns copyright protection to the design of a building, including the overall form as well as the composition. A violation of the copyright owner's exclusive rights constitutes an infringement entitling the owner to injunctive relief to stop the infringement and to monetary damages. The US Patent and Trademark Office has even issued specific registrations for several iconic structures, including the Empire State Building, the Chrysler Building and the Jack in the Box fast food restaurant building design.

Several landmark cases have reinforced the importance of protecting property owners from unauthorized commercial use. Notably, Insomniac Games' *Marvel's Spider-Man: Miles Morales* was forced to delete New York's Chrysler Building from the skyline because it was unable to negotiate the rights to include the iconic building in the game imagery. The game, where you can climb up and inspect every part of the building, could have exposed Insomniac, Marvel, and Sony to possible litigation.

These legal precedents demonstrate that property owners have the right to control how their assets are used in both physical and digital environments, approving or denying the use of their properties in AR advertisements, games, or experiences.

DIGITAL MEDIA RIGHTS REGISTRY

At the heart of the DRM system is the DRM registry, a blockchain-based ledger that allows property owners to register their rights to the digital spaces associated with their real estate and notice potential trespassers.

This registry will function as a public, immutable record of ownership, ensuring that property owners retain control over if and how their assets are used in AR environments.

When a property owner registers their rights in the system, they will define the digital boundaries of their property—both horizontally and vertically. This will include the façade of a building, the airspace above it, the area around it, and any other areas where they are content might be rendered or anchored. By registering their rights, property owners will defend their ability to approve, deny, or monetize digital content associated with their assets.

The use of blockchain technology ensures that these rights are secure and tamper-proof. Once a property owner registers their digital media rights, the record cannot be altered without their consent, providing a robust legal framework for enforcing these rights in the digital world.

Smart Contracts for Licensing Digital Media Rights

To facilitate licensing of digital media rights, the DRM system will utilize smart contracts. Smart contracts are self-executing agreements that automatically enforce the terms of a contract when certain conditions are met. In the context of the DRM system, smart contracts will be used to handle transactions between property owners and licensees, such as advertisers or AR content developers.

For example, an advertiser might wish to render an AR advertisement on the side of a building for a specific period of time. The property owner can create a smart contract that outlines the terms of the agreement, including the duration of the advertisement, the compensation the owner will receive, and any restrictions on the type of content that can be displayed. Once the contract is signed by both parties, it is recorded on the blockchain via the DRM system and automatically enforced. If the terms of the agreement are violated, the contract will trigger penalties and/or terminate the agreement.

Smart contracts provide a streamlined and secure way to manage digital media rights, ensuring that property owners are compensated fairly and that advertisers and developers can easily obtain the necessary permissions to use digital spaces.

The Need for an Ethical Marketplace for Media and Tech Companies

As the digital economy continues to evolve, particularly with the rise of AR technologies, the need for a transparent and ethical marketplace to manage digital media rights is becoming increasingly urgent.

Tech companies such as Meta (formerly Facebook), Google, and Snapchat are heavily investing in AR, with Meta leading the charge toward an immersive metaverse that blends physical and digital worlds. These platforms are dependent on advertising revenue, with Meta deriving more than 98% of its revenue from ads. As AR ads begin to play a larger role in the advertising landscape, companies will need a structured system to ensure that the use of digital space on physical assets is both ethical and legal.

The DRM registry is a blockchain-based ledger that allows property owners to register their rights to the digital spaces associated with their real estate and notice potential trespassers.

CLICK-THROUGH REVENUE AND AFFILIATE MONETIZATION

One of the most significant opportunities created by the integration of AR into real-world environments is the potential for click-through revenue and affiliate monetization. As AR ads become more interactive and personalized, property owners can generate additional revenue by facilitating digital interactions that lead to online purchases. A DRM system can enable property owners to capitalize on click-through revenue, turning their physical assets into digital portals that drive e-commerce.

How Click-Through Revenue Works in AR

In traditional online advertising, click-through revenue is generated when a user clicks on an advertisement and is directed to a product or service page. If the user makes a purchase, the website or platform that hosted the ad receives a commission or affiliate fee. This model has proven highly successful in the online retail world, with platforms like Google, Instagram, and Amazon benefiting from affiliate marketing programs, generating billions of dollars in annual revenue worldwide.

In the context of AR, buildings and other real-world properties can function as digital billboards, hosting interactive, personalized ads that users engage with through AR devices. For example, a brand might project an AR ad onto the side of a prominent building in a busy shopping district. A user wearing AR glasses could interact with the ad by clicking on the product displayed, which would take them directly to the brand's website, where they could make a purchase.

By integrating click-through revenue into the DRM system, property owners can earn a percentage of the sales generated through these AR interactions. Just as websites earn affiliate revenue from driving traffic to e-commerce platforms, property owners can earn affiliate commissions for facilitating AR ads that lead to online purchases. This creates a new revenue stream for real estate owners, turning their buildings into digital portals that connect users with brands and products.

The Future of Insurance in AR: Evolving with Technology

As augmented reality (AR) technologies become more prevalent, sophisticated, and mainstream, insurance companies will need to adapt to the emerging risks posed by unforeseen liabilities in this rapidly evolving digital environment. Consider scenarios such as an individual sustaining an injury while pursuing an augmented reality prize on private property, or a defamatory digital advertisement appearing on a building. Insurers will likely deny claims unless a digital liability policy is in place—a new, innovative insurance product designed to protect property owners, content creators, and advertisers alike. In the near future, property owners and individuals will require these additional protections from entities seeking to use their digital spaces for AR media. displays. Insurance providers will, in turn, need to verify compliance through DRM systems to ensure adequate digital indemnification coverage is maintained.

A DRM system can enable property owners to capitalize on click-through revenue, turning their physical assets into digital portals that drive e-commerce.

BUILDING A VERIFIED AND INSURED AR ECOSYSTEM

The rise of AR marks a transformational moment for how we interact with the world around us. As physical spaces, people, and objects become conduits for digital media, the need for a robust DRM system becomes essential. By establishing a secure, transparent, and permission-based framework for managing digital media rights property owners, individuals, and businesses can maintain control over how their assets are used in AR environments.

Through the DRM system, property owners and individuals can verify their identity and assets in the 3D internet, providing a "blue checkmark" of authenticity and ownership. This verification is critical to preventing misuse, fraud, and unauthorized digital content projection onto real-world spaces. In this new AR-enabled economy, accurately and securely managing one's digital presence will be as important as managing physical assets. Individuals and businesses will benefit from full control over their digital identity, ensuring that every AR interaction is tied to a verified, authorized entity.

Moreover, the DRM system addresses the complex issue of insurance and liability. In AR environments, where buildings, individuals, and objects can act as distribution points for digital content, liability concerns are as real as in physical contexts. Just as property owners today require insurance for movie shoots or commercial activities on their land, the DRM platform will require content creators and advertisers to provide liability coverage before projecting AR content onto a person, place, or thing. By baking insurance into the system, we ensure that every digital interaction is legally protected and that all parties are shielded from the financial risks associated with liability claims.

A comprehensive DRM system also supports the long-term sustainability of the AR economy. It empowers property owners and individuals to monetize their digital spaces, while protecting them from legal and financial risks. At the same time, it provides advertisers, tech companies, and content creators with a transparent and ethical framework for using digital spaces in the 3D internet.

Implementing the DRM system sets the stage for a resilient, verifiable, and fully insured AR ecosystem. This framework not only embraces the core principles of Web 3—prioritizing true ownership and data integrity—but also ensures that the AR economy is underpinned by transparency, trust, and robust legal compliance.

As AR technology continues to evolve, the DRM platform will become an essential tool for managing the growing complexities of the digital landscape. It will safeguard property rights, personal identities, and digital media interactions, ensuring they are secure, monetizable, and protected in an increasingly interconnected world.

READER RESPONSE

Property owners of all types face continued headwinds from volatile occupancy rates, inflationary pressures on operating costs, increased regulation and property taxes, and other factors that challenge traditional NOI. They will need to continue to innovate, exploring new ways to unlock value and identify new revenue streams. One new promising avenue is through Digital Media Rights (DMRs), an emerging concept that mirrors assets such as air, water, and mineral rights, which exist "adjacent" to the physical building itself. DMRs are an intriguing way for building owners and operators to monetize the emerging digital realm of the 3D spatial Internet, accessible via personal devices and, increasingly, augmented reality (AR) glasses. Buildings are the intellectual property of our industry and deserve the same level of protection and commercialization as other forms of IP. Allowing content providers to serve ads tagged to specific buildings should require our consent and participation in the revenue streams. Moreover, such activity exposes property owners to liability, further supporting control of an asset's digital space. The global digital advertising market has been estimated to be worth over $360 billion in the US in 2025. A significant portion of this activity will continue migrating to the built environment. Critically important to the real estate industry is the establishment of a platform that tracks digital activity in and around buildings, ensuring that operators and owners can unlock and safeguard the financial interests to which they are entitled.

– Bryan Koop

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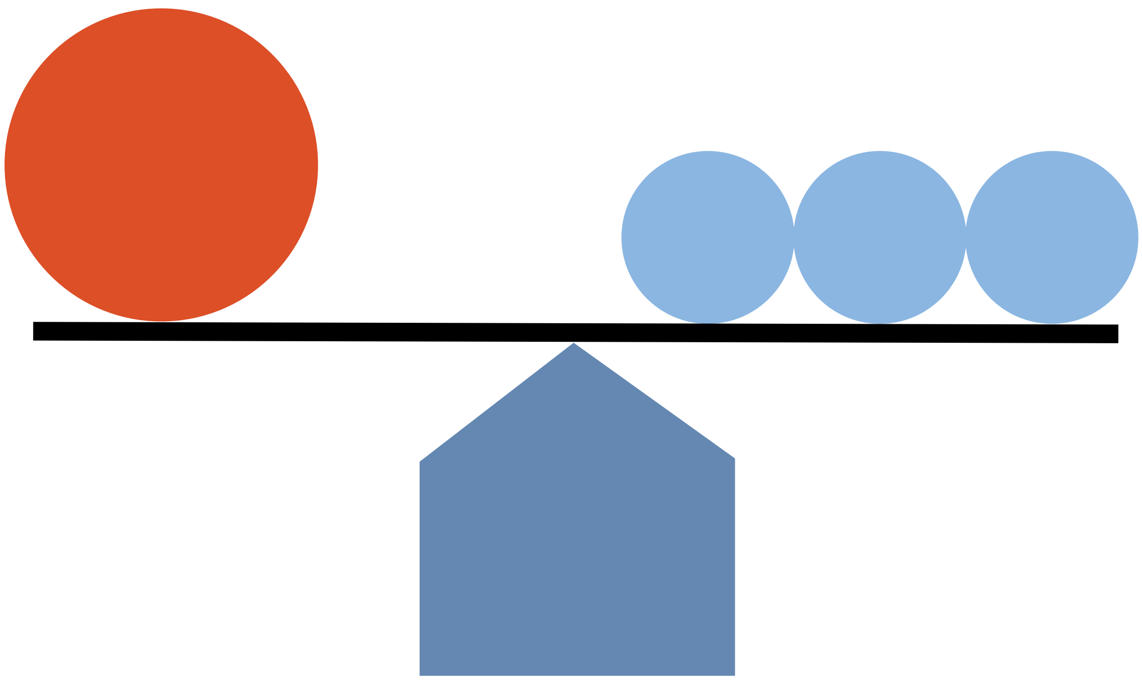
DRIVING FORCE



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Syndication continues to grow in popularity among lenders, which is also introducing a host of legal issues into the market. This second of a special two-part series from Dentons[1] begins to explore the opportunities—and intricacies—of multi-tiered financing.

[Editor's Note: The first part of this series was published in the previous issue Summit Journal in September 2024. The introduction is repeated here for context.]

According to a recent report, commercial real estate and multifamily mortgage borrowings in 2023 were forecasted to reach $645 billion, a slight decrease from the overall total commercial real estate and multifamily mortgage borrowings in the previous two years.[2]

Notwithstanding such overall decrease in volume, commercial mortgage loans have continued to escalate in size and complexity, and as such, lenders have been forced to further develop methods to adequately diversify their risk.

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

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

DECISION-MAKING

The agent lender will want the maximum amount of freedom possible with respect to administering the loan and avoiding interference or delay due to co-lender involvement in the decision-making process.

For example, the agent is usually granted the right to make protective advances without co-lender consent (i.e., taxes, insurance and ground lease payments) to maintain the value of the collateral in case of emergency. Co-lenders, on the other hand, will want some degree of control over key issues such as material amendments to the loan documents (e.g., changes in the interest rate applicable to the loan or the maturity date of the facility or increases in the facility amount).

Co-lenders also want control over the management of the collateral, decisions regarding acceleration of the loan after an Event of Default, releases of any collateral, actions that affect the value of the collateral, and appointments of successor agent lenders. Co-lenders are not likely to request control over non-material issues, because they also have an interest in distancing themselves from the burdens of administering the loan. Therefore, negotiations over the granting of authority to the agent to act on behalf of the co-lenders, and over the decisions that will require co-lender consent, are likely to be limited to material decisions affecting the loan and the collateral.

The borrower will only want to deal with one lender for payments and other day-to-day loan administration. For more material decisions and approvals, however, loan syndication documents might require that all or a certain percentage of the participant lenders approve an action before the borrower may act, which can be a time-consuming process, causing the borrower unwanted delay. To minimize the likelihood of decision-making issues arising within the syndicate group, it is imperative to select participant lenders with adequate risk tolerance and expertise for the subject real estate project.

Primary and syndication loan documents may distinguish between decisions requiring unanimous co-lender consent and those only requiring consent from a certain percentage of the syndicate group. Again, the agent lender will generally prefer a lesser percentage of co-lender consent, while the co-lenders will want their votes to count on major decisions. Typically, all decisions regarding the extension of a maturity date, reduction in the interest rate, payment of debt service, and the release of collateral require unanimous co-lender consent.

Other major decisions, such as approval of changes in the controlling interest in the borrower, a borrower's request for change orders in construction loans above certain thresholds, a borrower's request to enter into all leases with respect to the mortgaged property, and any transfers of subordinate loan interests to another lender, can be tied to a qualified majority of the syndicate lenders.

The calculation of the majority percentage is usually based on the individual distribution of participant lenders in the bank group and their respective money at risk, rather than on a headcount of lenders. The percentage of lenders required should be more than 51 percent of the syndicate group, but typically is set at 60 percent or 66.67 percent of the aggregated amounts of all lenders.

In loan structures involving both senior lenders and subordinate lenders, the lender relationship may be arranged such that only senior lenders have the right to be involved in decision-making. The documentation for such structures typically limits the subordinate lender's right to cure existing borrower defaults and the right to buy out the senior lender to gain control of the mortgage collateral. The subordinate lender's motivation and incentive to take control in default situations varies to the extent the current market value of the mortgage collateral still supports the subordinate lender's subordinate position. A/B loan structures may allow for a shift in control of decision-making to the subordinate lender once a default with respect to the senior obligation is cured. In such cases, this shift is only valid for a period during which the subordinate lender can pursue foreclosure of the real estate and pay off the senior lender.

By keeping the decision-making process transparent, and by building consensus where possible, a lending group can head off most potential conflicts.

When a borrower makes a request which requires the consent of co-lenders, the agent lender must process the request before submitting the issue to the syndicate group for approval. The co-lenders then consider the information provided along with any other documentation and due diligence items that may be involved before informing the agent lender of its decision.

To limit the amount of time between a borrower's request and the agent lender's response when co-lender consent is involved, agent lenders will push to limit the amount of time that the co-lenders have to consider the request and related information. Oftentimes, the primary and/or syndication loan documents will include a provision deeming consent given after a certain number of days if no co-lender response is received by the agent lender. Co-lenders will negotiate for as long as possible to consider the issue.

With little existing law in this area, and with the agency provisions of the agreements rarely addressing issues in detail, solutions frequently depend on the judgment and consensus of the parties and their lawyers. The courts have typically deferred to the language in agreements among lenders, and in particular, the decision-making procedures they establish. All parties, therefore, must understand that such agreements will likely form the main—if not the only—foundation for legal judgments in the case of later disputes. The decision-making processes should be considered and established carefully.[3]

Nevertheless, it is incumbent upon the lending group's decision-making parties to respect the implied covenant of good faith and fair dealing. The interests of other members of the lending group should be factored in, and the decision-making party should keep all members apprised of its actions or potential actions. By keeping the decision-making process transparent, and by building consensus where possible, a lending group can head off most potential conflicts. Often, a lending group will enlist a co-agent to review and make objective recommendations on certain substantive decisions. However, in cases where the decision-making authority acts contrary to the co-agent's recommendations, this may be used as damaging evidence in future conflict issues.[4]

Finally, the lending group should bear in mind that, once it becomes a property owner, it will need to make all decisions associated with real estate ownership—leasing, management, tenant terms, ownership structure, and so forth.[5]

INTERCREDITOR AGREEMENTS

Some syndicated real estate loans involve senior and subordinate tranches within a facility that are secured by the same mortgage (A/B loan structures). Because the senior lenders and the subordinate lenders share the same collateral, the respective priorities, and rights of each group of lenders must be set forth in an agreement between such parties. When various classes of lenders are involved in the capital stack, multiple intercreditor agreements may be required. Because the priority and control over the claim against the mortgage collateral are instrumental to each lender's underwriting, the intercreditor agreement is often heavily negotiated.

Likewise, in a multi-tiered financing with mortgage and mezzanine debt (and sometimes with multiple levels of mezzanine debt), the sole document governing the relationship between the two classes will be the intercreditor agreement. Given that this document acts to grant, as well as curb, the rights of each class vis-à-vis the borrowers and the collateral, the intercreditor agreement is a hotly contested document. Real estate professionals should exercise great care when negotiating an intercreditor agreement.

Generally, the senior lenders will agree to provide notice to the subordinate lenders of a borrower default either: (i) contemporaneously with delivery of such notice to borrower; or (ii) at the expiration of borrower's cure period. How much time the senior lenders will afford the subordinate lenders to cure a default remaining uncured by borrower before the senior lenders accelerate the loan or otherwise exercise remedies is heavily negotiated. Subordinate lenders should attempt to bifurcate the cure periods granted by senior lenders into two distinct categories: monetary defaults and non-monetary defaults.

When negotiating the monetary cure period terms, subordinate lenders should seek to be released from the payment of late charges or default interest in connection with their cure of any monetary default. Senior lenders, on the other hand, should limit the number of times a subordinate lender can cure a default by a borrower with respect to the payment of debt service.

When dealing with the duration of non-monetary cure periods, subordinate lenders will want a cure period that is long enough for them to effect a cure. Mezzanine lenders will also want to negotiate additional time with respect to non-monetary defaults that are of a nature that cannot be cured without the ownership of the equity. In such a case, mezzanine lenders should seek enough time under the agreement as is necessary to gain ownership of the equity and to cure such a default. Senior lenders often allow such additional periods provided there is no material impairment to value or use of the underlying collateral.

When various classes of lenders are involved in the capital stack, multiple intercreditor agreements may be required.

If the senior lenders commence foreclosure proceedings, accelerate the loan; or if the senior borrower is a debtor in an insolvency proceeding, the senior lender will allow the subordinate lenders the opportunity to acquire the senior loan. The purchase price will always be at least equal to the sum of the principal balance at par, plus accrued but unpaid interest. However, in portfolio loan documents, the senior lenders will often seek to include default interest, late fees, breakage charges, yield maintenance, and the like.

In securitized transactions and multi-tiered financings, the convention seems to be that such additional items are foregone by the senior lenders. Still, senior lenders would be well advised to prevent the existence of an open-ended option to buy the senior loan at par. Senior lenders can shorten the purchase option by making default interest, late charges and other fees part of the purchase price if the subordinate lender fails to purchase the senior loan within ninety days after notice of a purchase option event.

If the borrower becomes involved in a bankruptcy proceeding, the senior lenders will generally allow the subordinate lenders to file a claim in that proceeding (in the case of mezzanine lenders, only to the extent such a claim is necessary for the mezzanine lender to preserve or realize on the mezzanine lender's collateral) but will rarely allow the subordinate lenders to vote on a plan of reorganization or otherwise act upon their claim. In fact, in most instances, the senior lender is afforded the opportunity to vote on behalf of the subordinate lenders with respect to any proposed plan of reorganization (but only if the proposed plan would result in the senior lender being "impaired" (as defined in the United States Bankruptcy Code)).

While a default under the senior loan documents invariably constitutes a default under the subordinate loan documents, the reverse is almost never the case. When a default occurs under the subordinate loan documents, the senior lenders may allow the subordinate lenders to foreclose upon their collateral, but any third-party transferee at such foreclosure sale (or, if the subordinate lenders bid the collateral in or obtain a deed-in-lieu of foreclosure, any transferee thereof) must generally meet certain eligibility requirements negotiated into the intercreditor agreement.

By empowering senior lenders at the expense of subordinated lenders' ability to influence or oppose proposals, intercreditor agreements reduce decision-making costs in the event of default. However, it is possible for an investor to exploit this imbalance, increasing its own return by damaging other creditors. When considering intercreditor agreements that waive or assign bankruptcy rights, courts are forced to weigh the benefits to the agreement's signatories against the potential for harm to subordinated creditors and non-signatories.[6]

Second-lien lenders face a host of other considerations unique to their status. In particular, they may become a "silent second" by agreeing contractually to refrain from exercising some or all of their rights as secured creditors. The key elements usually included an intercreditor agreement which pertain to "silent second" terms are:

"Prohibitions (or limitations) on the right of the second lien holders to take enforcement actions, with respect to their liens (possibly subject to time or other limitations)

Agreements by the holders of second liens not to challenge enforcement or foreclosure actions taken by the holders of the first liens (possibly subject to time or other limitations)

Prohibitions on the right of the second lien holders to challenge the validity or priority of the first liens

Waivers of (or limitations on) other secured creditor rights by the holders of second liens."[7]

Equally, mezzanine lenders face a host of other issues which are unique to their status. Perhaps the most heavily negotiated and most important provision of the multi-tiered financing intercreditor agreement is the right of a mezzanine lender to pursue a claim against a guarantor which is also the guarantor of the senior loan.

Senior lenders will often prohibit the mezzanine lender from pursuing a claim against a common guarantor while the senior loan is outstanding, or in the alternative, will require the mezzanine lender to turn over to the senior lender the proceeds of any judgment the mezzanine lender obtains from such common guarantor. Mezzanine lenders, however, should seek to eliminate any blanket prohibition on pursuing claims. They should also limit the requirement to turn over proceeds to those instances (i) when the senior lender is simultaneously pursuing a claim against the common guarantor; or (ii) when the senior lender has notified the mezzanine lender that it has a claim against the common guarantor and thereafter pursues such claim within a negotiated time period.

Lastly, intercreditor agreements will include a fair amount of deal-specific provisions. Such deal- specific provisions generally include the right of a subordinate lender to exercise a senior borrower extension option, rights with respect to ground leases, and provisions relating to future funding obligations. The provision that receives the most deal-specific language is often the modification section of the intercreditor agreement. Because any increase in obligations on the part of a borrower of either class of debt can impact the owner of the other class of debt, the modification section of the intercreditor will prevent both the senior and the subordinate lenders from modifying key terms of their respective loan agreements without the consent of the other. Such key terms often include cash management/ cash sweep terms, transfer provisions, interest rates and other payment terms.

According to a recent report, commercial real estate and multifamily mortgage borrowings in 2023 were forecasted to reach $645 billion.

DEFAULTS AND PAYMENT PRIORITIES

The syndication documents typically specify both a pre-default and post-default waterfall. For A/B loan structures or senior/ subordinate note structures, the senior group will be paid first. The subordinate group has taken on more risk by being subordinated to the senior group and will not be paid until after the senior group is fully repaid. Therefore, the subordinate group is usually entitled to collect a higher interest rate in exchange for taking on such risk. Losses of principal and interest due to a default can also be allocated among the senior and subordinate groups. In most cases, the losses will be allocated first to the subordinate group and then to the senior group.

Before an event of default, the agent lender will generally receive its administrative and servicing fees, as well as reimbursement for its legal or other out-of-pocket expenses before reimbursement for further payments (such as protective advances, interest, and principal payments) are distributed to lenders. Interest is paid before principal is repaid, because the primary interest of all lenders is to have the debt paid current. If there are tranches among the lenders, the senior lenders will negotiate to have their interest and principal paid before any payments are distributed to the subordinate lenders, because being paid first is consistent with their lower level of risk.

In some cases, the subordinate lender can negotiate for priority of its interest payments over the principal payments to the senior lender. Such concessions are justifiable in specific transactions in which the borrower does not agree to an accrued interest feature as long as no event of default exists. Such accrued interest rate features shift the multiple interest payments during the term of the loan to a one-time interest payment at the maturity date. This is usually granted in exchange for the calculation of a substantially increased interest rate throughout the term of the loan.

After an event of default occurs, the senior lenders will be even more likely to insist that their interest and principal are paid before subordinate lenders can collect any payments. Administrative and servicing fees (including special servicing fees), collection, and other out-of-pocket expenses of the agent lender will be paid before default interest, late charges, regular interest, and principal to the senior lenders. Subsequently, the interest and principal are paid, all before costs, expenses, fees, and principal of the subordinate group are paid.

Although the lead lender typically has wide latitude in addressing loan defaults, limitations still exist. Certain provisions of the loan documents may require a prescribed vote before the lead lender can act. In other cases, remedies may need to be effected within a certain time period lest the lead lender be deemed to have, through inaction, waived enforcement rights or accepted a de facto loan modification. Participation and co-lending agreements may also restrict the lead lender's options after foreclosure occurs.[8] During this period, several possible "outs" may allow the lead lender to cede its lead lender duties, including a purchase option or a buy-sell option.[9] Each specific contract must be considered and interpreted to determine what, if any, approvals may be needed before action can be taken.

Examining relevant court cases, such as New Bank of New England, N.A. v. Toronto Dominion Bank, one paper argues that US case law preserves unaltered the contractual rights of the creditors among themselves during a debt restructuring process. A creditor's right to enforce its claim against the borrower is not affected by the problems such action may cause other lenders. Similarly, the rights of the lending group's majority are not impacted by an implicit obligation to a minority lender or its interests.[10]

As syndication and multi-tiered financings continue to grow in popularity lenders and their counsel must make themselves familiar with the legal issues surrounding such transactions.

LENDER DEFAULT

When one co-lender fails to perform its obligation to fund its percentage of the loan to the borrower, it has breached its agreement with the borrower (if a direct or regular participant) or with the other lenders (if an indirect participant). In lending relationships with additional funding obligations, such as construction loans or lease-up loans, the mechanism for dealing with a defaulting lender must be clearly set forth in the primary and/or syndication loan documents.

Some loans are structured to allow the non-defaulting lenders to advance the defaulting lender's share in exchange for the benefits associated with that advance. In some cases, defaulting lenders must take a step-down in priority with respect to distribution of payments and fees received from the borrower. In addition, some primary and/or syndication loan documents state that a defaulting lender loses its right to have its vote counted in any decision requiring the consent of co-lenders.

SUMMARY

As syndication and multi-tiered financings continue to grow in popularity among lenders and as the number of syndicated and multi-tiered loans continue to rise, lenders and their counsel must make themselves familiar with the legal issues surrounding such transactions. Particular attention should be given, in the case of syndicated loans, to the relationship between the lenders within the syndicate group, especially between the agent lender and the participant lenders and, in the case of the multi-tiered loans, to the relationship between the senior and the subordinate lenders set forth in the intercreditor agreement.

ABOUT THE AUTHORS

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NOTES

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

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HOUSING COMPLEX

A NOTE FROM OUR SPONSOR

Alejandro Dabdoub
Partner
AOG Living

The US remains the largest global commercial real estate market—and an attractive target for investors. Past return performance, favorable growth and demographics, a strong legal infrastructure, and a diverse asset base continue to appeal to foreign investment.

Home is where you hang your hat, as musician Leon Redbone famously observed. He's right, of course, but where we live today has evolved over the course of human history into so much more than a mere address or even a basic necessity to seek shelter from the elements.

With respect to apartment complexes in particular, twenty-first century housing in its most aspirational form—when thoughtfully considered, conceived, and constructed—represents a healthy environment for the residents who inhabit these spaces, a sustainable asset for investors who underwrite them, and a safe, thriving space for surrounding communities that welcome them.

When approached with these noble intentions, modern apartment dwellings can:

- Improve residents' health, well-being, and community cohesion,
- Offer powerful, creative solutions to some of the most pressing challenges of our time, such as climate change, social inequality, and urban revitalization, and
- Remain profitable investments that provide high financial returns while contributing to a more equitable and resilient future.

LIVING LONGER AND BETTER

Green spaces, eco-friendly designs, communal areas – amenities such as these are found more frequently in modern apartment buildings because they've proven to help foster environments that elevate the quality of life for their residents. Benefits include improved life expectancy, increased community engagement, and the promotion of healthier living habits, all of which contribute to better physical health, mental well-being, and overall longevity.

It begins with intentional design practices. Green building practices, such as using eco-friendly materials and maximizing natural light, contribute directly to physical well-being. Green roofs and urban gardens, for instance, can reduce urban heat island effects, filter air pollution, and create spaces for relaxation.

The Solara development in Rotterdam, New York, for example, was recently featured in the Propmodo newsletter because it managed to achieve "net zero" sustainability status by leveraging its renewable energy sources in creative ways. Solara's carport is covered with solar panels, its walls and roofs are foam-insulated, and its buildings, featuring a vented attic, are positioned to maximize daylight in winter, while adding exterior shading during peak summertime hours.

When residents have access to well-ventilated rooms, reduced pollutants, and better indoor air quality, they can experience fewer respiratory problems and improved cardiovascular health. As a result, they're also more likely to engage in outdoor activities and exercise, which naturally fosters better physical health and decreases risks related to heart disease, obesity, and other chronic conditions. Apartment complexes that offer fitness centers, swimming pools, and walking trails make it easier for residents to incorporate physical activity into their daily routines. It's no secret that regular exercise has been directly linked to improved health outcomes, from reducing blood pressure to improving cognitive function as we age.

Beyond the physical benefits, our psychological well-being is also deeply influenced by where we live. A study from the University of Texas found that environments with better lighting and natural elements contribute to decreased feelings of anxiety and depression. While cluttered or dimly lit rooms can lead to feelings of claustrophobia and stress, the opposite is true of bright, open spaces, which provide visual and psychological relief. Well-organized, aesthetically pleasing spaces have further proven to reduce stress and promote mental health.

Furthermore, integrating nature into urban living spaces – think communal gardens, trees, and water features – helps reduce mental fatigue. Research shows that exposure to natural elements like these and others, even in small amounts, leads to lower cortisol levels, helping individuals manage stress more effectively.

The social dynamic of apartment complexes plays another critical role in residents' mental and emotional health. According to social learning theory, the people with whom we surround ourselves can influence our behaviors and attitudes. Therefore, apartments designed to encourage social interaction – whether through communal kitchens, co-working spaces, and/or event rooms, for example – create opportunities for residents to form meaningful connections, which can buffer against loneliness and social isolation.

The George, a 21-story complex in San Francisco, has set aside nearly a third of its units for middle-income residents, who can enjoy such amenities as a professional bar and a private library with a substantial book collection. There's also access to a neighborhood park, sculpture garden, and community gathering space for arts and educational programs.

Especially in urban settings, loneliness has been linked to negative health outcomes, including heightened risks of cardiovascular disease and cognitive decline. By promoting community interaction, apartment complexes can foster a sense of belonging, which encourages residents to engage in healthier behaviors (participating in exercise groups, sharing meals with neighbors, etc.) that further enhance their quality of life.

Take Los Angeles, one of the largest and most densely populated areas on Earth. One particular section of LA, Alondra, suffers from a man-made phenomenon known as "shade inequity," where a lower ratio of tree canopies generally represents less affluent and less healthy populations. According to environmental statistics, people who live in one particular neighborhood there experience an 87-percent pollution burden, compared to the significantly lower 57-percent score enjoyed by the more leafy and wealthy Manhattan Beach community just a few miles away.

In 2021, a diverse group of Alondra residents banded together to help address this problem. With the help of the Good Shade organization, these proactive volunteers planted dozens of trees in a nearby park that lay otherwise barren. According to organizers, planting costs (including maintenance for the first three years thereafter) can range from $250-$600 per tree. However, each of those trees can yield some $90,000 in direct social, natural, and aesthetic benefits over the life of the tree.

This example of a shared purpose attracted people of all ages and from disparate cultural backgrounds who helped bring not just more shade, but also improved, long-term public health conditions to their immediate community. And such an approach has been adopted on a macro level in places – and with positive results – that might surprise you.

Integrating nature into urban living spaces – think communal gardens, trees, and water features – helps reduce mental fatigue.

STRENGTHENING COMMUNITIES

Certain regions of the world, known as "blue zones," have become famous for the unusually long and healthy lives that their residents enjoy. The Italian island of Sardinia is one such place. Researchers who conducted a formal study of the island's population found that Sardinians' strong community networks proved a decisive factor in their longevity. Closer to home, the Twin Cities community of Fort Worth, Texas is quickly becoming another positive example of blue zone living. More on that in a moment.

Meantime, for residents of apartment complexes that prioritize community living, the individual physical, mental, and emotional health benefits we just discussed in the previous section can extend to the community level as well. Shared living spaces such as lounges, fitness centers, rooftop terraces, communal gardens, and co-working areas facilitate the kind of daily interactions that generate more solid friendships and social networks that go beyond neighborly small talk.

In turn, better social interaction and a supportive community can provide residents with emotional support during challenging times, reducing the likelihood of chronic stress and promoting mental resilience. Medical studies have verified that regular social interaction is associated with lower rates of depression and anxiety. As a result, over time, these meaningful social bonds can lead to a more fulfilling and longer life. In the interim, communal areas also give residents a platform to work together on shared goals, such as local initiatives or sustainability projects, which can lead to a more secure, resilient, and engaged society.

Communities, of course, aren't limited to the apartment buildings themselves, but include the wider neighborhoods in which they exist. And the strength of any community lies in how people interact with each other. In contrast to the isolation often felt in traditional urban living, modern apartment complexes that are designed with communal living in mind can serve as a foundation for better social integration, safety, and collective well-being.

Let's now examine how Fort Worth is succeeding in this regard. Often overlooked as Dallas' "other sibling," Fort Worth is making more of a name for itself. For instance, a decade ago, the city ranked 185 out of 190 metro areas surveyed by the Gallup-Sharecare Well-Being Index in terms of its residents' health and wellbeing. By 2017, just three years later, it had skyrocketed to 31 after adopting several blue zone concepts and practices.

Recognizing the correlation between better health and improved economic development, then-mayor Betsy Price spearheaded efforts to reduce healthcare costs among Fort Worth residents through healthier living. Mayor Price and fellow likeminded civic leaders embraced the blue zones' systematic, environmental approaches to well-being which focus on optimizing policy, building design, social networks, and the built environment. As a result, this made healthy choices the most logical choices for many people who live and work in Fort Worth. The success of those initiatives has since helped make a serious dent in rates of obesity, loneliness, and chronic disease in that community.

Intentionally well-designed housing developments can thus act as economic engines, attracting businesses, increasing property values, and creating jobs.

Another benefit to the close-knit community ethos (even in larger cities like Fort Worth): apartment complexes designed with community in mind often experience lower crime rates due to the "eyes on the street" phenomenon. When residents know their neighbors and are engaged in their community, they are more likely to look out for one another, report suspicious activity, and cultivate a collective sense of responsibility for the safety of the area. This can deter crime because residents feel more accountable to one another and more invested in maintaining a safe and orderly environment.

With close to a million residents, Fort Worth is currently enjoying a boom as one of the fastest growing communities in the United States. Experts predict that its population could swell to 1.2 million by 2030, making this region a potentially lucrative opportunity for modern apartment dwelling investors. Blue zone concepts incorporate many of the same health and wellbeing ideas found in modern apartment buildings. So, if this approach can succeed in places as sprawling as the Dallas-Fort Worth metroplex, why not elsewhere in similar big cities?

BUILDING ETHICALLY, BENEFITTING ECONOMICALLY

Modern apartment complexes as we've been describing them can further benefit their communities by contributing significantly to the broader revitalization of urban areas. For example, many mixed-use apartment complexes that include retail spaces, dining options, and entertainment facilities breathe new life into previously underserved neighborhoods. The building and ongoing maintenance of these apartment complexes generate employment opportunities in fields such as construction, energy efficiency retrofitting, and property management.

Intentionally well-designed housing developments can thus act as economic engines, attracting businesses, increasing property values, and creating jobs. Developments that feature vibrant and attractive areas for residents and visitors alike spur additional investment and economic growth. They can also provide housing for a diverse range of income levels, allowing for socioeconomic integration that can further strengthen the community's resilience.

Forward-thinking revitalization of this kind helps reduce urban blight, homelessness, and economic stagnation, causing ripple effects that can lead to more thriving, self-sustaining communities. By building structures with inclusivity in mind, developers and investors help people from different backgrounds live and work together, thereby fostering better understanding, tolerance, and cooperation for a healthier society.

With growing awareness around environmental sustainability and social responsibility, investors are increasingly desiring the long-term value associated with these types of ethical real estate ventures. Projects that emphasize eco-friendly materials, energy-efficient buildings, and social spaces that serve not just the affluent, but also a broad spectrum of society are becoming more attractive to globally conscious investors.

For instance, apartment complexes that incorporate green technologies – solar panels, rainwater harvesting, energy-efficient appliances, and the like – help reduce the development's carbon footprint while lowering residents' utility costs, thus increasing both demand and property values. As a result, sustainability is no longer a buzzword in real estate, but now a necessity. Because, as cities grapple with the effects of climate change, rising energy costs, and growing populations, the need for sustainable developments has never been greater.

Tenants are increasingly prioritizing sustainability in their living choices, with a growing number opting for energy-efficient, eco-friendly homes – a trend leading to higher occupancy rates and lower turnover in sustainable buildings. From an investor's standpoint, this helps ensure steady cash flow. Sustainable buildings also prove more resilient to future regulations and market shifts, making them less risky investments over time.

As cities push for stricter environmental standards, developments that already meet these benchmarks will be at a competitive advantage, avoiding costly retrofits and fines. Such properties often receive government incentives or tax breaks as well, further boosting investors' returns. Which helps explain why savvy investors are increasingly being drawn to the idea of "impact investing" to focus their intentional dollars on ethical projects that provide both financial returns and measurable social or environmental benefits.

Savvy investors are increasingly being drawn to the idea of "impact investing" to focus their intentional dollars on ethical projects that provide both financial returns and measurable social or environmental benefits.

PROFITING WITH A PURPOSE

Real estate investment has traditionally fixated predominantly on maximizing financial returns. But as society evolves, so, too, is the real estate sector. More investors are recognizing that profitability needn't come at the expense of ethics. In fact, ethical investments that prioritize social, environmental, and community-focused outcomes are proving to be both sustainable and financially rewarding. As modern apartment complexes become more than just places to live, they offer a unique opportunity for ethically minded investors to make a meaningful impact while still securing attractive returns.

Ethical real estate ventures can attract the growing wave of socially conscious investors and tenants alike, while becoming the backbone of healthier, safer, and more connected communities. By fostering social interaction, reducing crime, and revitalizing urban spaces, these developments provide lasting value to investors, residents, and the cities they inhabit. As we continue to rethink urban living, the social blueprint laid out by these kinds of apartment complexes offers a promising vision for the future of community and city life.

Residents who choose to live in such dwellings can also benefit financially, according to the Transportation Research Board (part of the National Academies of Sciences, Engineering, and Medicine). By living in thoughtfully designed urban villages, they can reduce their need for vehicles that depreciate and generate virtually no equity. Their real estate, by comparison, tends to appreciate in value, particularly in urban settings where revitalization is being prioritized.

In today's urban landscape, the idea of a well-designed apartment complex goes far beyond creating attractive buildings. When thoughtfully designed, they're holistic approaches to improving health, well-being, and community cohesion. By incorporating green spaces, communal areas, and opportunities for social interaction, they can help extend lifespans, reduce chronic illness, and cultivate happier, more connected communities.

For example, according to the American Journal of Preventative Medicine, residents of walkable neighborhoods (where many mixed-use apartment buildings exist) weigh between six and 10 pounds less than people who live in more sprawling areas. Ultimately, better-designed living spaces are investments in the improved quality of life both for individuals and society as a whole.

As we've discussed, investing in affordable housing developments meets a critical social need and boosts local economies by providing jobs, increasing demand for local services, and stabilizing neighborhoods. Inclusive developments ensure that a diverse range of individuals can benefit from safe, modern living spaces, further contributing to economic upliftment. Affordable housing, in particular, has been shown to reduce poverty rates and spur economic growth by improving the financial stability of residents, which in turn increases consumer spending and local business development.

Ethically bound investments in real estate offer powerful solutions to some of the most pressing challenges of our time: climate change, social inequality, and urban revitalization. By emphasizing sustainability, social impact, and economic upliftment, investors who participate in these purpose-driven projects are investing in the long-term economic health of the communities in which they live and serve. In so doing, they can achieve high financial returns while contributing to a more equitable and resilient future where everyone profits.

ABOUT THE AUTHOR

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