PGIM REAL ESTATE

INVESTMENT RESEARCH

2023 GLOBAL OUTLOOK

FINDING VALUE AFTER THE GREAT RESET

MAY 2023

For Professional Investors only. All investments involve risk, including the possible loss of capital.

High Conviction Investment Themes

We identify two categories of opportunities we believe are among the most attractive on a risk-adjusted basis in current market conditions:

STRUCTURAL

Equity & Debt:

Deploying capital into high conviction strategies for which returns are primarily driven by income growth that is supported by structurally rising demand and high occupancy, and that grows in excess of the rate of inflation.

CYCLICAL

Equity:

Targeting capital growth-driven opportunities that are unique to the current cycle, linked to repricing, capital market dislocation and short-term cyclical recovery plays.

Debt:

Higher yielding, short-term lending opportunities across the capital stack, linked to the growing global funding gap, including transitional debt, bridge financing and mezzanine lending strategies.

PUBLIC MARKETS

With the correction in private markets still ongoing, REITs offer an attractive entry point and the potential for taking listed names private

MEXICO INDUSTRIAL

Acquisition and development of Mexico industrial properties that service increasingly value-added manufacturing industries

STUDENT & SENIOR LIVING

Operational living sectors are set to benefit from strong age demographic tailwinds, and offer potentially higher returns to investors

TARGETED GRADE A OFFICES

Tight supply and affordable rents support selective CBD investment opportunities where ESG criteria are being met

TOURISM-DRIVEN REAL ESTATE

Recovering cross-border travel is boosting demand for tourism-related real estate sectors like prime high street retail and hotels

ALL REGIONS

LOGISTICS

Demand for logistics space remains robust, driving equity and financing opportunities in prime markets, fast-growing segments and selected development projects

AFFORDABLE RENTAL HOUSING

The resilient income streams generated by affordable housing are attractive, with worsening affordability and rising urban populations driving demand

DATA CENTERS

Demand for data centers remains structurally strong, driven by the secular growth of digitalization across all major economic sectors

LENDING INTO THE FUNDING GAP

Bank regulatory pressures and falling values mean a funding gap is emerging, opening up opportunities for nonbank lenders across the capital stack

Investment Opportunities — Summary

Region	Capital Type	Investment Opportunity	High Conviction Theme	Key Value Drivers	% Correction	Timing		
AMERICAS	EQUITY	Affordable Rental Housing	Structural	Income Demographics	0-24%		'24	'25
		Data Centers	Structural	Digitalization	25-49%		'24	'25
		Logistics	Structural	Digitalization	0-24%		'24	'25
		Mexico Industrial	Structural	Nearshoring, Digitalization	25-49%		'24	'25
		Public Markets	Cyclical	Re-Rating	75%+	'23		
	DEBT	Affordable Rental Housing	Structural	Income Demographics	0-24%	'23	'24	'25
		Data Centers	Structural	Digitalization	25-49%	'23	'24	'25
		Logistics	Structural	Digitalization	0-24%	'23	'24	'25
		Mexico Industrial	Structural	Nearshoring, Digitalization	25-49%	'23	'24	
		Lending Into the Funding Gap	Cyclical	Funding Gap	25-49%	'23	'24	
APAC	EQUITY	Affordable Rental Housing	Structural	Income Demographics, Affordability	75%+	'23	'24	'25
		Data Centers	Structural	Digitalization	25-49%		'24	'25
		Logistics	Structural	Digitalization	50-74%	'23	'24	'25
		Targeted Grade A Offices	Structural	Decarbonization, Affordability	50-74%		'24	'25
		Tourism-Driven Real Estate	Cyclical	Tourism, Age Demographics	75%+	'23		
	DEBT	Affordable Rental Housing	Structural	Income Demographics, Affordability	75%+	'23	'24	'25
		Data Centers	Structural	Digitalization	25-49%	'23	'24	'25
		Logistics	Structural	Digitalization	50-74%	'23	'24	'25
		Targeted Grade A Offices	Structural	Decarbonization, Affordability	50-74%	'23	'24	'25
		Lending Into the Funding Gap	Cyclical	Funding Gap	50-74%	'23	'24	
		Tourism-Driven Real Estate	Cyclical	Tourism, Age Demographics	75%+	'23	'24	
EUROPE	EQUITY	Affordable Rental Housing	Structural	Income Demographics, Affordability	25-49%	'23	'24	'25
		Data Centers	Structural	Digitalization	50-74%	'23	'24	'25
		Logistics	Structural	Digitalization, Nearshoring	75%+	'23	'24	
		Senior and Student Living	Structural	Age Demographics	25-49%		'24	'25
		Targeted Grade A Offices	Structural	Decarbonization	50-74%		'24	'25
	DEBT	Affordable Rental Housing	Structural	Income Demographics, Affordability	25-49%	'23	'24	'25
		Data Centers	Structural	Digitalization	50-74%	'23	'24	'25
		Logistics	Structural	Digitalization, Nearshoring	75%+	'23	'24	'25
		Senior and Student Living	Structural	Age Demographics	25-49%	'23	'24	
		Targeted Grade A Offices	Structural	Decarbonization	50-74%		'24	'25
		Lending Into the Funding Gap	Cyclical	Funding Gap	50-74%	'23	'24	

High Conviction Theme
- Structural
- Cyclical

Key Value Drivers
Driving key components of returns including income, occupancy levels, expansion potential and expected NOI growth.

% Correction
Showing our estimate of how much of the correction in headline values has already taken place as of May 2023.
- 0-24%
- 25-49%
- 50-74%
- 75%+

Timing
An estimate of when the opportunity is likely to be most attractive on a relative basis over the next few years.

Strategic Allocation Recommendations

Global repricing is happening quickly across the board and it is still playing out, making benchmark-driven investing difficult. Many of the opportunities we identify in this report are contingent on this reset of global real estate values continuing, taking pricing to levels that make sense in order for returns to compete for capital against other financial asset classes. Aside from secure senior debt plays that offer a high degree of capital protection through the cycle, timing will be key to successfully executing structural and cyclical investment strategies.

According to our forecasts, global real estate returns will be under pressure over the next 12 months or so – and many investors will be on the sidelines until the repricing runs its course. Below, we identify several factors that are key to determining strong relative performance, and underpinning the decision-making process to assess when to re-enter the market, in what sectors and markets, and through what type of capital.

Emphasis on structural investment opportunities

In a repricing market, real estate investors need to focus on what they can control – income. Faced with an uncertainty about the rental growth outlook as global recession fears linger, investors should target sectors and markets that offer a resilient income profile driven by long-term structural trends – notably basic needs such as affordable and senior living, and logistics and data centers linked to the ongoing digitalization of global societies. While there is uncertainty about how the repricing plays out, acquiring assets with resilient cash flow – and some growth potential – at lower capital values than in recent years looks an attractive proposition on a long-term buy-and-hold basis.

Increase debt investments

History tells us that debt outperforms during periods of uncertainty and falling values. This is especially the case this time round as there is a legacy of low leverage providing attractive entry points, and also – unlike in some downturns – interest rates and lending spreads have risen, boosting returns. Opportunities for nonbank lenders are growing and most major investment opportunities identified can be accessed this year via a debt angle. Senior debt offers capital protection, especially when lending against assets that are benefiting from favorable structural trends, and a strong income return at significantly higher lending rates compared to the last cycle, while higher yielding and junior debt investment opportunities are arising as the funding gap grows.

Pricing and timing are crucial

History tells us that market conditions such as today's carry significant downside risks. Values have fallen, but could still fall further in the near term, especially if a recession takes hold and occupier stress prompts an overshooting of the correction beyond just the reset driven by higher interest rates. The risk of recording value losses in the near term is a real one for investors deploying capital now, and this needs to be compensated for in terms of higher returns.

As such, it is clear that investors need to stay patient and disciplined. Initially, it may be the case that only poorer quality assets are available for sale at lower valuations – avoiding temptation to deploy capital for the sake of it is critical. Our research shows that optimal timing will be determined by how the repricing plays out and whether broader global recession risks materialize. Assuming a slowdown but no severe recession, opportunities are now emerging in senior debt at higher lending rates, high yield debt linked to the growing funding gap and in structural growth-driven sectors where the repricing has advanced sufficiently, such as apartments and logistics. In other sectors and markets, until recession risks have clearly passed, we advocate a degree of caution and many cyclical equity opportunities are for 2024 onwards once the path is clearer.

Diversification

One thing we can be sure about is that there are significant benefits to sector and geographical diversification during periods of downturn. Unanticipated events will affect values in certain countries, regions or sectors and holding a diversified portfolio, including across equity and debt, will undoubtedly lead to less volatile outcomes than highly concentrated approaches.

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Given our assessment of the outlook for regional economies and real estate markets, we identify the investment opportunities that we see as being among the most attractive on a risk-adjusted basis during the next 12 months.

PART I

GLOBAL OVERVIEW

AUTHOR: GREG KANE

The Great Reset of Real Estate Values

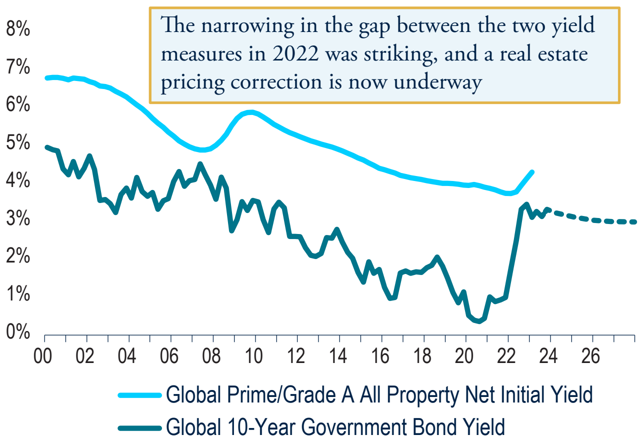
The past 18 months have been something of a wild ride for global real estate investment markets. As a relatively small part of the global financial landscape, the reality that has played out is that real estate values are vulnerable to major fluctuations in the global cost of capital. In aggregate, income generation from real estate is fairly steady and predictable – especially as it has been a low supply cycle – and value swings in recent years have largely been determined by a single external factor: movements in wider market interest rates.

As such, the sharp rise in global interest rates that took hold in the second half of 2022 on the back of a pick-up in global inflation is driving what we're calling a "great reset" of real estate values.

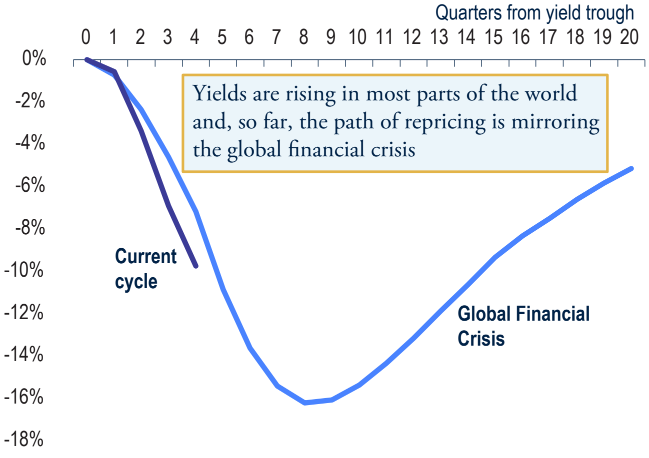
Government bond yields, investment-grade credit yields and equity dividend yields have all moved higher over the past year, and real estate must offer a comparable return in order to compete for capital at the margin. Borrowing costs are also higher, restricting capital availability and limiting the amounts investors can bid for assets. These factors in combination can only mean one thing: a reset of real estate pricing to higher yields – and the adjustment process is now well underway (**Exhibit 1**).

Exhibit 1: An Interest Rate-Driven Repricing Is Now Well Underway

10-Year Gov't Bond Yield and Estimated Global All Property Prime/Grade A Yield – Major Developed Markets (%)



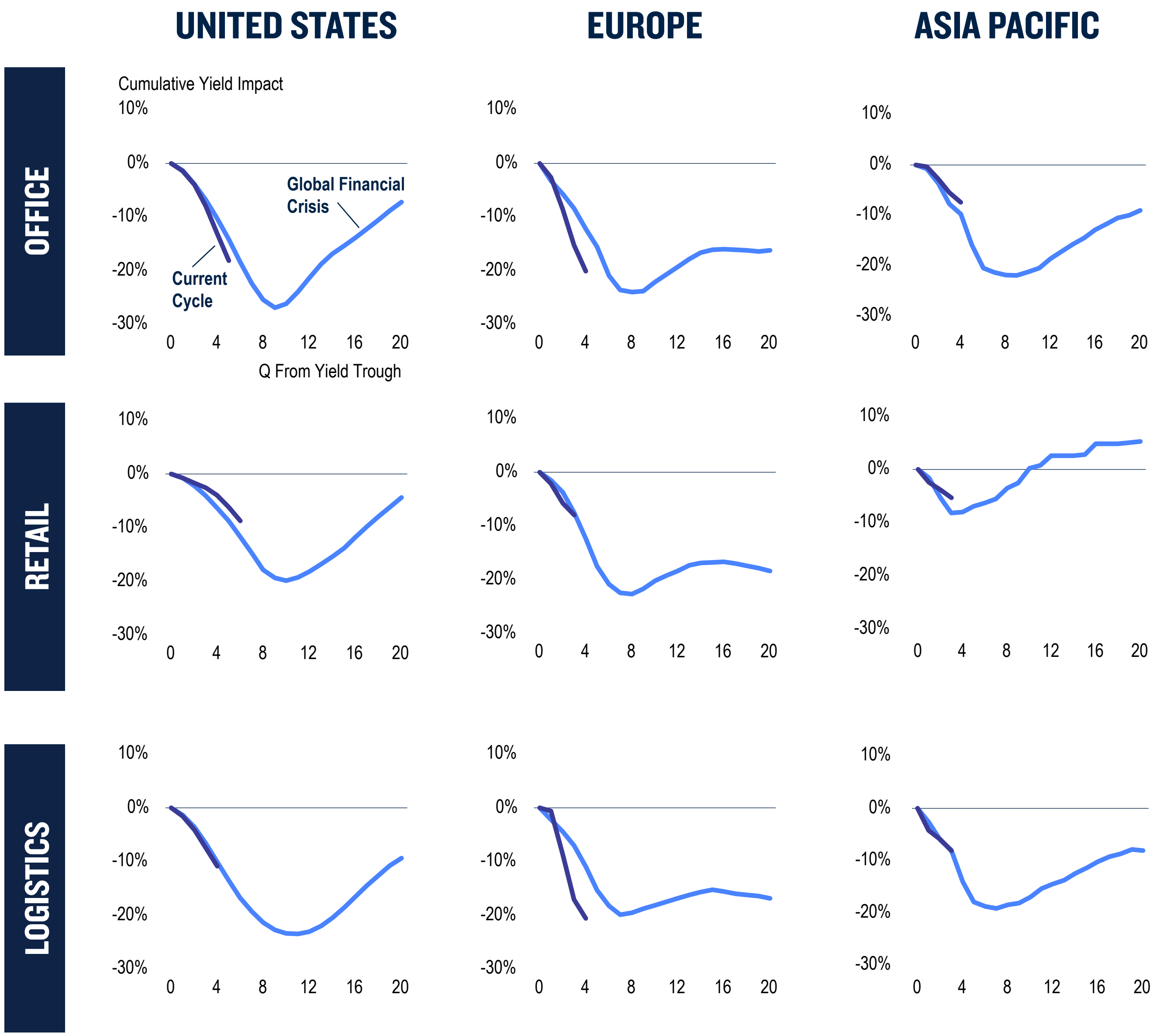
Cumulative Yield Impact on Values – Global All Property Prime/Grade A (%)

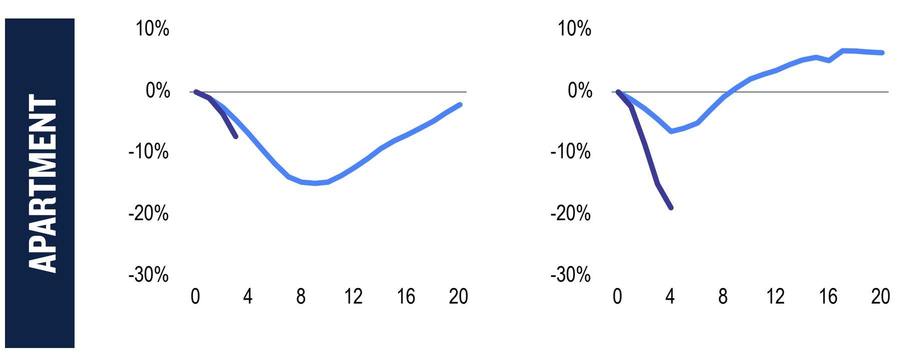


Sources: CoStar, Cushman & Wakefield, JLL, PMA, Oxford Economics, Consensus Economics, PGIM Real Estate. As of May 2023.

Exhibit 2: Impact of Yield Correction on Values Varies Across Markets

Cumulative Yield Impact on Prime/Grade A Values by Sector and Region (%)





The repricing is occurring at different speeds around the world. Values have moved most sharply across Europe and in U.S. office markets. The retail impact is milder so far as the sector has been repricing for some time. Yield expansion has also been more moderate across the Asia Pacific region.

Sources: Cushman & Wakefield, JLL, PMA, Real Capital Analytics, PGIM Real Estate. As of May 2023

The sharp rise in global interest rates that took hold in the second half of 2022 on the back of a pick-up in global inflation is driving what we're calling a "great reset" of real estate values

Essentially, the notion of values resetting reflects both the external nature of the driver of this re-rating – adjusting to a new permanently higher level of interest rates – as well as how universal it is. While there are differences across sectors and markets so far, almost no parts of the market are escaping the effects entirely, irrespective of occupier performance (**Exhibit 2**).

Traditional problem areas for real estate going into downturns – elevated supply, falling demand, rising vacancy, excessive leverage – look contained, for now at least, yet values in most parts of the private real estate market started to meaningfully adjust in the second half of 2022.

The global financial crisis was caused by a different set of factors – a credit crunch, deep global recession and the near-collapse of large parts of the global financial system, as opposed to the interest rate tightening-driven correction of today. However, the pace of yield shift recorded in 2008 and 2009 is so far proving to be a reasonable guide to the speed of adjustment we're seeing this time round.

There are a few exceptions to this: Europe is seeing a much faster process of adjustment of headline valuation yields, while the adjustment in global retail values is relatively mild so far – mainly because it came into 2022 on the back of its own reset, which had already pushed yields higher on the back of a global increase in online spending.

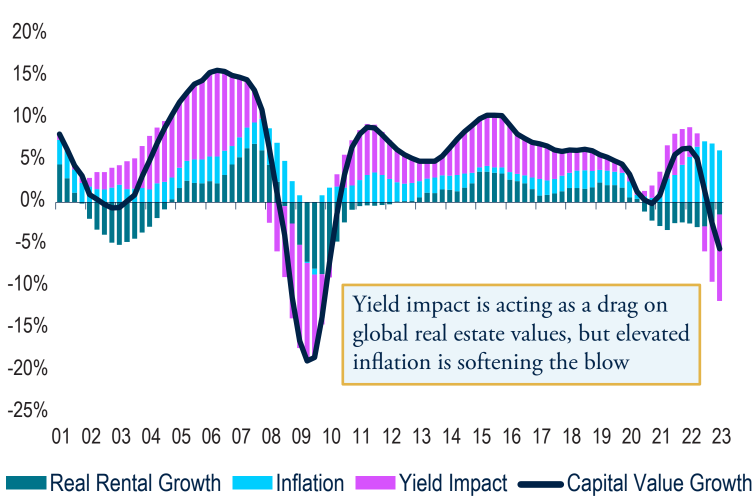
In contrast, apartment and logistics markets came into 2022 on the back of a period of heightened investor interest that drove yields down to historic lows in many global markets. Asia Pacific markets are once again exhibiting a milder path of correction, although the region average masks some differences, including more significant adjustments in Australia and South Korea than in Japan for example.

In terms of the impact of the great reset on investors and lenders, so far it has been mixed. Occupier markets normally lag as a downturn gets underway, with yield expansion occurring up to a year ahead of real rental growth declines. However, headline real estate values are being cushioned by the effect of higher inflation on nominal rents (**Exhibit 3**).

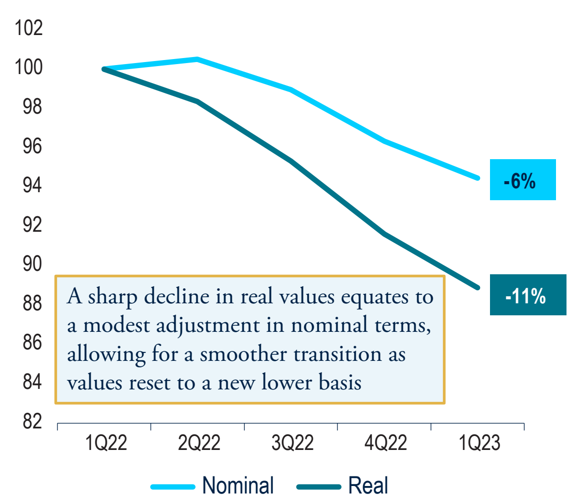
In real terms, headline global values are down 11% over the past year, which is mostly due to the effect of yield expansion. In nominal terms, values are down by just 6%. Over time, real values will be the most important metric as this is what ultimately determines the future value of capital invested today. Yet in the short term, resilience in nominal values is welcome, as it eases the strains on investor and lender balance sheets, and allows for a smoother transition as values reset to a new, lower basis.

Exhibit 3: Capital Values Are Being Cushioned by Higher Inflation

Breakdown of Headline Annual Global All Commercial Property Capital Value Growth (%)



Index of Nominal vs Real Values (1Q22=100)



Sources: CoStar, Cushman & Wakefield, JLL, PMA, PGIM Real Estate. As of May 2023.

What Comes Next?

As the yield-driven price correction plays out, how occupier markets fare will determine how the next phase of the downturn and then recovery goes. If occupier markets hold up, then the repricing will be contained and uncertainty will quickly give way to opportunity. If problems of past cycles are repeated – oversupply relative to demand, rising vacancy, falling rents – then these factors can exacerbate the downturn, driving further value declines and overshooting. The following summarizes how we think things will play out from here.

Occupier Demand Slows, but No Collapse

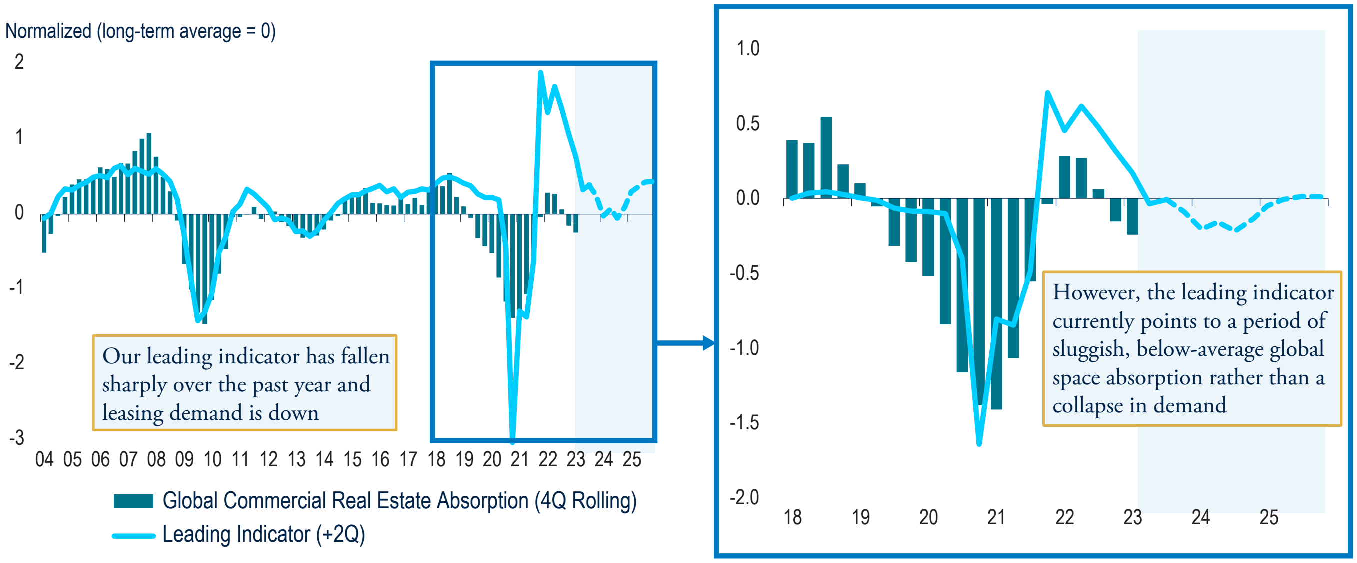
With the repricing ongoing, attention is turning to occupier markets as the global economy flirts with recession – an outcome that is very much a possibility given that the impact of monetary tightening is still to fully feed through into corporate or household activity.

Recession or not, sentiment has fallen a long way over the past year and points toward tougher leasing conditions (**Exhibit 4**). A simple projection of our leading indicator of demand suggests a further weakening of global space absorption over the next couple of years, mainly reflecting a downswing in consumer sentiment and hiring intentions.

However, the shift in sentiment is coming from a relatively strong base. Most major economies have tight labor markets and household sectors that are benefiting from low unemployment, rising wages (at least in nominal terms) and still some ongoing support from a legacy of excess savings built up during the pandemic.

Exhibit 4: Leading Indicator Points to Sluggish Leasing Activity – But No Demand Collapse

Global Commercial Property Absorption Relative to its Long-Term Average and Leading Indicator



Note: In this panel, the leading indicator has been recalibrated to fit the most recent period when the data inputs were disrupted by the COVID-19 pandemic.

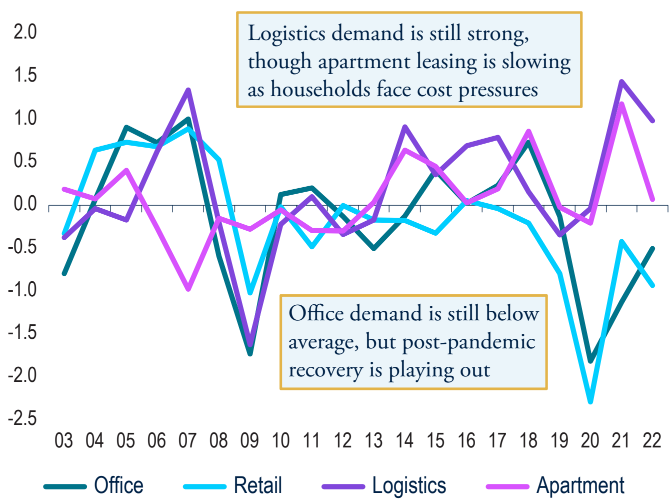
Sources: Oxford Economics, Eurostat, Manpower, CoStar, Cushman & Wakefield, JLL, PMA, PGIM Real Estate. As of May 2023.

What this points to is a softening of demand to below-trend levels rather than an all-out collapse in activity as was recorded in 2009 and 2020 for example. For sure, downside risks dominate – notably the impact of higher interest rates could worsen and governments have far less fiscal firepower than before the pandemic – but so far leasing activity is holding up well.

Differences in the demand story continue to play out across the global sectors. Most notably, logistics operators show little sign of slowing down. Demand remains well above average in most major global markets, as operators look through the near-term headwinds to focus on meeting their long-term supply chain needs that correspond to expectations for further e-commerce demand growth (**Exhibit 5**).

Exhibit 5: Big Divergence in Demand Story Across the Different Sectors

Normalized Global Real Estate Absorption by Sector



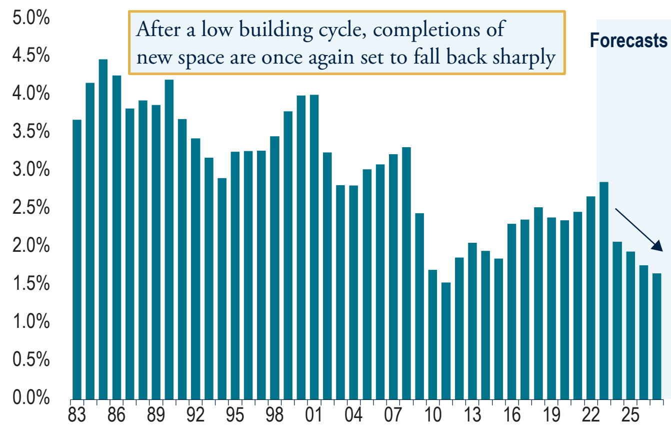
Sources: CoStar, Cushman & Wakefield, JLL, PMA, PGIM Real Estate.
As of May 2023.

At the same time, office and retail absorption remains weak compared to history – although office markets have started to recover some ground after a big drop in demand during the pandemic. Apartment demand had the biggest fall over the past 12 months, driven by a normalization of leasing activity in the United States, in part because higher rents have started to dent affordability in major cities.

Expectations for relatively resilient demand are coming up against a limited supply story. After a low building cycle following the global financial crisis, building activity picked up toward the end of the last decade. However, the pipeline has been curtailed, firstly by the pandemic, which delayed or disrupted many projects, and more recently by supply chain issues, labor shortages, rising costs and, now, falling exit values. All of this adds up to a drop in expected supply growth in the coming years (**Exhibit 6**).

Exhibit 6: Prospects for Rental Growth Are Supported by Low Supply

Net Additions to All Property Supply – Major Global Cities (% existing)



Sources: CoStar, Cushman & Wakefield, JLL, PMA, PGIM Real Estate.
As of May 2023.

Pricing Adjustment Still Has Further to Go

In weaker parts of the market, we expect to see some overshooting – higher risks and weakening occupier performance meaning pricing correcting beyond what is required to simply adjust values to higher market interest rates. On the flipside, parts of the market that are exposed to favorable structural tailwinds and contained supply that support income generation and income growth should see a more limited repricing.

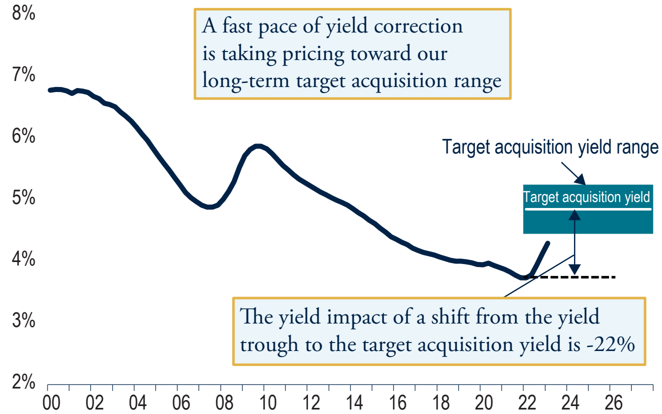
In aggregate, the repricing story still has further to go to fully reflect higher long-term interest rates (**Exhibit 7**). From a trough recorded across major sectors and cities in developed markets in early 2022, prime/grade A yields have already risen about half way to our long-term target acquisition level. The fast pace of correction in yields so far means that, in aggregate, pricing is already close to the lower end of our estimated range.

There Is a Large Wave of Refinancing on the Way

A shift to a higher interest rate environment means borrowing costs on commercial real estate loans have risen and, over the coming years, are expected to remain elevated compared to typical levels recorded during the last cycle (**Exhibit 8**). This implies higher debt returns, but falling values and risks to the economic outlook mean lenders are becoming even more cautious. Tighter underwriting standards and a high degree of selectivity are commonplace, and this is coinciding with a high volume of refinancing.

Exhibit 7: Our Stylized Internal Pricing Model Says There Is Futher to Go

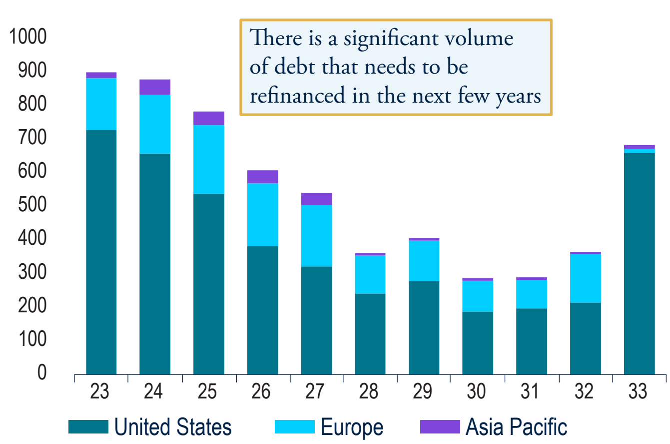
Estimated Global All Property Prime/Grade A Yield – Major Developed Markets (%)



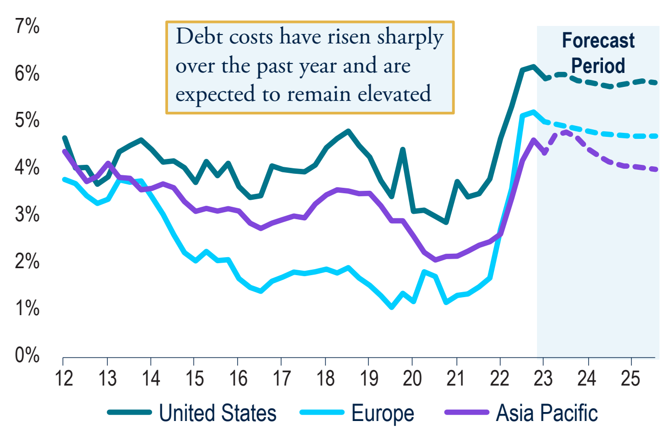
Sources: Cushman & Wakefield, JLL, Co-Star, PMA, PGIM Real Estate. As of May 2023.

Exhibit 8: There Is a Large Wave of Refinancing Coming Due at Elevated Interest Rates

Loan Maturity Profile – Major Global Markets (US$ billion)



Typical Senior Debt Costs by Region – Grade A Office Assets (%)



Note: Estimates cover the United States, UK, Germany, France and Australia. 2033 refers to loan maturities from 2033 onwards.

Source: Mortgage Bankers Association, Bayes Business School, IREBS, IEIF, IFPI, APRA, PMA, CBRE, Bloomberg, PGIM Real Estate. As of April 2023.

Higher debt costs compared to recent years mean that some borrowers will struggle with refinancing their existing loans as asset values fall. Furthermore, lenders are becoming ever more focused on cashflow and debt serviceability, imposing restrictions that constrain leverage for new loans.

Put together, over the next few years, higher borrowing costs, falling values and tighter lending conditions mean that the market will face a widening funding gap – a shortfall of available new debt compared to requirements linked to the servicing, rolling over and repaying of existing loans. While debt will remain available in stronger sectors and markets, in which occupier performance and capital values are supported by favorable structural trends, the dislocation implied by the funding gap will drive further repricing.

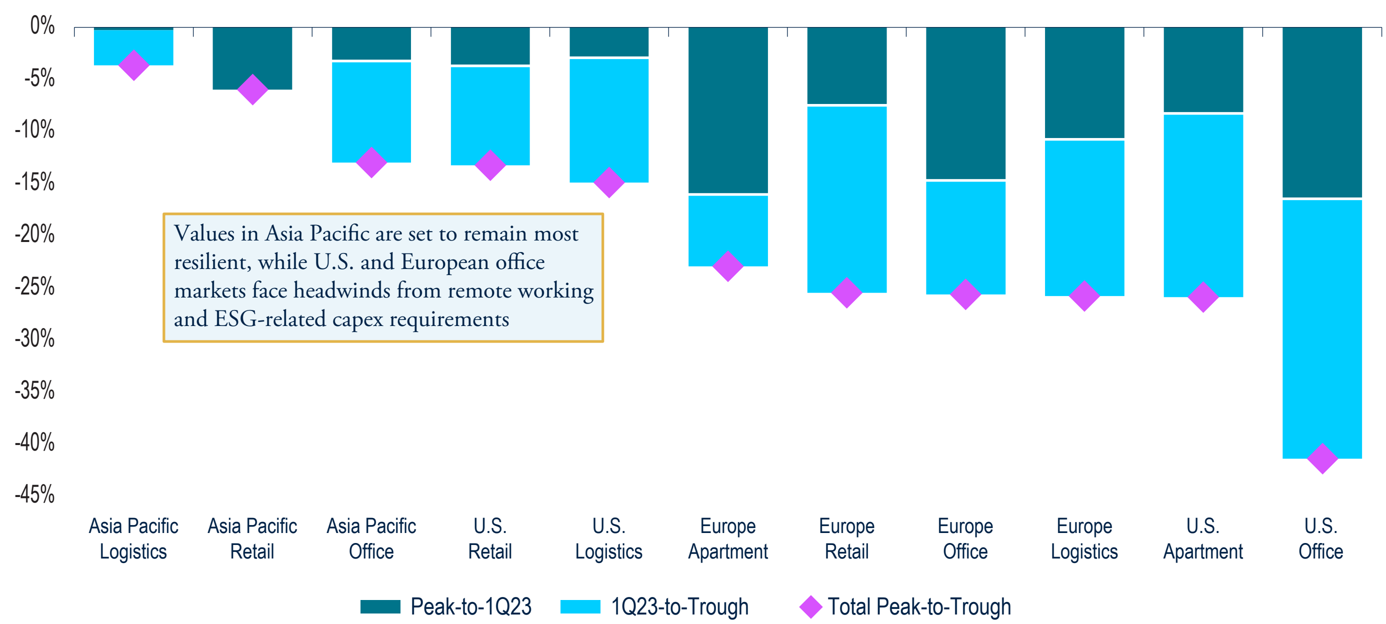
Capital Values to Fall Again in 2023...

In aggregate, our view is that capital values will fall further in 2023 (**Exhibit 9**). This continues to be predominantly driven by yield expansion and restricted debt availability, although we also expect a slowdown in nominal rental growth as inflation falls back.

By region, the most resilient is set to be Asia Pacific with an expectation that values will only fall by about 7% peak-to-trough. That said, there are some differences behind this, with Australia and South Korea recording sharply rising yields, in contrast to Japan, where interest rates remain very low, and China, which is moving into a cyclical growth recovery phase. Several major retail and logistics markets, including in Singapore and Japan, are recording positive capital value growth, while most office markets are recording falling values as demand weakens.

Exhibit 9: Capital Values Are Set to Fall Everywhere Over the Next Couple of Years

Expected Peak-to-Trough Prime/Grade A Capital Value Movements (%)



Sources: Cushman & Wakefield, CoStar, JLL, PMA, PGIM Real Estate. As of May 2023.

Our expectation for both Europe and the United States is for a peak-to-trough capital value decline of about 25%. Within that, offices in the United States are especially exposed as sentiment has turned on the back of falling demand due to remote and hybrid working, rising vacancy and concerns about a growing capex burden. In both regions, apartments are recording a significant yield-driven correction, although values are being cushioned by relatively strong rental growth.

Logistics markets looked most overpriced prior to the downturn, but a swift period of yield expansion along with ongoing occupier strength means that the sector is once again attracting investor interest. Pricing is now stabilizing in some core distribution markets such as the United Kingdom after yields rose by nearly 200 basis points in 2022.

...But a Recovery From 2024 Onwards

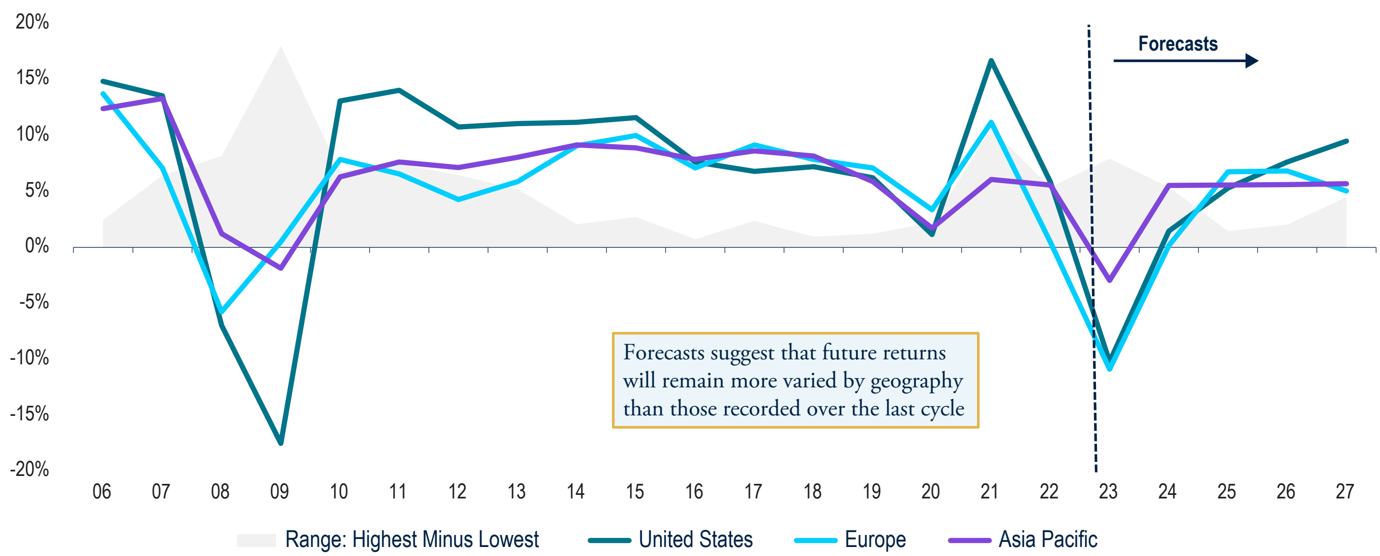
Put all of this together and 2023 is going to be a tough year for global real estate as the value reset plays out. Our forecast is for the MSCI Global All Property Index to deliver returns of about -10% this year, which would be the worst outcome since the global financial crisis (**Exhibit 10**).

As always, the downturn paves the way for the recovery to get the next cycle underway. While the reset will likely continue into 2024 in some markets – and there will undoubtedly be some overshooting in places due to capital shortages and occupier market weakness – returns will start to stabilize and then recover, with new higher yield levels driving expectations of higher long-term potential returns than were possible at the start of 2022.

Since 2019 the fortunes of different sectors and geographies have varied by more than was the case during the last cycle, when returns were highly correlated as yields fell in response to low global interest rates. The pandemic, the subsequent recovery and now the resetting of values to higher interest rates and expected overshooting in some parts of the markets is driving expectations of a greater variation of returns. In such an environment, investors will be able to target outperformance with strategic allocation calls, although heightened risks also point to a significant benefit from taking a diversified approach in today's market.

Exhibit 10: Returns Turn Negative in 2023 Before Recovering in 2024

Annual MSCI All Property Total Return by Region (%)



Sources: MSCI, NCREIF, PMA, PGIM Real Estate. As of May 2023.

REGIONAL SPOTLIGHT

AMERICAS

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Key factors supporting the outlook and opportunities:

- Economic growth is slowing in response to tighter monetary policy, compounded by fading fiscal stimulus.
- Labor markets remain tight despite the economic slowdown, but we expect job gains to turn to losses as the year progresses.
- Affordability is the main constraint to tenant demand across property types. Housing costs have risen faster than incomes, setting the stage for lower rent growth. Commercial tenants are similarly looking for cost savings as profits decline.
- The price discovery process is in the early stages, as investors digest high interest rates and the uncertain outlook for the economy and property markets.
- Debt availability remains constrained, creating lending opportunities at attractive risk-adjusted returns. High debt costs and stricter terms will further constrain transaction volume.

IN BRIEF

Given our assessment of the outlook for the Americas economy and real estate market, we identify the following opportunities as being among the most attractive on a risk-adjusted basis over the next 12 months:

INVESTMENT OPPORTUNITY

Affordable Rental Housing
With housing unaffordable to a large portion of households, the case is strong to build and finance housing that meets demand from middle-income renters

Data Centers
Historically low vacancies are underpinning strong rental growth and returns prospects for U.S. data centers

Logistics
U.S. logistics conditions are moderating but limited downside and a shrinking supply pipeline point to ongoing lending and development opportunities

Mexico Industrial
Nearshoring supports the acquisition and development of Mexico industrial properties that service increasingly value-added manufacturing industries

Lending Into the Funding Gap
Low volatile markets that are demonstrably less sensitive to higher interest rates present ideal targets for real estate lending

Public Markets
With the correction in private markets still ongoing, REITs offer an attractive entry point and route to outperformance

STRUCTURAL CYCLICAL

What Are the Investment Opportunities?

AFFORDABLE RENTAL HOUSING
Structural Opportunities

With housing unaffordable to a large portion of households, the case is strong to build and finance housing that meets demand from middle-income renters

We expect a prolonged period where housing that is affordable to middle-income renters will maintain high occupancies and resilient rents.

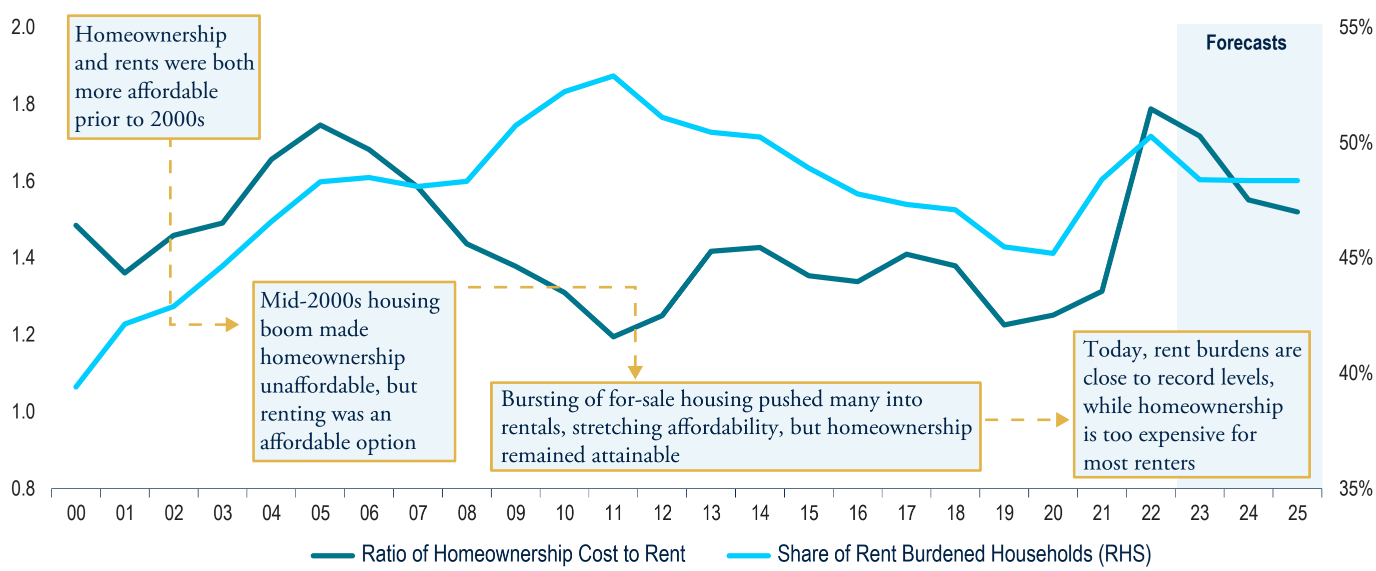
Rising construction costs have inhibited new development, and new regulatory burdens have further increased the cost of new construction. Meanwhile, real incomes have stagnated, lagging growth in real rents in most time periods.

The affordability pressures today can also be linked to the abrupt shutdown in housing development after the global financial crisis and the unprecedented demand spike in 2021 and early 2022, with real rents rising by 14% nationally and by as much as 20-30% in some markets.

During the last period of elevated rent burdens in the early 2010s, some renters were able to take advantage of low housing prices and mortgage rates to move into homeownership. Looking forward, that option is less available to most renter households. The recent rise in mortgage rates follows a significant runup in home prices, pushing ownership costs further out of reach, shown in **Exhibit AM1**. We expect costs to remain elevated relative to the last decade.

Exhibit AMI: Homeownership Costs Will Continue to Support Rental Demand

Ratio of Homeownership Cost to Rent vs Share of Rent Burdened Households



Note: Rent burden measure for 2022 onward assumes similar income and rent distribution as 2021 with income and rent levels increased equally.

Sources: Real Page Analytics, CoStar, Oxford Economics, U.S. Census Bureau, PGIM Real Estate. As of May 2023.

This sets up a prolonged period where housing that is affordable, costing 30% or less of household income, to lower- and middle-income renters will maintain high occupancies and resilient rents, even in a moderate recession. Most rental properties that meet affordability thresholds are classified as class B and C, which typically record less volatile rental growth than higher-end class A apartments (**Exhibit AM2**).

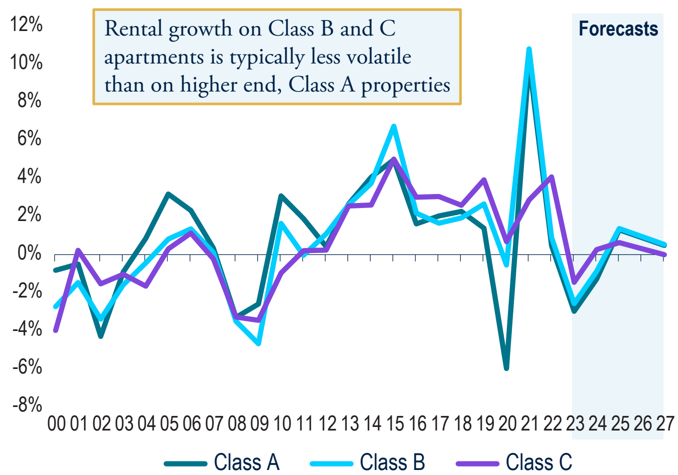
In most recessionary environments, class A apartments experience larger rent losses than class B and, especially, class C apartments. We expect the coming recession to be typical, with affordable apartments providing both rent and occupancy resilience.

Affordability will remain stretched in many higher cost locations along the West and East Coast. As shown in **Exhibit AM3**, the median family in metros such as New York, Miami, San Diego, Boston and Los Angeles have total expenses in excess of their income, meaning they are borrowing to meet those expenses, including rent.

More recently, many Sunbelt markets have had housing affordability eroded too. We expect the opportunity set to broaden into lower cost locations with net migration from other areas of the country. In these Sunbelt areas, the need for affordable living accommodations is growing rapidly. This opportunity looks particularly attractive in the state of Florida, where rent-to-income ratios have increased substantially in Miami, Fort Lauderdale, Tampa and Orlando.

Exhibit AM2: Rental Growth Steadier in Lower Quality Housing

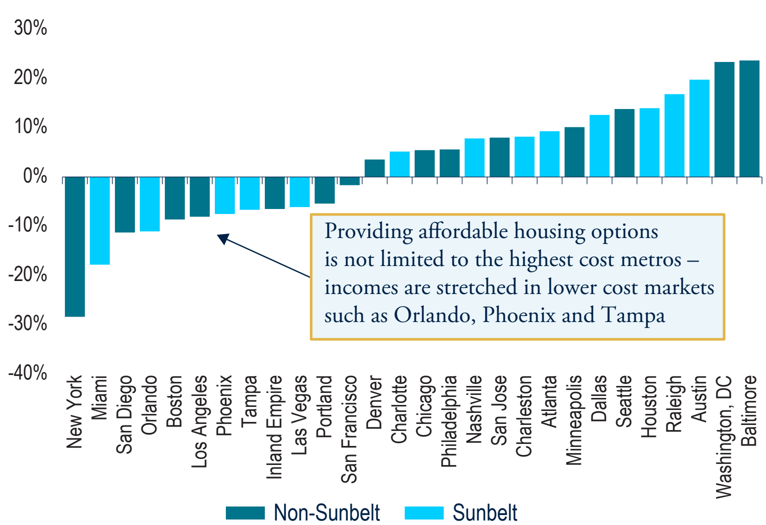
Real Annual Apartment Rental Growth by Class (%)



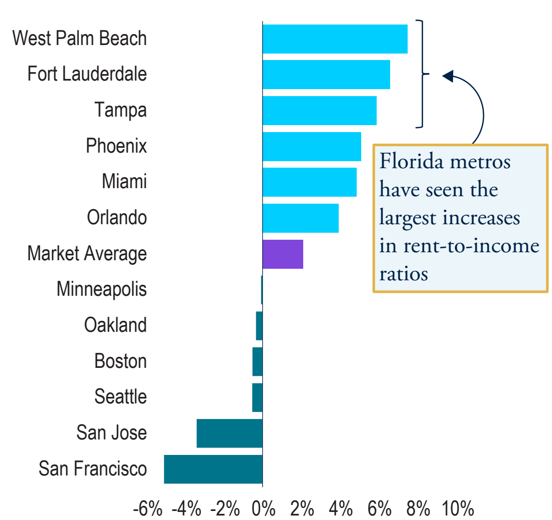
Sources: Real Page Analytics, PGIM Real Estate. As of May 2023.

Exhibit AM3: Lower Cost Locations Also in Need of Affordable Rentals

Family Income Surplus(+)/Deficit(-) After Expenses



Change in Rent-to-Income Ratio by Market, 2019-2022 (%)



Sources: Economic Policy Institute, PGIM Real Estate. As of May 2023.

DATA CENTERS
Structural Opportunities

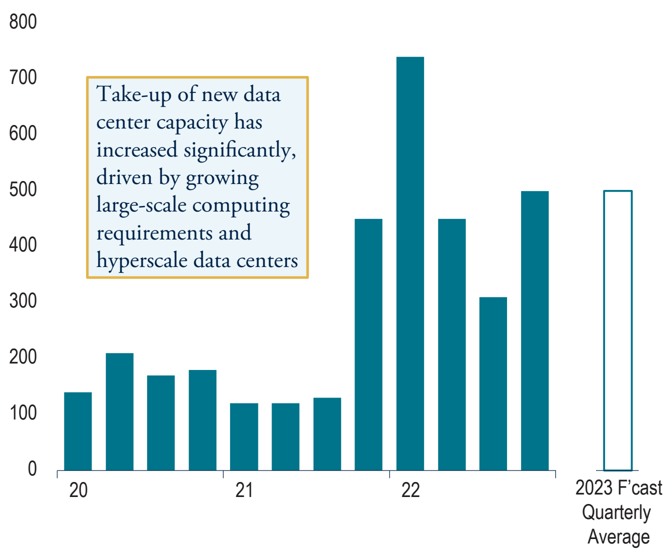
Historically low vacancies are underpinning strong rental growth and returns prospects for U.S. data centers

Despite economic headwinds, demand for data centers remains strong with take-up in 2022 reaching a record high of 2000 megawatts (**Exhibit AM4**). Vacancy rates in key markets of North Virginia and California fell to all-time lows, even though there was a pick-up in construction. Vacancy in other major markets such as Dallas and Chicago also fell significantly over the last 18 months.

Rental growth remains broad based with key markets reporting the strongest pace. As demand for data storage and processing show no sign of slowing, the momentum in net absorption is set to continue and rental growth is set to accelerate in the coming quarters (**Exhibit AM5**).

Exhibit AM4: Data Center Leasing Activity Remains Robust Supported by Strong Demand for Hyperscale

U.S. Data Center Take-Up (megawatts)

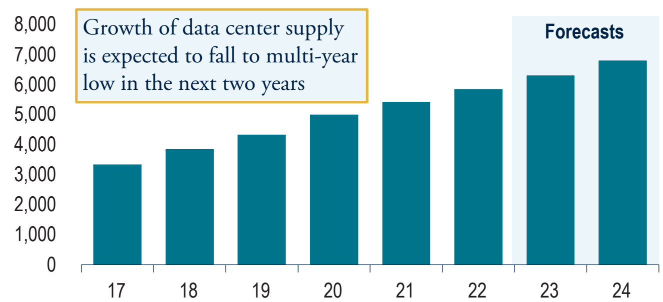


Note: Take-up growth is estimated from the growth of the global ICT sector.

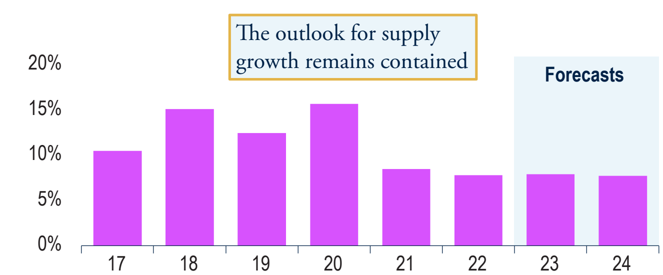
Sources: Green Street, PGIM Real Estate. As of May 2023.

Exhibit AM5: Contained Supply Growth Provides Support for the Rental Growth Outlook

U.S. Data Center Supply by Commissioned Power (megawatts)



Annual Supply Growth (%)



Sources: Structured Research, JLL, Green Street, Cushman & Wakefield, DCByte, PGIM Real Estate. As of May 2023.

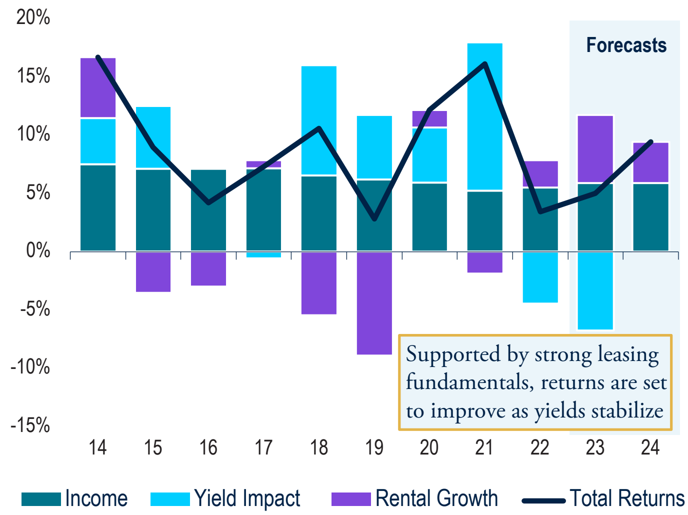
Public cloud companies remain the largest data center tenants and are responsible for the bulk of leasing activities. The secular shift toward the public cloud, and hence the demand for heavy-capacity and hyperscale data centers, means that major markets with dense data center networks and cables will continue to draw the strongest interest. Although this leads to an increased concentration of supply in these markets, it is much needed and will continue to boost market scale and support ongoing dominance of markets like North Virginia.

Supported by the strong leasing fundamentals and rental growth prospects, returns are set to improve as yields start to stabilize in the next few quarters. Total returns are forecast to average about 7% per year over the next two years for major markets (**Exhibit AM6**).

The shift toward modern, hyperscale facilities, increasingly driven by environmental goals, implies high growth and structural opportunities for investors. However, investors should stay selective and focused on key markets including Northern Virginia, the New York metro area and Silicon Valley where scale and network density will remain a proof of interest from hyperscale tenants.

Exhibit AM6: Returns to Pick Up on the Back of Rental Growth and Stabilizing Yields

Estimated Annual U.S. Data Center Total Returns (%)



Note: Returns are for unlevered, powered shell and core assets in major markets. 2022 figures are estimated.

Sources: MSCI, Green Street, CBRE, Structured Research, PGIM Real Estate. As of May 2023.

The shift toward modern, hyperscale facilities, increasingly driven by environmental goals, implies high growth and structural opportunities for investors

LOGISTICS
Structural Opportunities

U.S. logistics conditions are moderating but limited downside and a shrinking supply pipeline point to ongoing lending and development opportunities

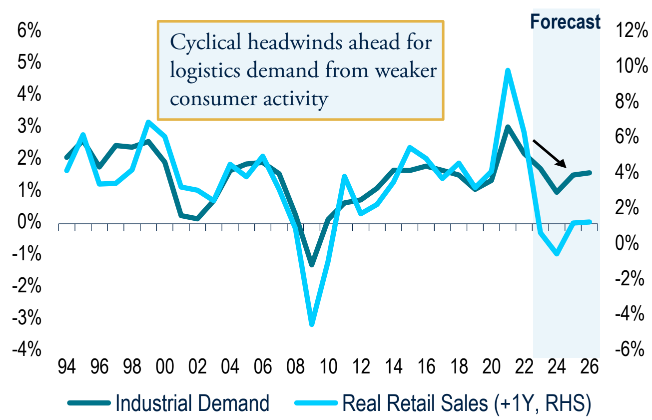
Logistics capital values are down 6% through the first quarter of 2023, with further value losses of 11% expected due to the broad repricing of commercial real estate. And yet, transaction volume is limited despite today's 5% cap rate providing adequate risk premium over 3.5% for 10-year U.S. Treasury bonds. Bid-ask spreads remain wide with valuations yet to reflect a movement in asset prices commensurate with cap rates quoted by brokers. As such, lending on logistics real estate and ground-up development present the most viable entry points for investors.

The sector will face more headwinds in the near term. Year-over-year growth in real retail sales has turned negative and is set to slow further through 2023, which links to slower e-commerce growth (**Exhibit AM7**).

Near-term supply additions are set to be elevated, but as **Exhibit AM8** shows, there is a notable drop off beyond this year. Construction starts have slowed sharply in response to the spike in construction financing costs. Quarterly starts are down 48% in the first quarter of 2023 relative to their peak.

Exhibit AM7: Logistics Sector Facing Near-Term Demand Headwinds

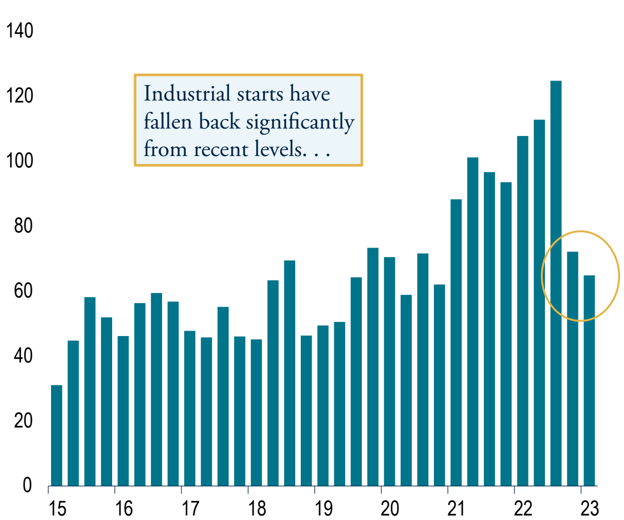
Annual Logistics Demand Growth and Real Retail Sales Growth (%)



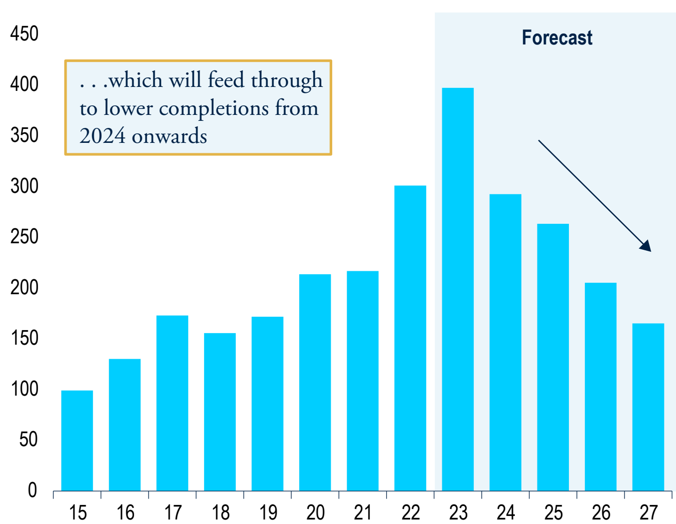
Sources: CoStar, Oxford Economics, Moody's Analytics, PGIM Real Estate. As of May 2023.

Exhibit AM8: Supply Pipelines Are Thinning Rapidly

Quarterly Logistics Construction Starts (million square feet)



Annual Logistics Net Inventory Additions (million square feet)

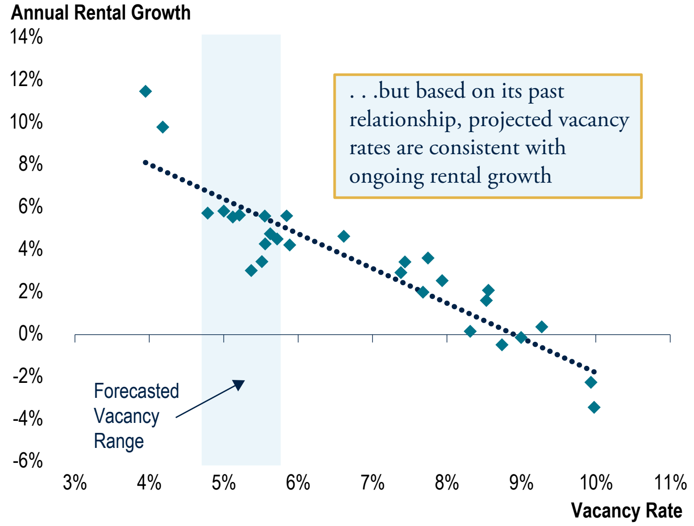


Sources: CoStar, PGIM Real Estate. As of May 2023.

Exhibit AM9: Vacancies to Remain Historically Low, Pressuring Rents Higher

Logistics Vacancy Rate (%)

Logistics Vacancy Rate vs Annual Rental Growth, 1995-2022 (%)



Sources: CoStar, PGIM Real Estate. As of May 2023.

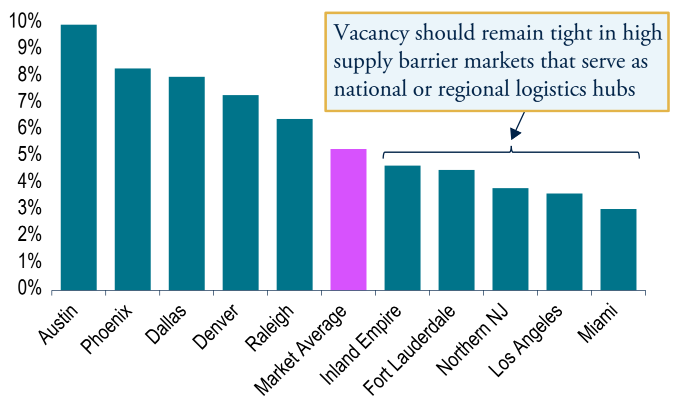
Although vacancies will rise and rental growth moderate, the market will remain healthy by historical standards. Real e-commerce sales are currently 50% higher than at year-end 2019 and firms continue to build out supply chains in response to higher real online sales. We expect sales to move higher over the forecast as e-commerce penetration of overall retail sales continues to increase, though at a more modest pace.

Based on its historical relationship, rental growth will hold up well given our forecast for vacancies to slowly rise to 6% by 2027 (**Exhibit AM9**).

This outlook varies across the United States. Differences in the pace of supply and demand growth will lead to a growing divergence in market performance, requiring a more location-specific investment strategy (**Exhibit AM10**).

Exhibit AM10: Supply Constraints Will Keep Vacancies Low in Major Coastal Markets

Average Vacancy Rate Forecasts by Metro – 2023-2027 (%)



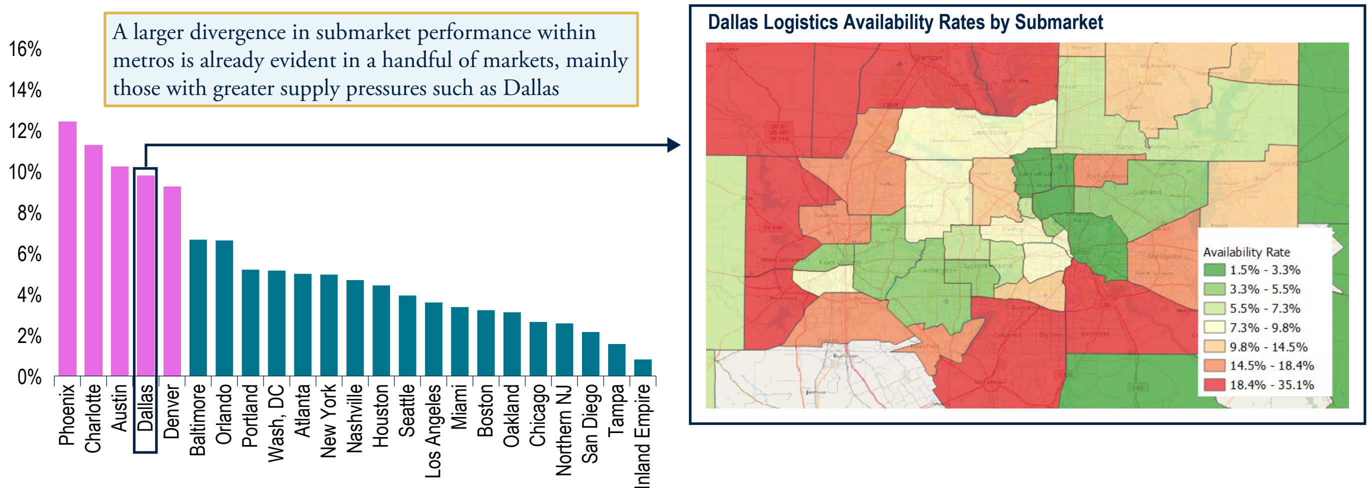
Note: The Inland Empire is a metropolitan area and region inland of and adjacent to coastal Southern California, centering around the cities of San Bernardino and Riverside, and bordering Los Angeles County to the west.

Sources: CoStar, PGIM Real Estate. As of May 2023.

Differences are already emerging in 2023. A handful of metros, including Phoenix, Charlotte, Austin, Dallas and Denver, have a wide divergence in submarket availabilities (**Exhibit AM11**). Submarket selection will be important when identifying opportunities in these metros.

Exhibit AM11: Submarket Conditions Will Diverge Further as Supply Is Delivered

Range of Submarket Availability Rates by Metro (%)



Note: Range reflects interquartile range of availability rates across submarkets within a given metro area.

Sources: CoStar, PGIM Real Estate. As of May 2023.

Differences in the pace of supply and demand growth will lead to a growing divergence in logistics market performance, requiring a more location-specific investment strategy

MEXICO INDUSTRIAL
Structural Opportunities

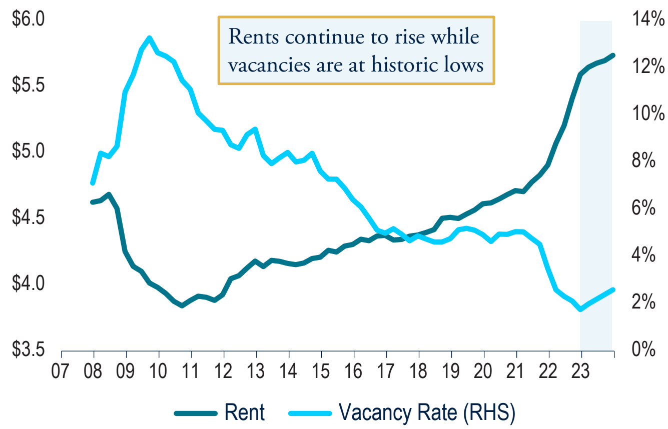
Nearshoring supports the acquisition and development of Mexico industrial properties that service increasingly value-added manufacturing industries

Trade volume from Mexico to the United States is increasing as nearshoring gains momentum. The industrial vacancy rate is 2%, with markets along the border reporting even lower numbers. Mexico's manufacturing sector is shifting to produce higher value-add products, driving higher rents. As of 1Q23 – following a sharp increase in per establishment productivity that started in 2021 – annual industrial rents are up 14% year-over-year in U.S. dollar terms across Mexico, compared to a 10-year average growth rate of 2% (**Exhibit AM12**).

For example, as shown in **Exhibit AM13**, automotive production is shifting toward higher-cost electric vehicles (EV). In 2022, the United States imported roughly US$3 billion worth of EVs from Mexico, an increase of 34% compared to the prior year. With incentives in place from the 2022 Inflation Reduction Act (IRA), automakers will continue to invest in EV manufacturing in Mexico, the lowest-cost labor market in North America. At the pace of growth since 2020, EV exports from Mexico will nearly double in 2023 and continue to grow rapidly thereafter.

Exhibit AM12: Productivity Growth Will Drive Vacancy Lower and Rents Higher

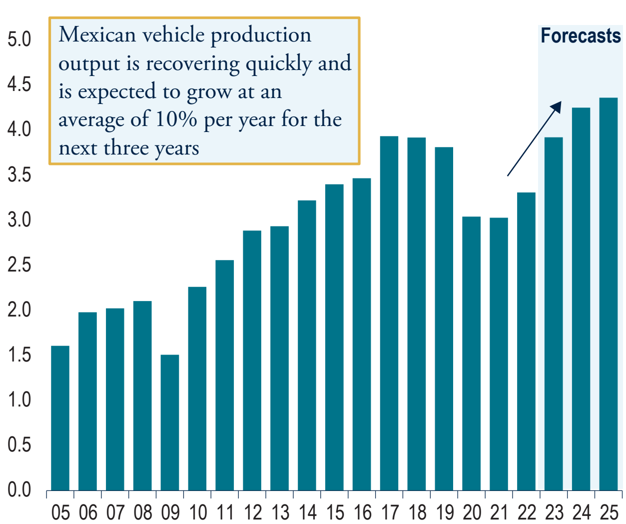
Mexico Industrial Asking Rent (US$ per square meter per month) and Vacancy Rate (%)



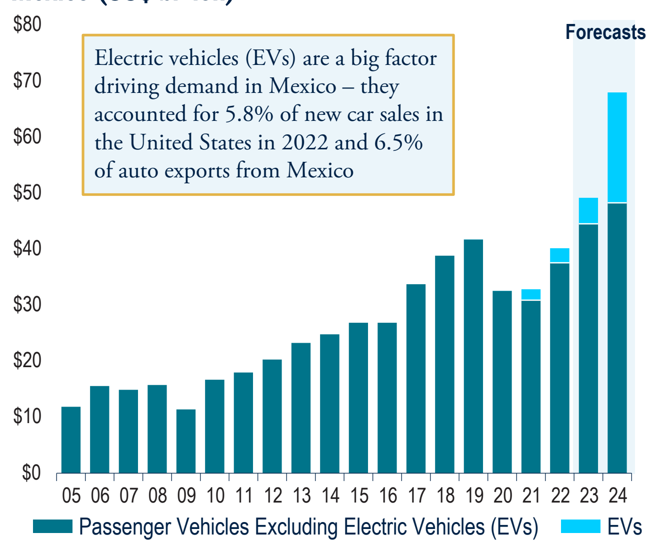
Sources: CBRE, Oxford Economics, INEGI, PGIM Real Estate. As of May 2023.

Exhibit AM13: Manufacturing Shifts to Higher Value Goods Including Electric Vehicles

Mexico Light Vehicle Production Output (million)



Value of U.S./Canada Passenger Vehicle Imports From Mexico (US$ billion)



Sources: INEGI, LMC Automotive, UNComtrade, PGIM Real Estate. As of May 2023.

At the same time, Tijuana and the broader Baja California region have become the largest medical device manufacturing hubs in North America. As a result of the rapid growth in medical device exports and supply constraints, Tijuana's industrial rents are now the highest of any industrial market across Mexico, and Tijuana's vacancy rate stood below 1% at the end of 2022.

Over time, export-based manufacturing has gravitated toward markets closest to the border, resulting in vacancy rates below 1%, as shown in **Exhibit AM14**.

Non-border markets have also benefited from rising export demand and rising e-commerce retail sales. But we expect near-term increases in manufacturing productivity mostly to occur in the border markets that are attracting investment. That will keep vacancy rates at historically low levels, providing opportunities to develop and acquire properties that serve this increasingly value-added manufacturing base.

Over time, export-based manufacturing has gravitated toward markets closest to the border, resulting in vacancy rates below 1%

Exhibit AM14: Border Markets Will Benefit Most From Export Demand

Mexico Industrial Vacancy Rates by Location (%)

Note: Border markets are Juarez, Monterrey, Reynosa, Saltillo and Tijuana. Non-Border markets are Bajio, Guajillo and Mexico City.

Sources: CBRE, PGIM Real Estate. As of May 2023.

LENDING INTO THE FUNDING GAP
Cyclical Opportunities

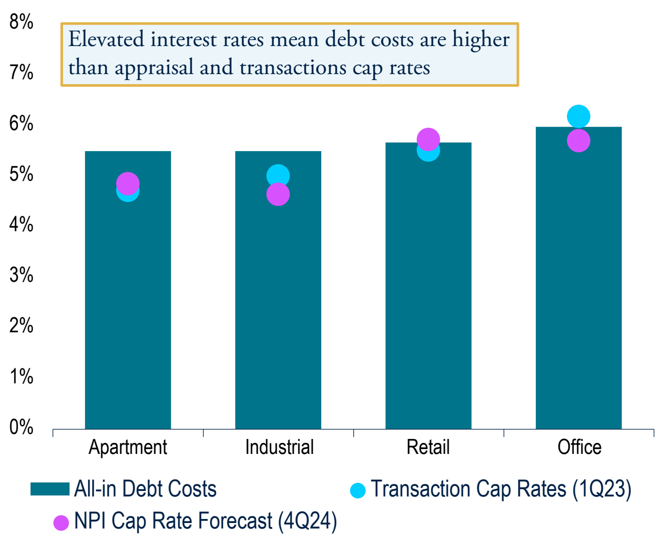
Low volatile markets that are demonstrably less sensitive to higher interest rates present ideal targets for real estate lending

With private U.S. commercial real estate values still adjusting to higher interest rates, commercial real estate debt will provide attractive risk-adjusted returns in the near term. As shown in **Exhibit AM15**, all-in debt costs for commercial real estate are higher than both appraisal and transaction market yields. Moreover, the opportunity set is substantial, with US$1.9 trillion of commercial and multifamily mortgages expected to mature over the next three years, representing 42% of all mortgages held.

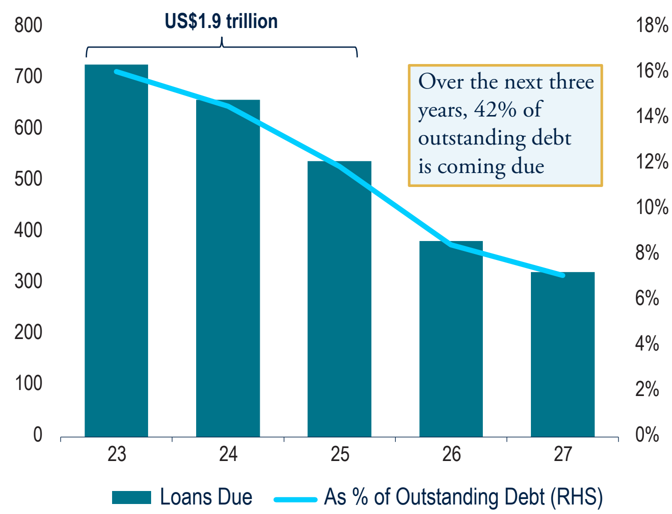
When evaluating lending opportunities, understanding differences in downside potential between geographies is paramount. Two key metro-level factors should be considered: First, the income and employment variability of a metro area relative to the nation and second, the sensitivity of a metro area's economy to changes in interest rates.

Exhibit AM15: Lending Opportunities Will be Available at Attractive Rates

All-In Cost of Debt vs Forecasted Cap Rates (%)



Loan Maturity Profile (US$ billion)

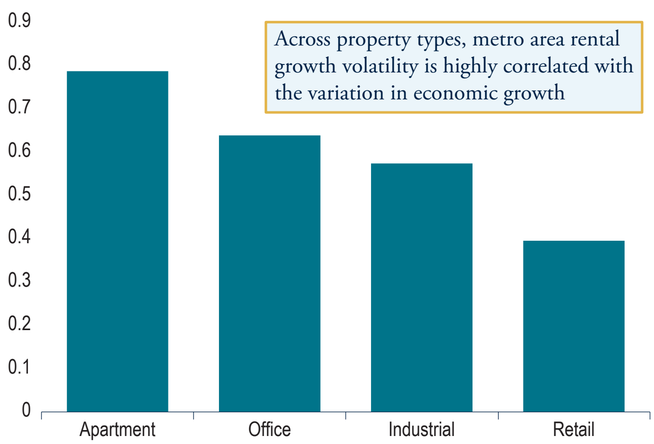


Sources: Chatham Financial, Real Capital Analytics, NCREIF, PGIM Real Estate. As of May 2023.

Metro areas with low variability in household income growth and employment growth generally demonstrate less downside risk to rents and offer investors more certainty around cashflows. Since 1991, the variability in both household incomes and employment has been strongly associated with rental growth variability across property types, most notably in the apartment sector (**Exhibit AM16**).

Exhibit AM16: Economic Volatility Directly Impacts Volatility of Rents

Correlation of Metro Area Economic Growth and Rental Growth Volatility Since 1991



Sources: Oxford Economics, PGIM Real Estate. As of May 2023.

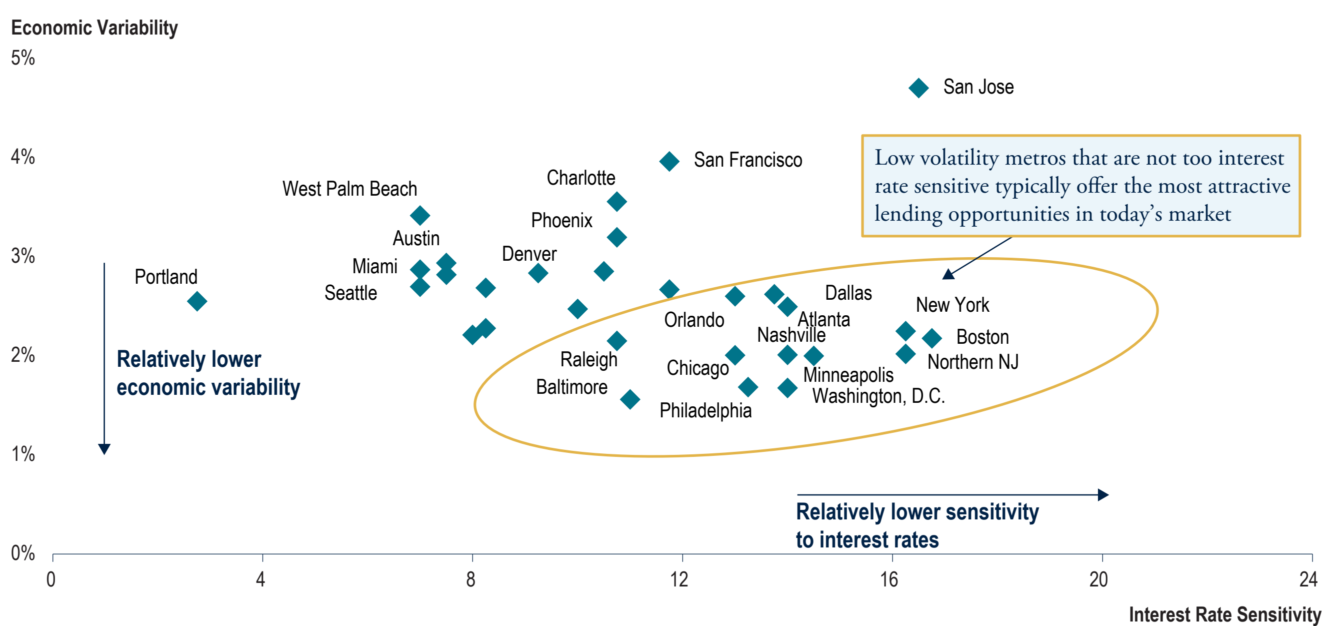
Additionally, the vulnerability of metro area economies to changes in interest rates increases with several factors: the greater the proportion of GDP generated by small and medium-sized businesses (due to reliance on short-term financing); the greater the GDP derived from construction activity (due to being heavily capital intensive); the greater the GDP derived from manufacturing activity (due to being heavily capital intensive and from import/export exposure through the exchange rate); and the higher the level of household debt relative to income (through higher debt service costs).

The intersection of both factors helps identify attractive markets for real estate lending because of the potential for greater downside protection than elsewhere (**Exhibit AM17**). This group includes several large economies on the East Coast, including Boston, New York, Philadelphia and Washington, DC, as well as a group of markets located in the Sunbelt region, including Atlanta, Dallas, Nashville and Raleigh. Metros that are notably absent from this group are those located in the Western region.

We believe that residential and commercial properties located in the metros identified expose investors to less uncertainty in cashflows and less risk of loss in the near term. While they may not all offer high longer-term rent growth potential, their limited downside makes them attractive targets for real estate lending.

Exhibit AM17: Lending Targets Metros With Low Volatility and Less Exposure to Rising Rates

Index of Metro Area Interest Rate Sensitivity vs Economic Variability



Sources: Oxford Economics, OECD, PGIM Real Estate. As of May 2023.

PUBLIC MARKETS
Cyclical Opportunities

With the correction in private markets still ongoing, REITs offer an attractive entry point and route to outperformance

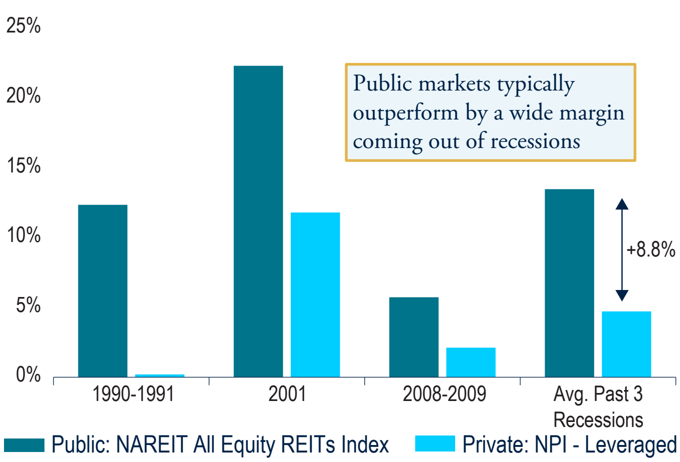
Given the lagging nature of private real estate, REITs offer the opportunity to invest in real estate at values that have already adjusted significantly. Investors can capitalize on this temporary public versus private market dislocation either through investing directly in REITs to benefit from expected outperformance or potentially by taking REITs private.

Based on data from the three U.S. recessions between 1990 and 2009, the NAREIT All Equity REIT Index outperformed leveraged private real estate by an average of 8.8% per year in the five years from the start of a recession (**Exhibit AM18**). For comparison, the average difference in annual returns between the two series from 1983 to 2019 was 3.3% per year.

Investors can capitalize on this temporary public versus private market dislocation either through investing directly in REITs to benefit from expected outperformance or potentially by taking REITs private

Exhibit AM18: History Shows REITs Offer an Attractive Entry Point Around Recessions

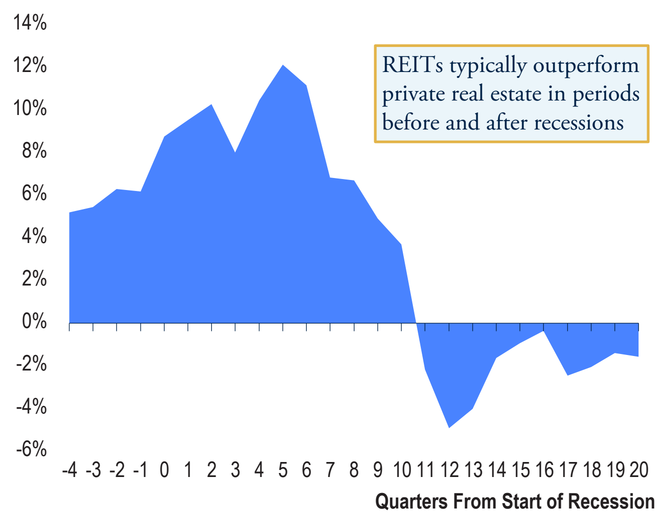
Annualized 5-Year Forward Returns From Start of Recession (%)



Note: Private data are from a custom NPI Leveraged series combining returns from properties without leverage in the NPI index and leveraged returns from properties with leverage.

Sources: NCREIF, PGIM Real Estate. As of May 2023.

Annualized 5-Year Forward Returns: REITs Minus Private Returns, Average of Last Three Recessions (%)



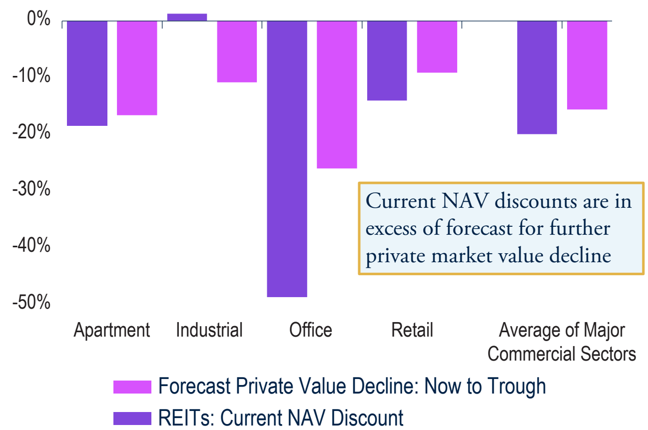
While timing the start of a recession is difficult, value dislocations allow investors to generate above-private market returns in the public market even if the entry point is not precise. As shown in the chart on the right in **Exhibit AM18**, if an investor's entry point into the public market is several quarters before or after the start of a recession, REITs have still on average produced higher five-year forward returns.

The attractive pricing in the public markets is evidenced by a comparison of current net asset value (NAV) discounts (or premiums) in the public market with our expectation for further value declines, as shown in **Exhibit AM19**. While there is differentiation by sector, current prices in the REIT market – as of May 2023 – already incorporate substantial discounts to asset values that are broadly in line with our expectations for further private market value declines.

Investing into this market pricing dislocation comes with risks given the inherent volatility of REIT markets, although this is mitigated by the potential to access cyclical upside while the wider private market repricing is still ongoing.

Exhibit AM19: U.S. REIT Markets Offer Steep Discounts to NAVs

U.S. REIT NAV Discounts and Forecast Private Market Capital Value Declines by Sector (%)



Sources: Green Street Advisors, MSCI, CoStar, NCREIF, PGIM Real Estate. As of May 2023.

REGIONAL SPOTLIGHT

ASIA PACIFIC

Key Authors:

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Key factors supporting the outlook and opportunities:

- The outlook for the Asia Pacific economy is improving – but unevenly – with growth momentum rotating toward China and Hong Kong.
- The higher interest rate environment continues to weigh on asset pricing, with cap rates expanding further in most markets outside of Japan. This offers long-term investors opportunities to take advantage of a less competitive investment environment and more attractive entry prices.
- Occupier demand for office remains biased toward premium space with high green credentials and in central locations.
- Logistics assets in established submarkets are also recording stronger e-commerce related demand, while hotels and prime retail sectors are set to benefit from recovery of the tourism sector.
- Demand for rental housing remains solid across major Asian markets. The lack of institutional depth in markets outside Japan, especially Australia and China, presents investors with an attractive opportunity to participate in the secular growth of the sector.

IN BRIEF

Given our assessment of the outlook for the Asia Pacific economy and real estate market, we identify the following opportunities as being among the most attractive on a risk-adjusted basis over the next 12 months:

INVESTMENT OPPORTUNITY
Affordable Rental Housing (Structural) Rising urban density and worsening housing affordability continue to underpin strong growth of demand for rental housing across major Asian cities
Data Centers (Structural) Demand for data centers remains structurally strong, driven by the secular growth of digitalization across all major economic sectors
Logistics (Structural) Demand for logistics space remains solid but occupiers are shifting to focus on prime submarkets
Targeted Grade A Offices (Structural) Tight supply and affordable rents support favorable recovery prospects for offices in the medium term
Lending Into the Funding Gap (Cyclical) A wave of refinancing needs in Australia points to a growing opportunity set for nonbank lenders
Tourism-Driven Real Estate (Cyclical) The ongoing recovery of cross-border travel is boosting demand for tourism-related real estate sectors like prime high street retail and hotels

STRUCTURAL CYCLICAL

What Are the Investment Opportunities?

AFFORDABLE RENTAL HOUSING
Structural Opportunities

Rising urban density and worsening housing affordability continue to underpin strong growth of demand for rental housing across major Asian cities

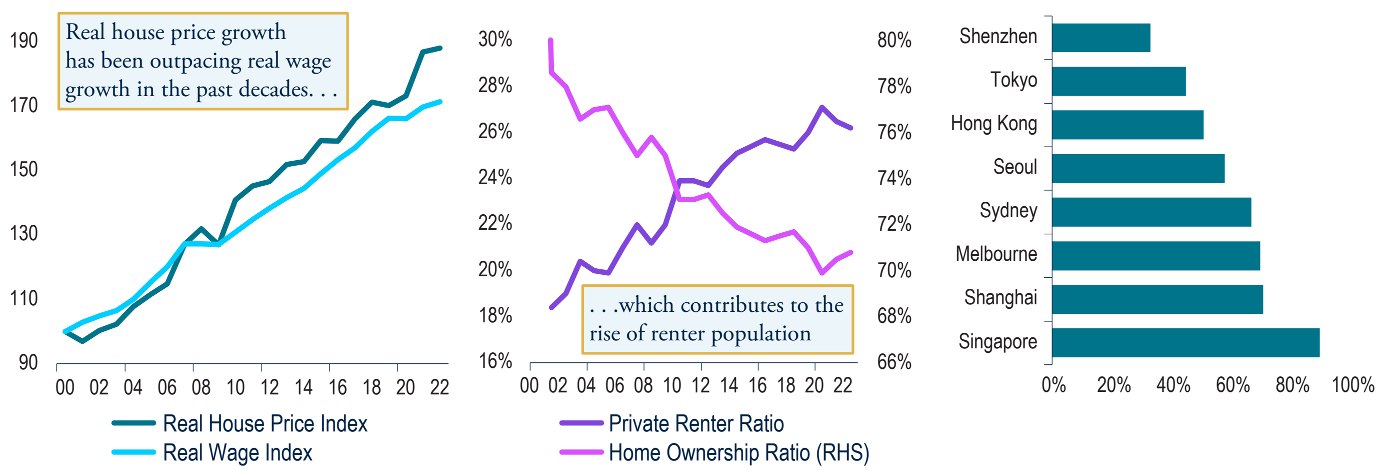
The aspirations for owning a house, together with rising incomes and increasing urban density, have been key drivers of the housing market boom across major Asian metropolitan areas. However, with house prices rising fast and outpacing income growth, house purchase affordability has been declining and home ownership rates have been falling steadily in the past two decades (**Exhibit AP1**).

In Australia, home ownership has declined from 80% of households in 2000 to 70% in 2022. For the cohort of 35 to 44 year olds, the decline has been more notable, from nearly 70% to just 58% over the same time period. The average age of a first-time home buyer in Australia has risen from 30 to 35 during this period. The underdevelopment of public rental housing means that the majority of renters – which now makes up to an estimated 26% of the Australian population – are staying in private housing.

Similar trends showing a shift from owning to renting are being recorded in other major cities across the region. In Seoul, less than 60% of households own their own home, and the figure is below 35% in Shenzhen. Even in Japan where renting is a popular housing option – Japan has the most developed and institutionalized rental housing market in Asia Pacific – the ratio of home ownership in Tokyo declined from 50% to 45% over the past decade.

Exhibit API: Declining Housing Affordability Underpins the Rise of Renting Demand

Real Wage and Real House Price Index (2000 = 100, Developed Asia Pacific) | **Australia's Ratio of Renters and Home Ownership (% of total households)** | **Estimated Home Ownership Rate by City (2022)**



Note: Countries include Australia, Japan, Hong Kong, Singapore and South Korea.
Sources: Oxford Economics, Australian Bureau of Statistics, Cushman & Wakefield, CEIC, PGIM Real Estate. As of May 2023.

Besides low affordability, the acceleration of urbanization is another factor driving rapid growth of rental housing demand. Gateway cities such as Singapore, Melbourne and Sydney are expected to draw in annual net migration growth between 0.5-1.1% in the coming years. Tokyo also continues to attract positive inflows from both domestic and foreign migration (**Exhibit AP2**).

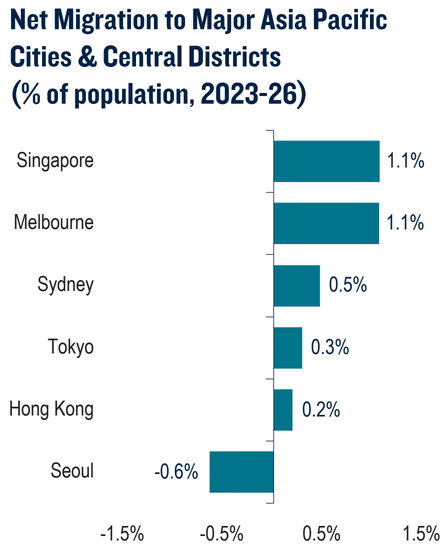
During the peak of the pandemic, net migration to city centers was slowing. However, the migration trend has reversed – which is also clearly reflected in the rental demand and recovery of housing rents. With vacancy rates falling to historical lows of between 1% and 3% in major markets like Sydney, Melbourne and Tokyo, rental growth is forecast to be strong in the next few years.

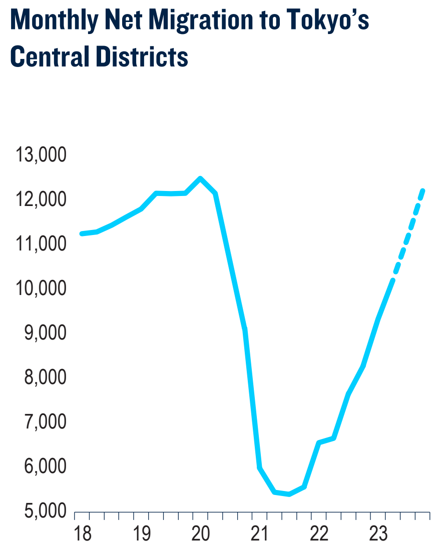
Despite increasing demand, the institutional market for rental housing remains underdeveloped in most Asia Pacific markets outside of Japan. In markets like Australia or China, the chronic undersupply of rental housing is fostering changes in housing policy and encouraging regulation to establish a more attractive environment through providing incentives for housing developers and investors. These policies include a proposal to lower withholding tax in Australia and the introduction of rental housing REITs in China.

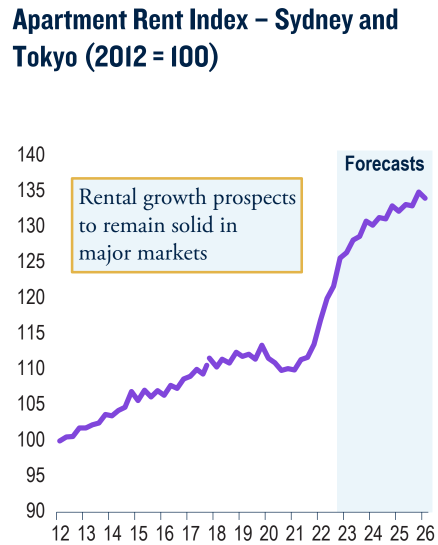
Due to the limited availability of stock and hence lack of liquidity in markets outside of Japan, investors can mostly access the fast-growing rental housing markets like China and Australia through stock creation and development – in other words, build-to-rent projects or conversions of existing assets.

This means that rental housing opportunities for income-focused core investors will remain largely in Japan. But for investors willing to take on greater risk, the combination of favorable leasing conditions, strong rental growth prospects and policy incentives is supporting development opportunities. We consider major and gateway cities of Sydney, Melbourne, Hong Kong and Tier 1 cities in China among the most attractive. These markets are expected to continue growing and maturing in the coming years.

Exhibit AP2: Net Migration to Major Cities Supporting Solid Growth of Demand for Rental Housing







Sources: Oxford Economics BIS, ARES, CEIC, JLL, PGIM Real Estate. As of May 2023.

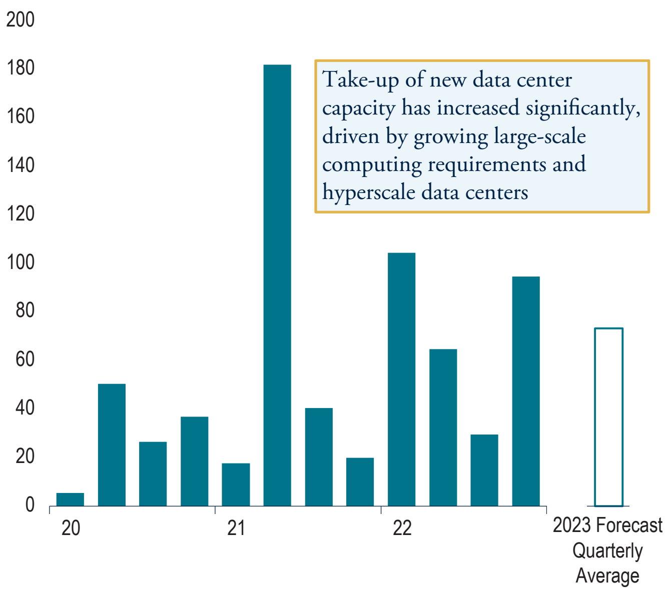
DATA CENTERS
Structural Opportunities

Demand for data centers remains structurally strong, driven by the secular growth of digitalization across all major economic sectors

Demand for data centers remains robust despite a deterioration in the global economic growth outlook. Leasing activity across the major markets of Tokyo, Sydney, Singapore and Hong Kong reached 300 megawatts in 2022 – a significant jump up from 2021 and consistent with forecasts of strong demand growth over the coming years (**Exhibit AP3**).

Exhibit AP3: Data Center Leasing Activity Remains Positive Across the Regional Markets

Asia Pacific Data Center Take-Up (megawatts)



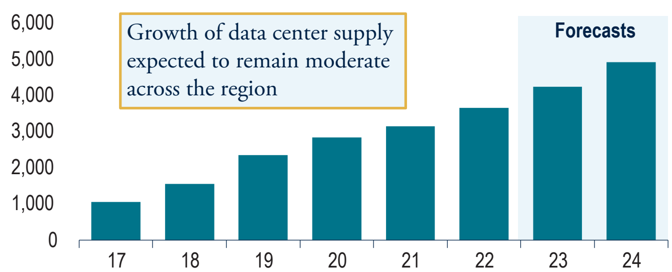
Note: Take-up growth is estimated from the growth of the global ICT sector.
Sources: Green Street, DCByte, PGIM Real Estate. As of May 2023.

This accelerated growth of demand for data center capacity has been driven largely by the secular shift toward the public cloud. In established markets like Tokyo and Sydney, hyperscale data centers account for about 40-50% of all take-up. With the public cloud market forecast to grow by about 30% per year in the next two years, hyperscale is expected to remain the strongest growth segment of data centers.

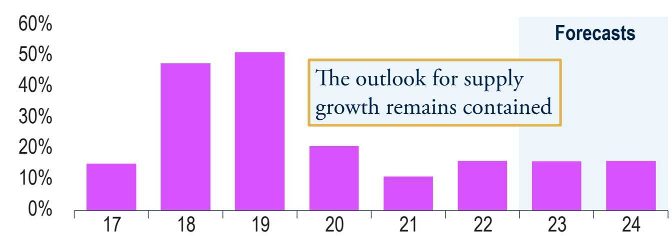
Strong demand has also stimulated supply responses. In the past five years, the total data center capacity across major Asia Pacific markets grew by an annual rate of 30%, which weighed heavily on rental performance (**Exhibit AP4**). However, the pace of new development is moderating, partly impacted by higher construction and financing costs. Constraints on supply are also increasingly driven by the limited availability of power, particularly in markets such as Tokyo and Singapore. The requirements for energy efficient and highly connected, large scale data centers also add to the supply barriers.

Exhibit AP4: A Contained Supply Growth Outlook Is Supporting Rental Growth Prospects

Asia Pacific Data Center Supply by Commissioned Power (megawatts)



Annual Supply Growth (%)



Sources: Structured Research, JLL, Green Street, Cushman & Wakefield, DCByte, PGIM Real Estate. As of May 2023.

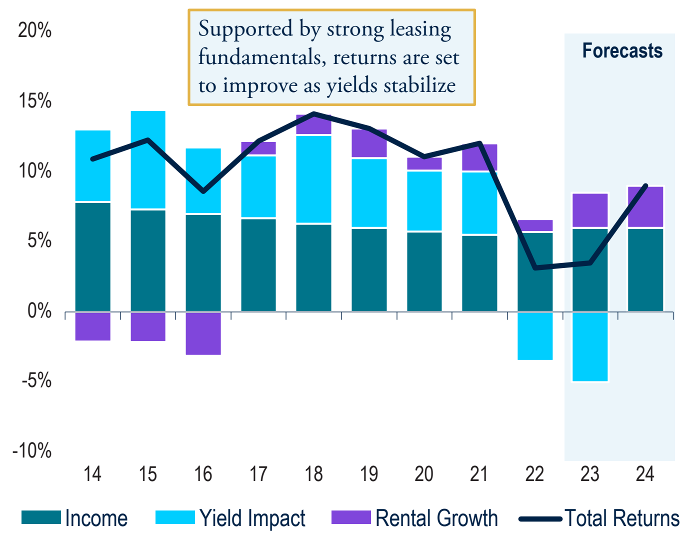
Leasing fundamentals are improving (**Exhibit AP5**). Vacancy rates are falling in Singapore and Hong Kong and stabilizing in Sydney and Tokyo, driving expectations of improving rental growth prospects. With capitalization rates likely to stabilize within the next 12 months, returns are expected to start improving, with income returns and rental growth being the main drivers of performance.

Constraints on supply are expected to boost rental growth prospects and returns, particularly in low vacancy markets like Singapore and Hong Kong. The opportunity to develop hyperscale data centers – which offer high-speed connection and meet energy-efficient, environmental goals – will remain attractive.

The opportunity to develop hyperscale data centers – which offer high-speed connection and meet energy-efficient, environmental goals – will remain attractive

Exhibit AP5: Returns Are Set to Improve on the Back of Strong Leasing Fundamentals and Stabilizing Yields

Estimated Annual Asia Pacific Data Center Total Returns (%)



Note: Returns are for unlevered, powered shell and core assets in major markets. 2022 figures are estimated.

Sources: MSCI, Green Street, CBRE, Structured Research, PGIM Real Estate. As of May 2023.

LOGISTICS
Structural Opportunities

Demand for logistics space remains solid but occupiers are shifting to focus on prime submarkets

As economic activity normalizes in the post-pandemic reopening, consumers are gradually shifting back to shop in physical stores. E-commerce sales growth and penetration are therefore expected to moderate in the coming years (**Exhibit AP6**).

The slowdown will be particularly significant in markets with high e-commerce penetration like China and South Korea. Following the rapid expansion of e-commerce in the past decade, these markets are closer to reaching a state of saturation. In countries such as Japan there is still more room to catch up as e-commerce penetration remains low.

With almost all countries in the region, including China, moving away from pandemic-related lockdowns, the average growth in online retail sales slowed down from the peak of 30-40% per year in 2021 to just over 10% in 2022. This normalization of demand related to online shopping has started to show up in weaker logistics space absorption in the past few quarters (**Exhibit AP7**).

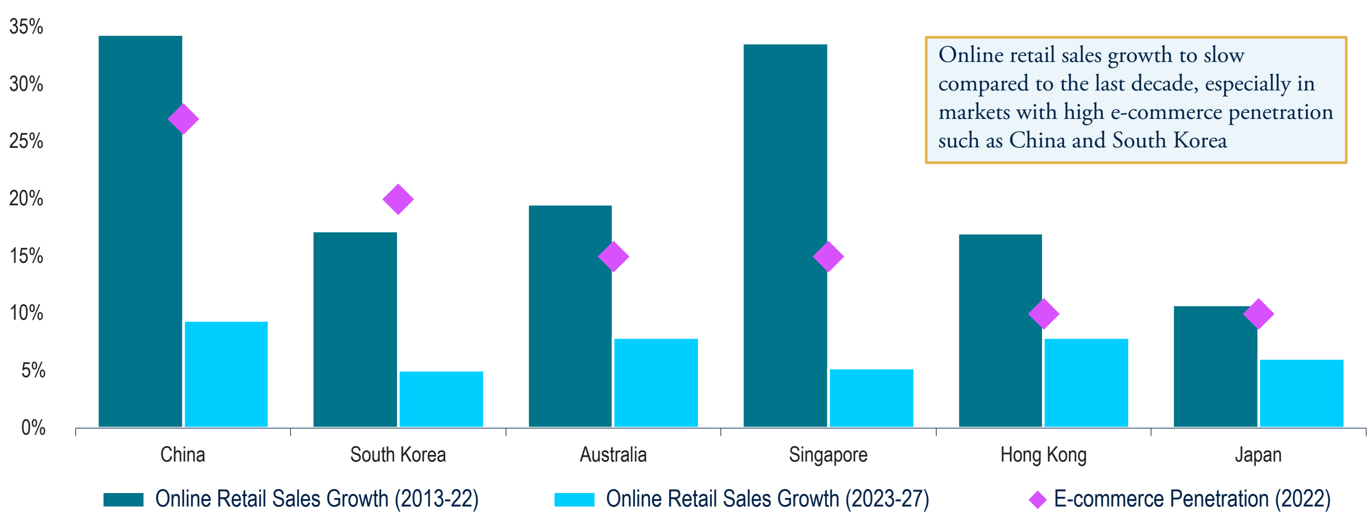
For e-commerce platforms, pressures on operational profitability are growing because of rising new customer acquisition costs. The spike in energy prices and inflation over the past 12 months has forced logistics operators to focus even more on operational efficiency and productivity. As a result, we expect demand for additional space to remain positive, but momentum will soften as logistics operators move past an aggressive expansion phase.

This means that the selection of assets and submarkets will become more stringent. Even though strong expansionary demand still pushed rents up across different market segments in 2022 across major markets, logistics leasing demand and rental performance are set to shift favorably for prime and established submarkets.

Managing costs and improving operational efficiency have become priorities for logistics operators. The focus is on assets located within prime submarkets offering good transport links and proximity to urban residential catchments that are able to

Exhibit AP6: Asia Pacific E-commerce Growth Set to Moderate After Peak in Pandemic

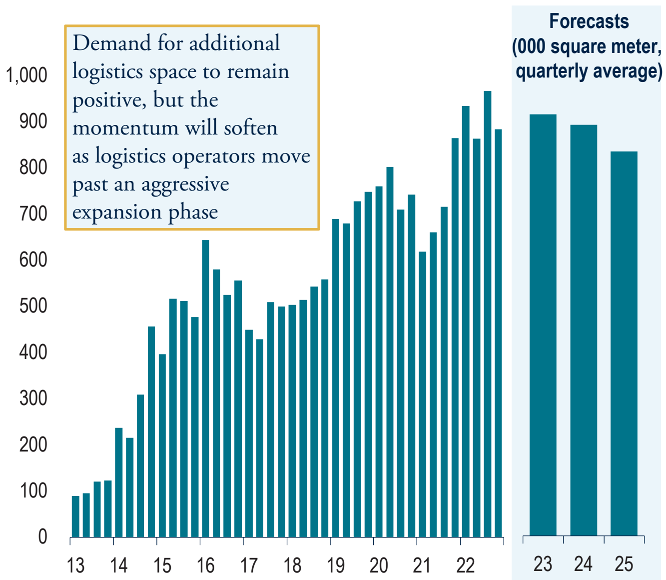
Online Sales Growth (% p.a.) and E-commerce Penetration (2022)



Sources: CEIC, EIU, PGIM Real Estate. As of May 2023.

Exhibit AP7: Net Absorption Reflects Normalization in Demand

Logistics Net Absorption – Major Markets (000 square meter)



Note: Major markets comprises Tokyo, Seoul, Singapore and Hong Kong.

Sources: JLL, PGIM Real Estate. As of May 2023.

meet consumer demand for shorter delivery times. In addition, rising transportation costs are forcing logistics operators to prioritize distribution hubs providing shorter traveling distances.

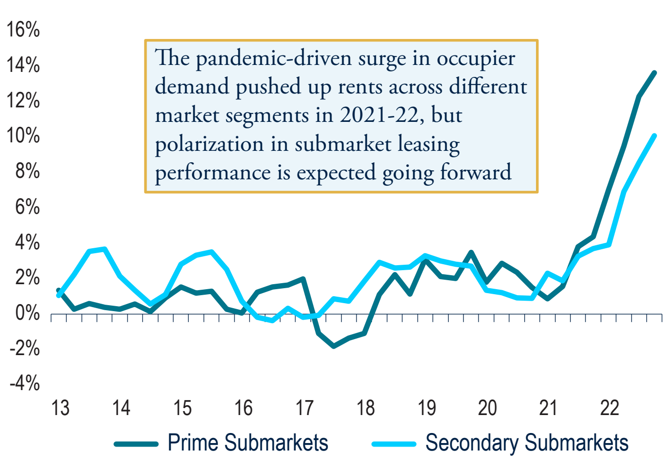
Prime submarkets like Tokyo Bay and Seoul have recorded stronger absorption and tighter vacancy rates as compared to decentralized emerging submarkets. Similarly, prime submarkets in Sydney, Melbourne and Singapore are also showing strong performance in both tenant demand and achievable rents over the next couple of years. We expect the underlying occupier trends to continue to support the outperformance of prime and centrally located logistics assets (**Exhibit AP8**).

Mirroring occupier markets, polarization in the capital markets is also emerging. With rental growth momentum softening and growing pressures from higher financing costs, logistics yields are rising in most markets outside of Japan. Assets in secondary submarkets – either in Seoul or Sydney – with weaker leasing conditions and a worsening rental growth outlook are under pressure to record a sharper pricing correction.

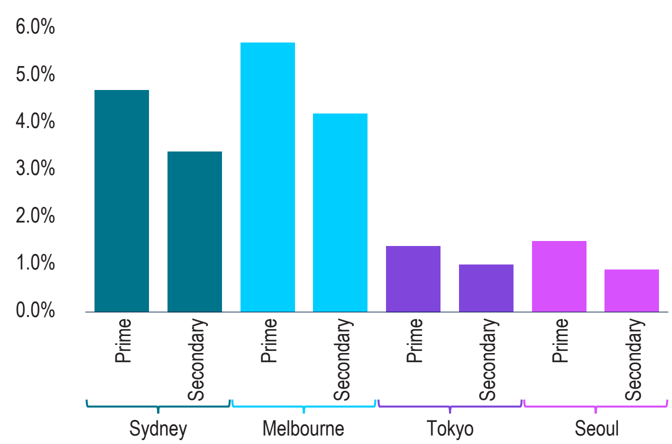
Despite the emergence of some leasing softness in the near term, we expect structural demand for quality logistics space to remain solid. But we also expect the trend toward modern and centrally located logistics centers to continue, in support of the adoption of new technology and automation to improve warehouse productivity. Following this occupier trend, investors should become more selective in forming their logistics strategies with an increasing focus on choosing the right submarkets and asset attributes.

Exhibit AP8: Normalizing Tenant Demand Leading to Stringent Submarket Selection, Driving Polarization in Leasing Performance

Logistics Rental Growth (% p.a.)



Logistics Rental Growth by Submarket (2023-25, % p.a.)



Note: Including Sydney, Melbourne, Brisbane, Tokyo, Seoul, Singapore and Hong Kong.

Sources: JLL, PGIM Real Estate. As of May 2023.

TARGETED GRADE A OFFICES

Structural Opportunities

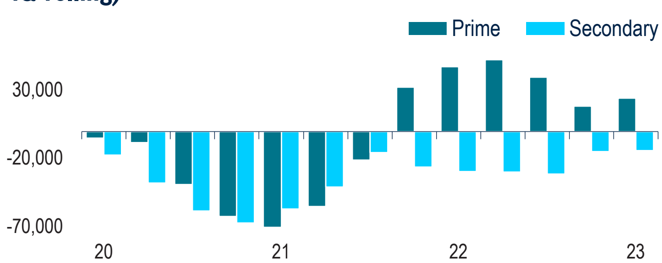
Tight supply and affordable rents support favorable recovery prospects for offices in the medium term

Office leasing activity has shown a solid recovery since developed Asian economies started reopening. Nevertheless, a shift in occupier demand to include environmental considerations and the desire to provide modern workspaces to attract and retain employees is clearly leading to a bifurcation in leasing demand, with new take-up strongly focused on prime, ESG-compliant and centrally located office space (**Exhibit AP9**).

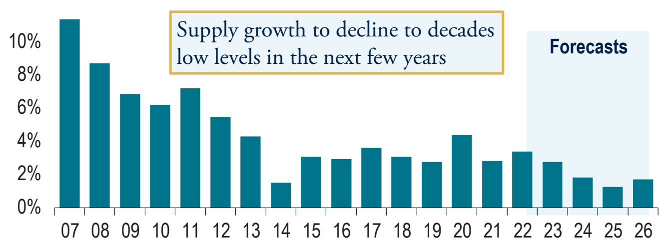
This trend is reflected in the strength of grade A CBD office net absorption across major markets in Australia, South Korea and Singapore in 2022. Against the backdrop of falling vacancy rates and very tight supply, grade A office rents in these markets were growing strongly, with Sydney reporting 4.5% annual growth in 2022 and Seoul and Singapore noting significant growth of 23% and 10%, respectively. With supply expected to moderate further in the coming years (**Exhibit AP10**), leasing fundamentals and rental growth prospects for office remain generally favorable.

Exhibit AP9: Demand Continuing to Focus on Quality Space – Low Supply to Support Leasing

Australia Office Net Absorption by Grade (square meters, 4Q-rolling)



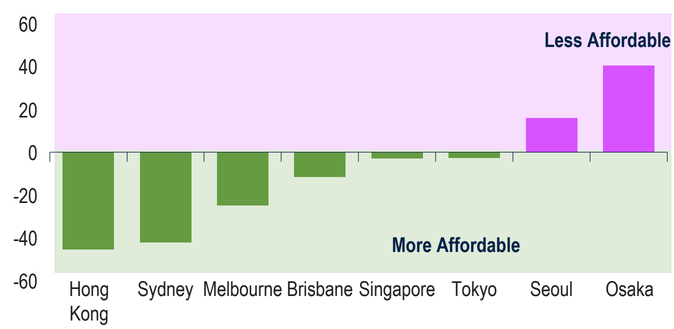
Asia Pacific CBD Office Net Supply Growth (% of total stock)



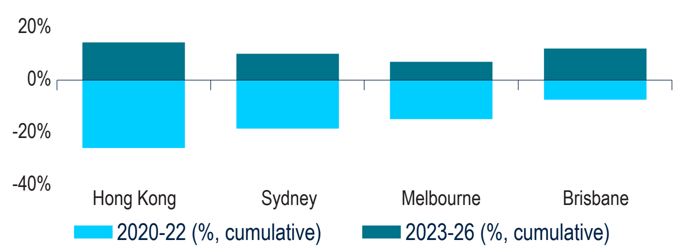
Sources: JLL, CBRE, PGIM Real Estate. As of May 2023.

Exhibit AP10: Affordable Rents to Support Leasing Demand and Rental Recovery

Change in Office Affordability Index (2017-22)



Cumulative Net Effective Rental Growth (%)



Note: Affordability index is a relative score of rental affordability, measured by comparing rental growth in a market against its growth of office space productivity. Neutral is long-term average of the index.

Sources: JLL, CBRE, PGIM Real Estate. As of May 2023.

Nevertheless, rental growth momentum will likely be uneven and diverse across major markets. A strong recovery in the past two years has brought grade A rents in Singapore and Seoul back to or above pre-pandemic levels. With a sizable amount of new supply arriving in late 2023, Singapore office leasing fundamentals are softening. By contrast, with very limited new supply, Seoul office markets remain tight, and we expect rental growth to stay strong in the near term.

In markets such as Hong Kong, Sydney and Melbourne, affordability will be a key factor supporting the rental outlook. Grade A office rents have started recovering in Australia, but like Hong Kong, rents remain 15-25% below 2019 levels, making them highly affordable to tenants. With tenants demanding improvements following the reopening, we expect grade A office rents in these markets to grow cumulatively 10-15% in the next few years.

A shift in occupier demand to include environmental considerations and desire to provide modern workspaces is clearly leading to a bifurcation in leasing demand with new take-up strongly focused on prime, ESG-compliant and centrally located office space

With office yields rising in most markets over the past 12 months – Japanese offices again the exception – an improved outlook in the leasing market offers investors an opportunistic investment environment. Like the bifurcation in occupier demand, opportunities are most attractive in a narrow segment of the market – office assets with quality, green credentials and in central locations.

This points to grade A or prime assets in the CBDs with the opportunity looking particularly attractive in Australia, where office yields – based on transaction evidence – have risen by a full percentage point. Milder broad-based pricing adjustments in Seoul and Singapore make these markets less appealing from an entry price perspective, but as high borrowing costs continue to be felt, investors should keep an eye out for specific opportunities that may arise.

LENDING INTO THE FUNDING GAP
Cyclical Opportunities

A wave of refinancing needs in Australia points to a growing opportunity set for nonbank lenders

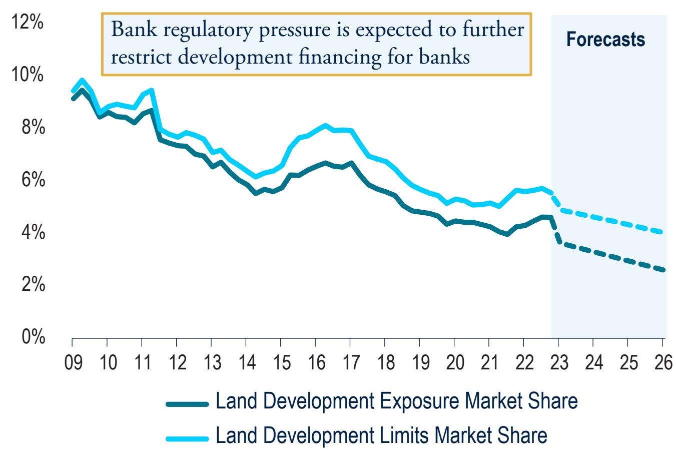
Nonbank lenders are playing an increasingly important role in the Australian commercial real estate market, filling in gaps left by traditional banks as post-financial crisis banking regulations have made it more challenging for banks to lend, particularly to riskier borrowers or projects. Nonbank lenders often have more flexibility than traditional banks and can provide financing more quickly. This can be particularly valuable for borrowers with time-sensitive needs.

One area of opportunity is in transitional and development financing, where bank regulatory pressure is restricting limits on bank exposure to land development (**Exhibit AP11**). While limits have been trending down, actual bank exposure to land development has trended down more sharply, which demonstrates an even more cautious appetite for development than permitted. This has led to nonbank opportunities in providing debt for new construction and development projects, especially in sectors and regions with robust demand.

Nonbank lenders are playing an increasingly important role in the Australian commercial real estate market, filling in gaps left by traditional banks

Exhibit AP11: Banks Are Reducing Exposure to Development Financing

Market Share: Bank Land Development Limits vs Actual Exposure (%)



Note: Data refers to authorized deposit-taking institutions' land development limits and exposures in Australia. Land development market share is calculated as the land development proportion of the total commercial mortgage book.

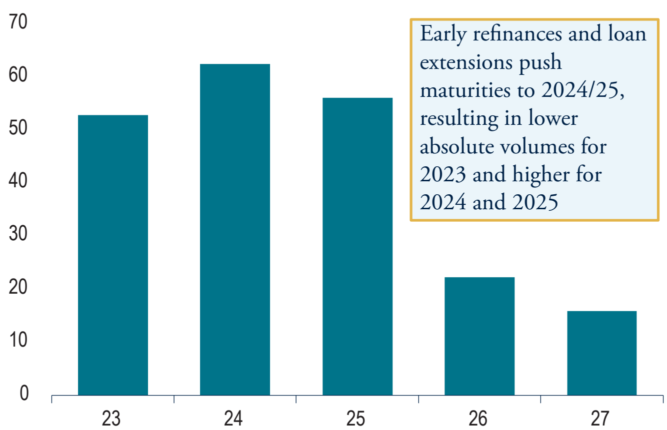
Source: APRA, Bayes Business School, PGIM Real Estate. As of May 2023.

Another area of opportunity is an emerging funding gap, which is creating demand for gap financings or equity alternatives. The next three years will face a high volume of loans due to mature (**Exhibit AP12**). Loans due will be faced with higher interest rates and tighter lending standards, while the continued focus on debt service will constrain loan sizing for new senior debt, leaving a funding gap for non-senior opportunities.

Despite the market outlook, the current environment presents opportunities for investors willing to take on higher risk for potentially higher returns. With the continued rise in interest rates, investors will have an opportunity to lend into the current market at higher coupons with the prospect of attractive rates of return.

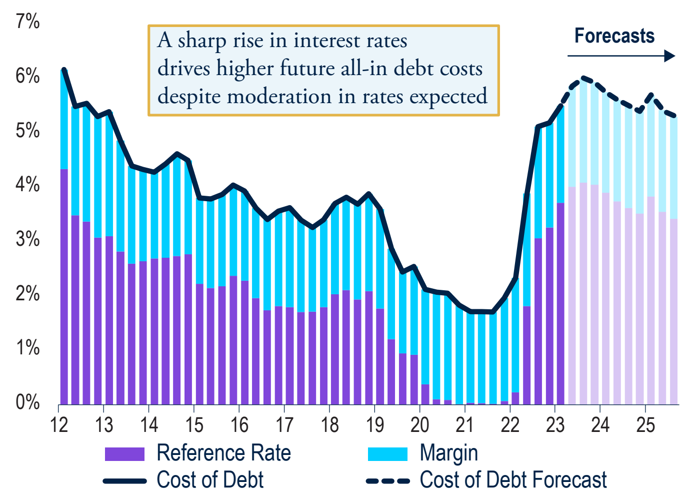
Exhibit AP12: Banks Are Reducing Exposure to Development Financing

Bank Loan Maturities – Australia (AU$ billion)



Note: PGIM Real Estate estimates based on commercial property exposure in Australia.

Cost of Debt – Australia (%)



Note: The reference rate refers to the Australian bank bill swap rate (BBSW 3M).

Sources: APRA, Bayes Business School, Bloomberg, PMA, PGIM Real Estate. As of May 2023.

TOURISM-DRIVEN REAL ESTATE

Cyclical Opportunities

The ongoing recovery of cross-border travel is boosting demand for tourism-related real estate sectors like prime high street retail and hotels

Before the pandemic, developed Asia Pacific countries were attracting an average of 130 million annual visitors who would spend close to US$180 billion each year. After the "lost three years" due to traveling restrictions, the tourism sector has shown signs of recovery after countries gradually began reopening in mid-2022. Nevertheless, there is still significant room ahead before the tourism sector recovers back to the pre-pandemic level in both number of foreign visitors and spending (**Exhibit AP13**).

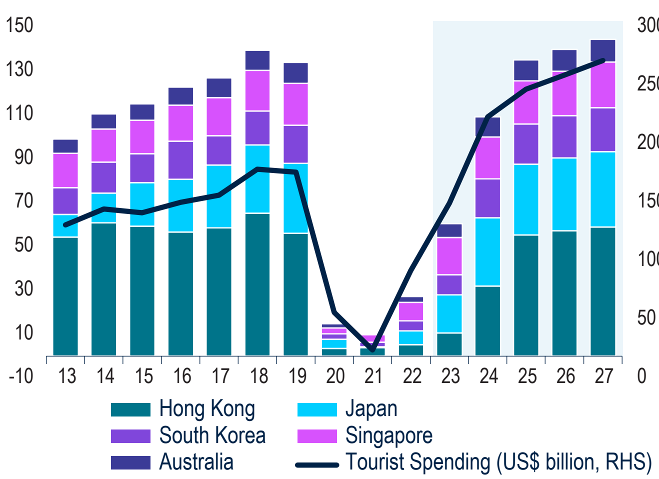
Accounting for 20-30% of all foreign tourist arrivals across major Asian countries in the years before the pandemic, tourists from China are critical to the recovery of regional tourism. Therefore, the Chinese government's decision to depart from its Zero Covid Policy and reopen its borders represents a great boost to the outlook of the tourism sector. Data for the early months of 2023 reveal a strong uplift in air traffic, cross-border tourist arrivals and spending, particularly in travel hubs like Singapore and Hong Kong.

Looking at rental data for the high street retail and hotel sectors, it is obvious how critical foreign tourism is. During the period of tight traveling restrictions, high street rents in major markets fell 20%, whilst hotel occupancy rates and average room rates declined by 60-80%. In turn, there are now strong recovery prospects from a low base for prime retail and hotel assets.

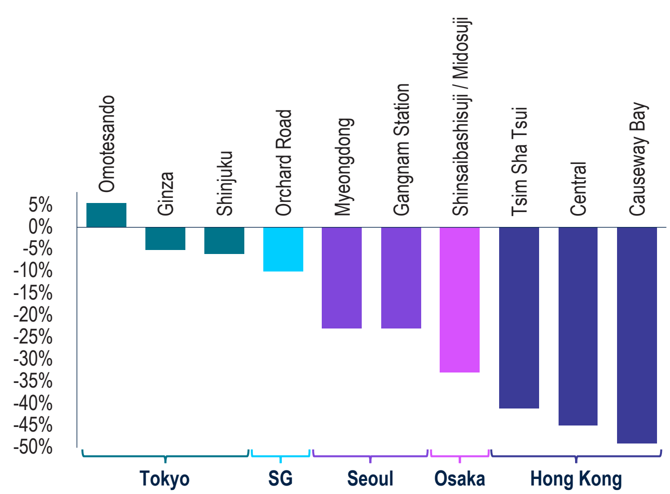
Markets with high exposure to international tourism, such as Tokyo, Osaka, Hong Kong and Singapore, are showing the most encouraging signs of recovery. The latest data show that retail rents in Tokyo's prime retail districts of Omotesando, Ginza and Shinjuku have recovered strongly, with rents in Omotesando already surpassing pre-pandemic levels.

Exhibit AP13: Cross-Border Tourism Is Critical to High Street Retail

International Tourist Arrivals (million visitors) & Tourist Spending (US$ billion)



High Street Retail Rents (% vs 4Q19 levels)



Sources: EIU, Cushman & Wakefield, PGIM Real Estate. As of May 2023.

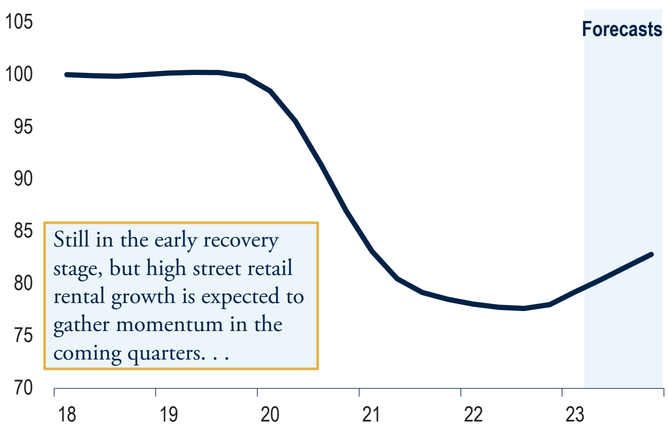
With prime retail rents remaining significantly below pre-pandemic levels, the Hong Kong, Osaka and Seoul high street retail markets will see recovery momentum gathering as the tourism sector continues to normalize in the coming two years. Hong Kong, for example, has experienced a strong rebound of retail sales in the early months of 2023, with recovery momentum expected to continue.

For hotels, despite data showing that tourist arrivals remain well below pre-pandemic levels, performance has started recovering with occupancy and average room rates almost back to levels last seen in 2018 (**Exhibit AP14**).

The high street retail and hospitality sectors are set to benefit from the acceleration of recovery momentum, as overseas traveling from Chinese tourists gradually normalizes. The opportunity is most interesting in Hong Kong and Osaka, as they are still in the early stages of the recovery cycle, underpinning a solid recovery prospect and performance in the coming years.

Exhibit AP14: Recovery Gathering Momentum in High Street Retail and Hotels

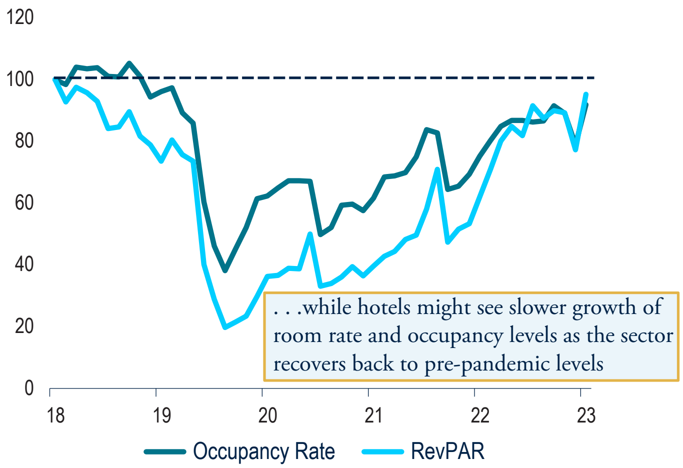
Prime High Street Retail Rental Index (2018 = 100)



Note: Including prime and high street retail in Hong Kong, Tokyo and Singapore.

Source: JLL, CBRE, PGIM Real Estate. As of May 2023.

Asia Pacific Hotel Occupancy Rates and RevPAR Index (2018 = 100)



Note: Including all hotels in Hong Kong, Japan and Singapore. Rebased to December 2018 to mitigate the impact of 2018 social unrest on Hong Kong's hotel sector.

REGIONAL SPOTLIGHT

EUROPE

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Key factors supporting the outlook and opportunities:

- The threat of recession clouds the outlook, but headline inflation is coming down and the interest rate tightening cycle is set to end soon.
- Real estate pricing continues to adjust to the higher interest rate environment.
- At the current pace of value adjustment, our estimated target acquisition yields will be reached in many markets in the second half of 2023.
- An occupier market downturn would exacerbate the interest rate-driven real estate value reset, but leasing activity is holding up so far.
- Rents are growing in nominal terms across most sectors, although real terms falls in the last couple of years have helped to maintain affordability.
- Opportunities in this environment relate to the likely outperformance of defensive income streams through the value reset period, followed by investing in sectors and markets with resilient cashflows at a more attractive long-term basis than during much of the last cycle.

IN BRIEF

Given our assessment of the outlook for the European economy and real estate market, we identify the following opportunities as being among the most attractive on a risk-adjusted basis over the next 12 months:

INVESTMENT OPPORTUNITY	
STRUCTURAL	**Affordable Rental Housing** Yields are adjusting, but rental housing demand is being driven by affordability pressures and its resilient income streams remain attractive to investors
STRUCTURAL	**Data Centers** Returns are set to improve as the pricing correction is well underway and solid demand underpins prospects for rental growth across major markets
STRUCTURAL	**Logistics** The rapid adjustment in pricing is combining with a still-favorable medium-term demand outlook to drive attractive opportunities in European logistics
STRUCTURAL	**Senior and Student Living** Operational living sectors are set to benefit from strong age demographic tailwinds, and offer potentially higher returns to investors who are willing to take on operating risk
STRUCTURAL	**Targeted Grade A Offices** Investment opportunities in offices are restricted to the best assets in CBD markets that fulfill the criteria demanded by tenants and landlords alike
CYCLICAL	**Lending Into the Funding Gap** A growing funding gap is set to combine with sharply falling values, creating a set of debt investment opportunities as a large wave of refinancing needs come through

STRUCTURAL CYCLICAL

What Are the Investment Opportunities?

AFFORDABLE RENTAL HOUSING
Structural Opportunities

Yields are adjusting, but rental housing demand is being driven by affordability pressures and its resilient income streams remain attractive to investors

Across Europe, the affordable housing opportunity is being driven by social, structural and supply factors. On the back of a cycle that saw a consistent increase in prices relative to incomes, the key change over the last year has been a steep rise in borrowing rates (**Exhibit EU1**).

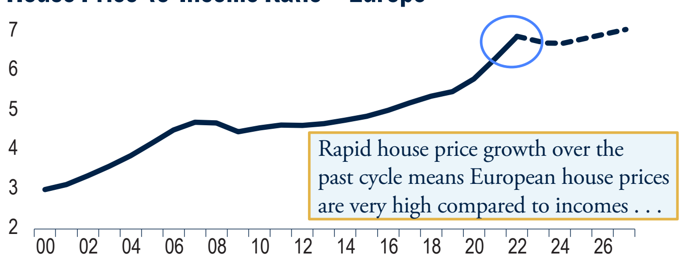
With prices also elevated, stretched affordability is a consistent pattern across Europe, although the impact is greater in the UK where mortgage exposure is elevated, compared to, say, France, where house price growth was more contained in the last cycle, and Italy, where use of leverage is typically very low.

Rising prices were predominantly driven by low interest rates in recent years, but low supply has also been an issue in most major markets. Sluggish building rates set against significant household formation through much of the last cycle imply a shortage of housing supply, which is only gradually being worked off now (**Exhibit EU2**).

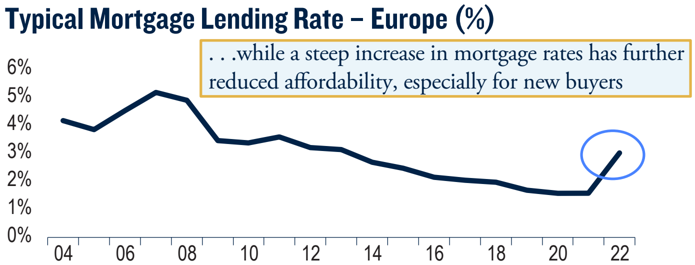
Housing demand was met over that time, partly because vacancy fell significantly, but also through sub-optimal channels: discouraged household formation, overcrowding and supply being added by breaking up existing units. Sharply rising construction costs and pressure on apartment values are also discouraging new supply, while there is still uncertainty about the future path of ESG-related regulation, which adds to project risks. As such, current pipeline forecasts may come under threat, exacerbating the problem.

Exhibit EUI: Increasingly Stretched Affordability Driving Rising Rental Share Over Time

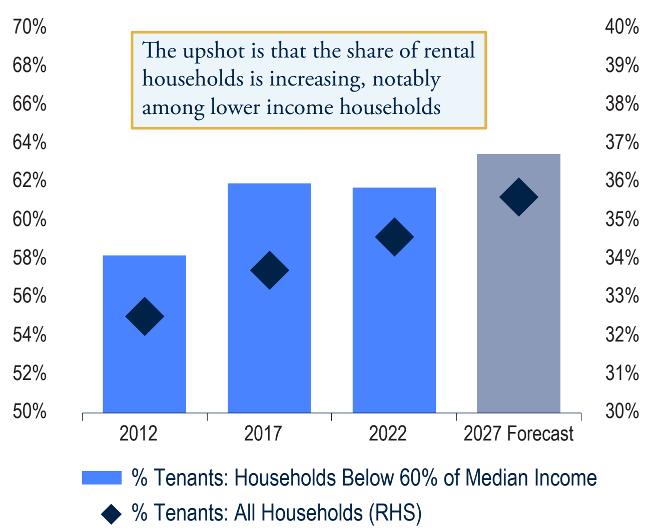
House Price-to-Income Ratio – Europe



Typical Mortgage Lending Rate – Europe (%)



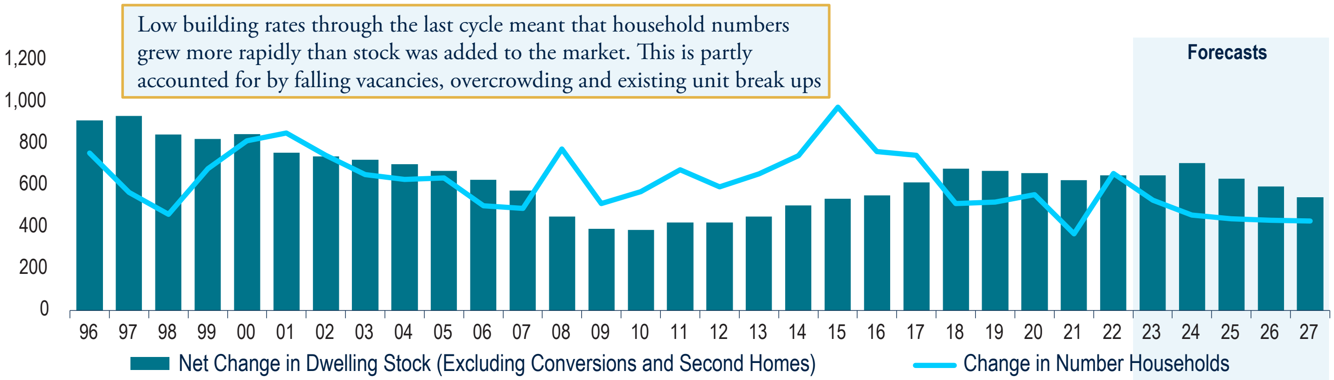
Average European Rental Share (%)



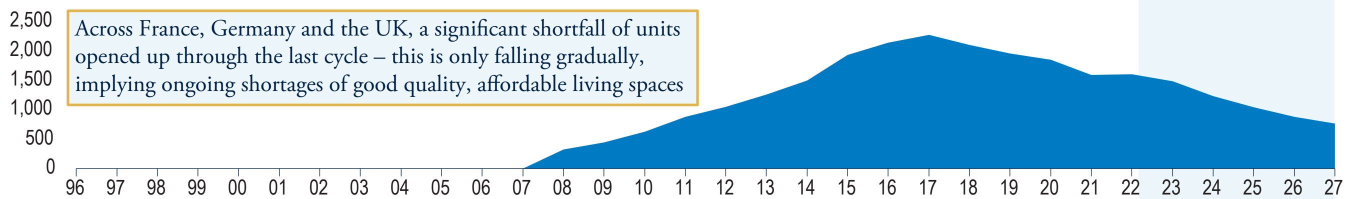
Note: European house prices are based on average transaction prices of new dwellings based on a 100 square meter unit across major European countries.
Sources: Oxford Economics, Deloitte, PMA, Eurostat, PGIM Real Estate. As of May 2023.

Exhibit EU2: Supply Improving, but the Legacy of Low Supply Persists

Annual Change in Europe Big 3 Dwelling Stock and Household Numbers (000s)



Cumulative Shortfall in Europe Big 3 Dwelling Stock (000s)



Note: "Europe Big 3" refers to France, Germany and the UK.
Source: Destatis, INSEE, Oxford Economics, Department for Levelling Up, Housing and Communities, Office for National Statistics, PGIM Real Estate. As of May 2023.

In most European markets, there is an ongoing opportunity to deliver modern, transparently run living spaces to compete with and replace aging, fragmented existing stock.

Such factors as supply bottlenecks and the withdrawal of smaller private landlords are driving a rapid pace of short-term rental growth in Amsterdam, London, Madrid and Manchester. Over time the story is more closely linked to household incomes, especially in the affordable living sector where affordability constraints are closely watched.

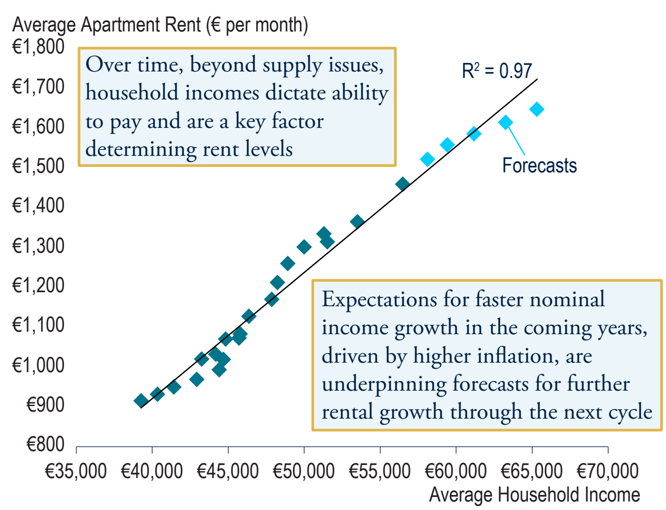
Higher costs for other essentials, such as food and energy, are set to weigh slightly on headline rental growth as household spending power is dampened, along with the impact of rent controls in major cities such as Munich and Paris. Overall, though, the next cycle is set to bring a relatively strong pace of nominal household income growth and further rental growth, at an average of 2.4% per year across Europe's major markets (**Exhibit EU3**).

While the repricing implies further downside risks in the near term, yields are fast approaching our target levels for long-term acquisitions in the sector. Amsterdam, Paris, London and major UK regional cities all offer strong rental growth potential, although the UK repricing story is further behind in this sector.

German cities look attractive on the demand side, but rent regulations are holding back the translation of headline ERV growth into NOI growth, dampening potential returns.

Exhibit EU3: Household Incomes are Key to Supporting Ongoing Rental Growth

European Household Income vs Residential Rents (€)



Sources: Oxford Economics, PMA, PGIM Real Estate. As of May 2023.

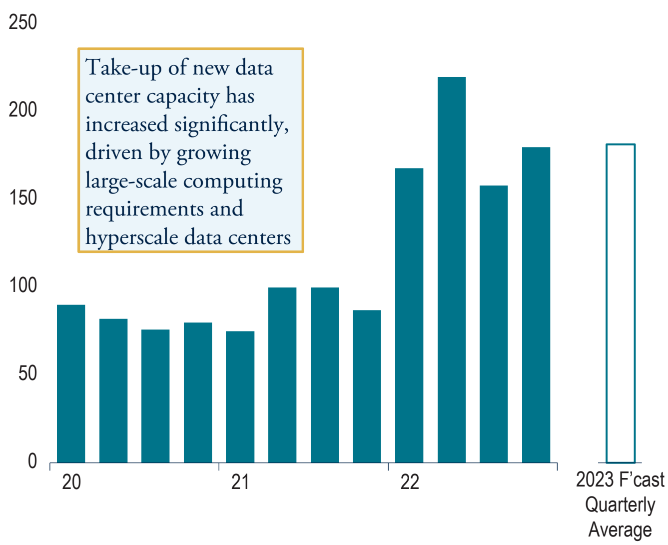
DATA CENTERS
Structural Opportunities

Returns are set to improve as the pricing correction is well underway and solid demand underpins prospects for rental growth across major markets

Demand for data center capacity across Europe remains solid. Leasing activity – led by the major data center hubs like London, Frankfurt and Amsterdam – remains elevated despite global economic uncertainty. Net absorption reached a total of 750 megawatts in 2022, which is substantially above activity levels recorded in recent years (**Exhibit EU4**).

Exhibit EU4: Data Center Leasing Activity Remains Robust, Supported By Strong Demand For Hyperscale

Europe Data Center Take-up (megawatts)



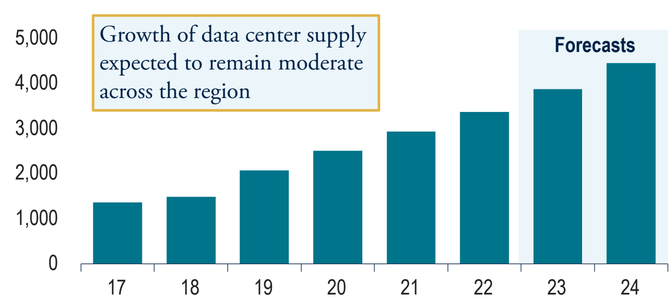
Note: Take-up growth is estimated from the growth of the global ICT sector.
Sources: Green Street, DCByte, PGIM Real Estate. As of May 2023.

The growth of demand for data centers in Europe has been underpinned by the secular shift toward the public cloud and hence the demand for heavy-capacity and hyperscale data centers. Leasing activity has been most pronounced in London and Frankfurt where the network of data centers is the largest in Europe – although demand is also rising in other key markets such as Paris and Dublin.

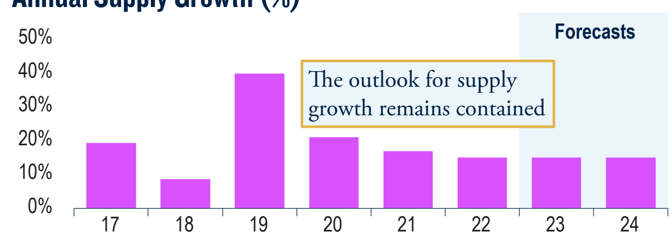
In recent years, supply has kept pace with strong demand growth as data center capacity has grown by around 25% each year since 2019. However, supply is moderating as the surge in construction and financing costs over the past year starts to weigh on profit margins, discouraging development. New supply is set to slow to 15% per year over the next two years (**Exhibit EU5**) – which is signficantly lower than estimates for cloud and internet traffic growth, which are running at about 30% per year.

Exhibit EU5: Supply Growth Remains Contained Across Major European Markets

Europe Data Center Supply by Commissioned Power (megawatts)



Annual Supply Growth (%)



Sources: Structured Research, JLL, Green Street, Cushman & Wakefield, DCByte, PGIM Real Estate. As of May 2023.

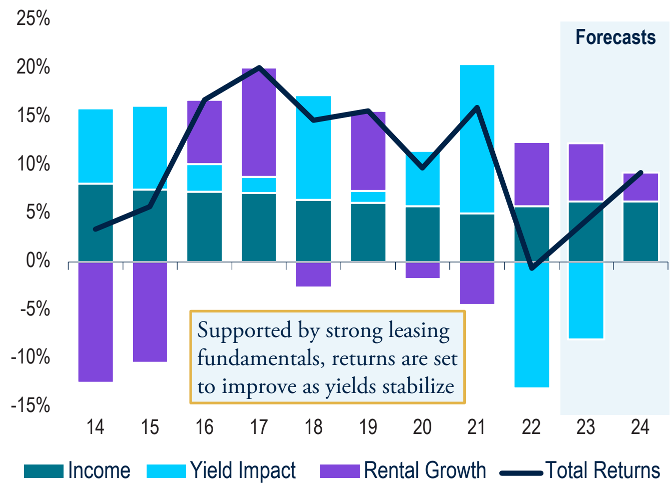
Vacancy rates have fallen – particularly for hyperscale data centers where supply constraints are growing. Even allowing for some potential efficiency gains, the pace of new development in sought-after locations is lagging. Rental growth prospects for major European markets are strong as it remains challenging for occupiers to secure space in best-in-class facilities. Rents grew by an average of 7% in 2022 across key data center hubs, including London, Paris and Dublin, and a similar pace of growth is expected across 2023.

Going forward, return prospects remain favorable, particularly with expected improving economic fundamentals in 2024 and a stabilization of yields given that much of the repricing has now taken place (**Exhibit EU6**). The shifting demand toward modern, high-capacity facilities – particularly those associated with environmental goals – implies both near-term and structural opportunities in the sector.

Going forward, return prospects remain favorable, particularly with expected improving economic fundamentals in 2024 and a stabilization of yields given that much of the repricing has now taken place

Exhibit EU6: Returns Picking Up on the Back of Ongoing Rental Growth and a Diminishing Impact From Rising Yields

Estimated Annual European Data Center Total Returns (%)



Note: Returns are for unlevered, powered shell and core assets in major markets. 2022 figures are estimated.

Sources: JLL, Green Street, PGIM Real Estate. As of May 2023.

LOGISTICS
Structural Opportunities

The rapid adjustment in pricing is combining with a still-favorable medium-term demand outlook to drive attractive opportunities in European logistics

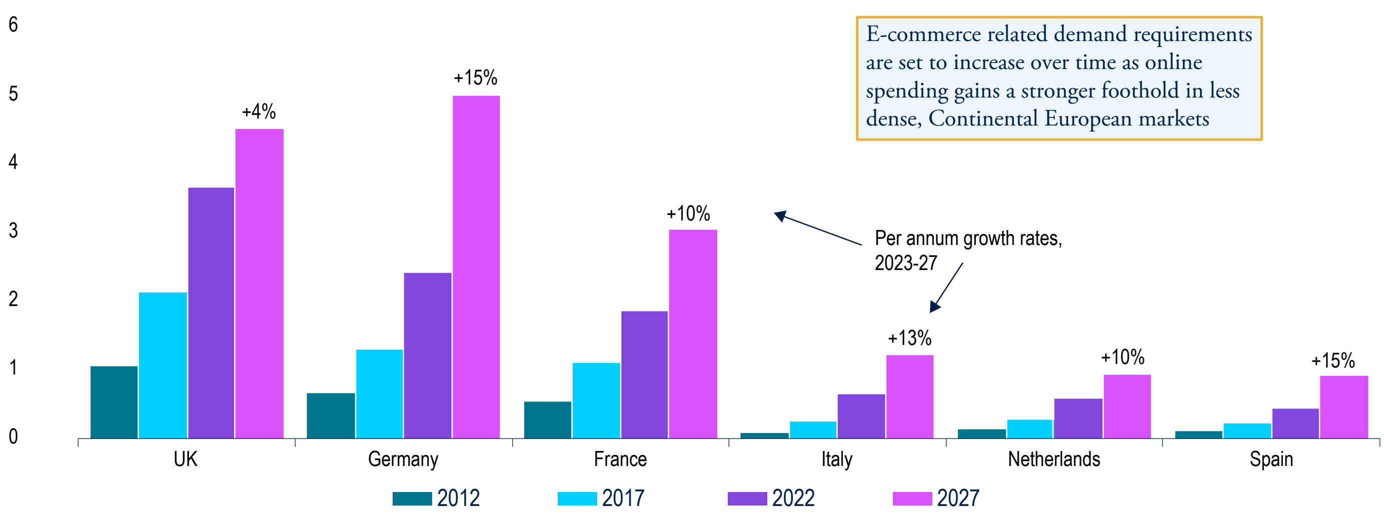
Logistics yields are now over 100 basis points higher than in the middle of last year. Such a pace of adjustment means pricing is rapidly approaching levels at which logistics looks an attractive investment proposition again. This is particularly the case where the rental growth outlook remains resilient, for example in major port and core distribution markets including Amsterdam, Rotterdam, Berlin, Paris and London.

Perhaps the most visible demand driver is still that e-commerce players are leasing large amounts of logistics space to fulfill increased consumer demands. This story is expected to remain in place, with forecasts for double digit e-commerce growth driving logistics space demand over the next five years (**Exhibit EU7**).

Our demand indicator, made up of economic data behind sectors driving logistics market performance, is clearly positive for the coming years despite some near-term headwinds (**Exhibit EU8**). Besides e-commerce and nearshoring, industrial production is still in recovery mode after a pandemic-driven slowdown and supply chain disruption in recent years. In addition, there are requirements from traditional brick and mortar retailers that are restructuring their supply chains in order to compete with pure e-commerce players and also from supermarkets and other businesses moving perishable goods.

Exhibit EU7: Logistics Demand Story Strong and Varied

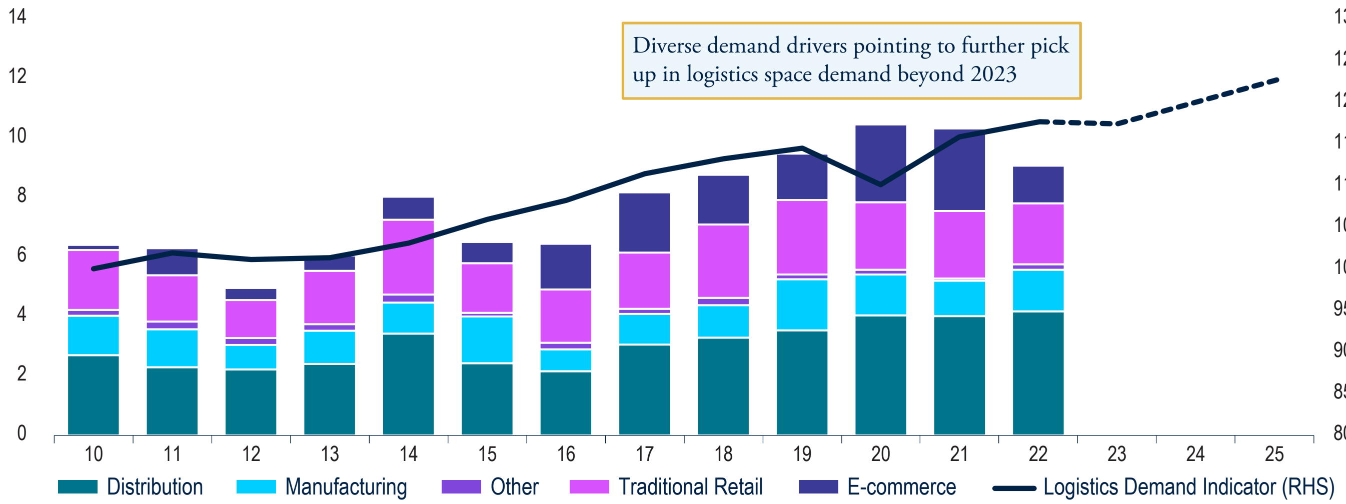
E-commerce Related Urban Logistics Demand (million square meters)



Sources: Oxford Economics, PMA, Knight Frank, Eurostat, PGIM Real Estate. As of May 2023.

Exhibit EU8: E-commerce a Strong Driver, but Traditional Logistics Occupiers Also Remain Active

Logistics Demand Indicator (Index, 2010=100) and Take-Up by Sector (million square meters)



Sources: Oxford Economics, PMA, PGIM Real Estate. As of May 2023.

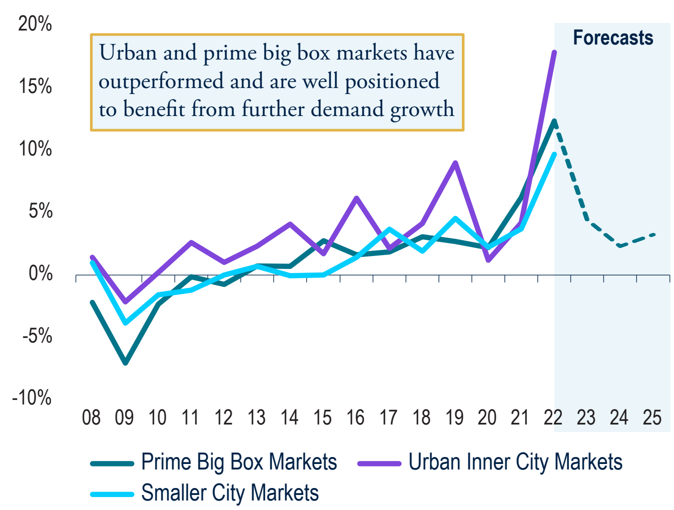
This strong demand backdrop is resulting in rapid nominal rental growth across many markets despite supply being at elevated levels too, with the strongest rental growth being recorded in urban markets, such as London, Munich and Lyon, and in prime big box logistics markets that serve major urban conurbations (**Exhibit EU9**).

A strong, speculative-driven supply story recorded in recent years is now turning as capital values fall and bank financing availability slows. Development activity is slowing sharply, providing further support for near-term rental growth.

Opportunities in the sector are very much around buying into a resilient demand story with prevalent rental growth, set against subdued supply, at least in the near term, at an attractive basis given the repricing that has already taken place. Urban logistics is clearly providing the strongest rental growth and we expect that trend to continue. Other segments of the market also offer rental growth-driven returns, including in the cold storage sectors, notably in the UK where post-Brexit demand growth is coming up against limited supply.

Exhibit EU9: Urban Story Remains Strong, Supply Started to Fall Back

Annual Logistics Rental Growth by Market Type (%)



Sources: PMA, Cushman & Wakefield. PGIM Real Estate. As of May 2023.

SENIOR AND STUDENT LIVING
Structural Opportunities

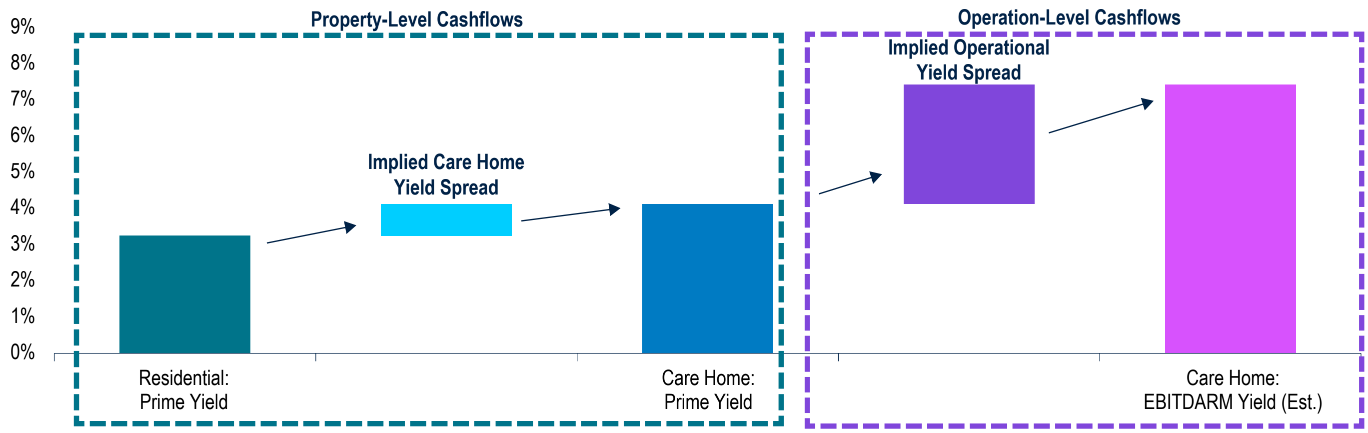
Operational living sectors are set to benefit from strong age demographic tailwinds, and offer potentially higher returns to investors who are willing to take on operating risk

One common factor among many of the demographic-driven living sector opportunities is the need for personal services, amenities and communal spaces over and above a typical rent contract – for example, providing additional learning support for overseas students or personal care for senior residents.

Higher returns can be achieved by taking an equity stake or forming a joint venture with an existing operator, or by creating a dedicated platform with which to manage specialist assets such as student accommodation or senior living. At that point, all income is essentially accruing to the property owner and, instead of receiving a fixed rent, the investor receives all of the income less all operating costs and taxes, often referred to as an EBITDARM yield (**Exhibit EU10**).

Exhibit EU10: A Stylized Breakdown Shows How Investors Can Earn Higher Yields on Operational Investments

Operational Yield Worked Example: UK Care Homes



<u>**Yield Spread Explanation**</u>

Implied Care Home Yield Spread = Observed Residential Market Prime Yield – Observed Care Home Market Prime Yield = 0.9%

Estimated EBITDARM Yield = Care Home Market Prime Yield * Rent Coverage Ratio (i.e., EBITDARM/Rents 1.8x) = 7.4%
Rent Coverage Ratio of 1.8x is a market standard assumption used to reflect the required level of operating profits to cover rental obligations

Implied Operational Yield Spread = Care Home Market Prime Yield – Estimated EBITDARM Yield = 3.3%

Sources: Knight Frank, PGIM Real Estate. As of May 2023.

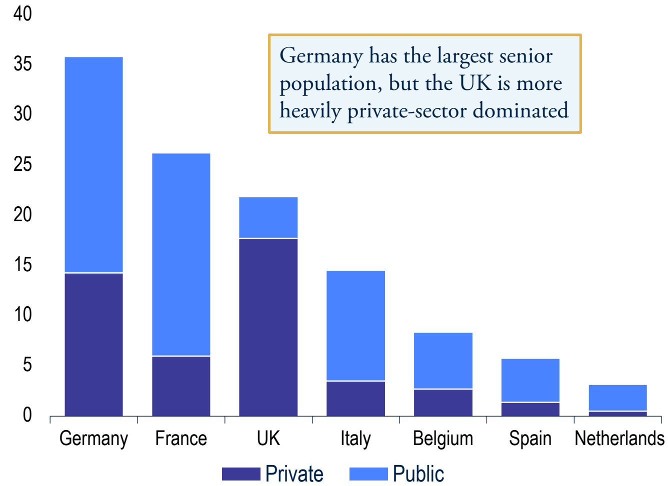
Returns are now materially higher, but of course so are operational risks linked to staffing costs, regulations and any other factors that affect business profitability. It is also important to remember that operational investments are subject to the same repricing forces as traditional property types, showing up in lower earnings multiples on transactions. Having specialist expertise and experience is crucial to effective deployment of capital in operational assets.

The senior living story is one of the most compelling from a demand perspective, but the opportunity differs by market. Among major countries, most have similar per capita bed provision and Germany has the largest overall senior care sector given the size of the country and age profile of its population (**Exhibit EU11**).

However, the UK remains the most investable market given the sector is dominated by private sector providers. A strategy targeting relatively high net worth residents in outer London and the South East region of England is preferable as future residents typically have a wide pool of assets to draw on to finance their care needs alongside home equity.

Exhibit EU11: The UK Has the Largest Private Care Market in Europe

European Care Home Market Size (€ billion)



Sources: Savills, PGIM Real Estate. As of May 2023.

TARGETED GRADE A OFFICES

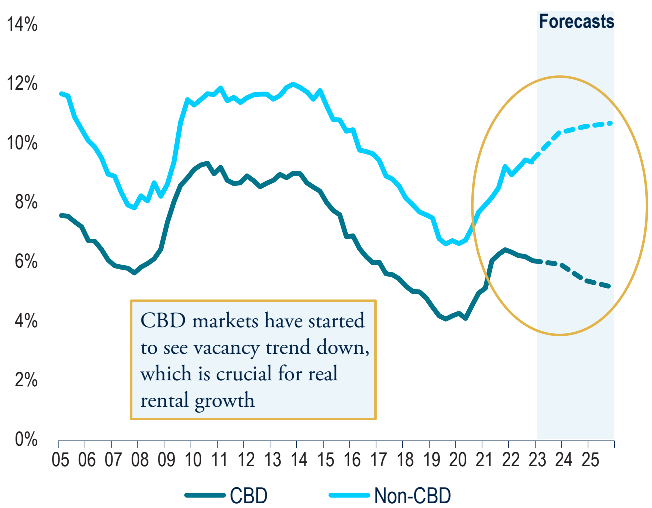
Structural Opportunities

Investment opportunities in offices are restricted to the best assets in CBD markets that fulfill the criteria demanded by tenants and landlords alike

A tight labor market and expectations for stronger productivity growth through the next cycle are supporting the office demand outlook, while vacancy remains significantly below average after a low supply cycle, especially in CBD markets, where it is still falling as occupiers continue to compete for the best assets to encourage employees back to the office (**Exhibit EU12**).

Exhibit EU12: Vacancy Remains Low in CBD Areas

CBD and Non-CBD Office Vacancy Rate – Europe (%)



Sources: Cushman & Wakefield, PMA, PGIM Real Estate. As of May 2023.

We are seeing this playing out very clearly in Paris CBD, but also in central areas of Amsterdam and Madrid. Rising vacancy in non-CBD and suburban markets emphasizes that the market is a selective one.

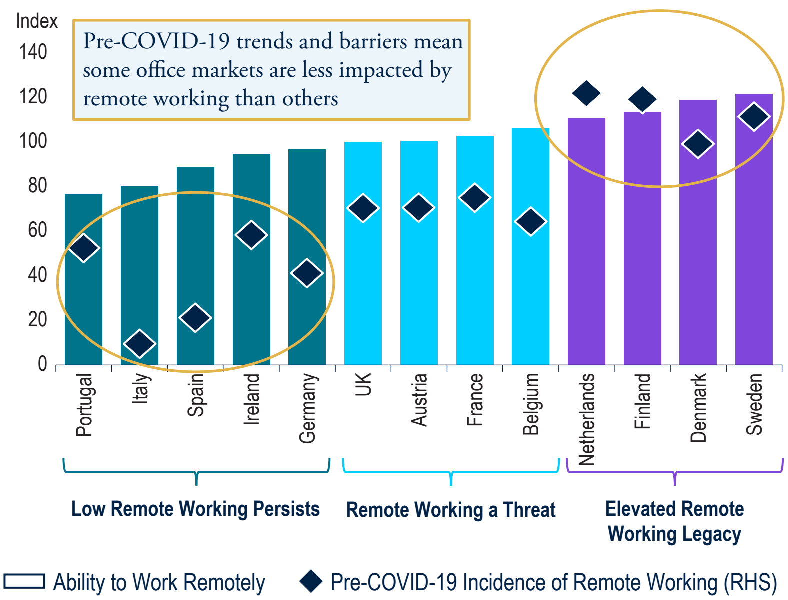
Short-term supply forecasts and rental growth revisions over the last 12 months already point to falling development activity, as is the case in particular in large German office markets, such as Hamburg or Berlin, but also in CBDs in Paris and London. Limited grade A supply is part of the reason that rental growth forecasts are holding up well in the face of recession risks.

For investors, there are two crucial factors to consider in the office sector: risks around the adoption of remote and hybrid working practices and rising ESG-related capex requirements.

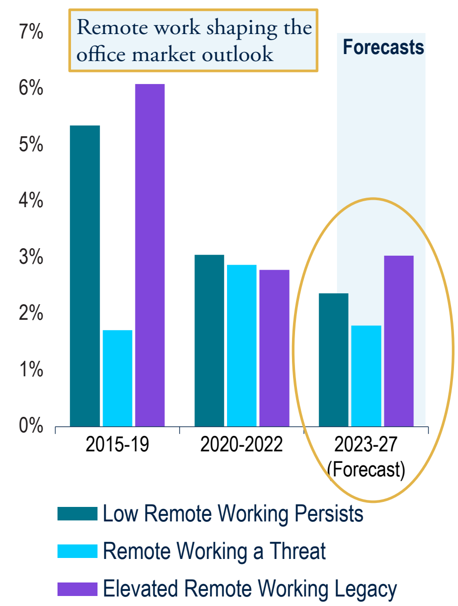
Remote and hybrid working is affecting markets differently depending on pre-pandemic trends. Office markets such as Milan in Italy, Madrid and Barcelona in Spain and Frankfurt and Munich in Germany had a low flexible working share and have been relatively resilient to remote working since 2020. The main reasons for this are issues around working culture, the lack of prevalence of large businesses and in many cases limited household residential space to facilitate remote working (**Exhibit EU13**).

Exhibit EU13: Remote Working Is Affecting Cities Differently

Pre-2020 Ability of Office Workers to Work Remotely vs Incidence of Remote Working (% of Workers)



Annual Prime Office Rental Growth by Remote Work Prevalence (%)



Sources: Oxford Economics, PMA, PGIM Real Estate. As of May 2023.

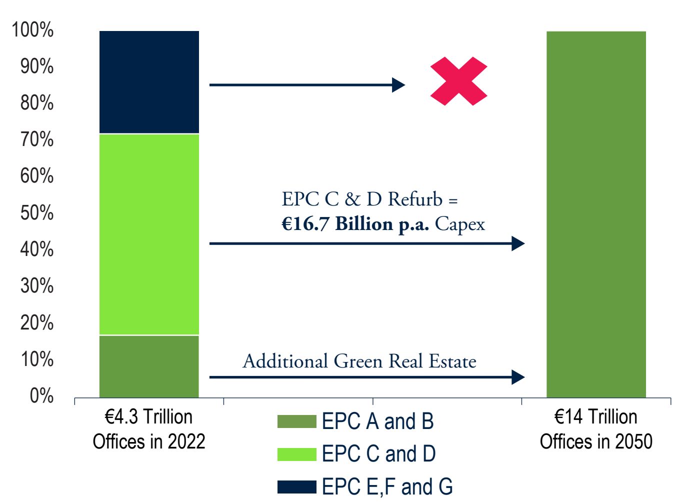
At the other end of the spectrum are Nordic markets, including Copenhagen and Stockholm, and Amsterdam in the Netherlands that have long been frontrunners in remote working and flexible working arrangements, where changes caused by the pandemic haven't been that significant.

Investors need to tread carefully around a third group of markets. This includes large markets in the UK and France, such as London, Lyon and Paris, that had a moderate remote working culture pre-pandemic but where it has quickly become a more accepted way of working. A shift toward a Nordic-Netherlands model could imply a steep drag on demand in the coming years – rental growth forecasts are lower for this reason.

In terms of environmental factors, the risk of an office market bifurcation – into assets that either meet regulations or can viably be adapted thus maintaining their value, and those that simply cannot – is growing. However, it is also creating an opportunity to deliver ESG-compliant, grade A office space, both via ownership of new and existing buildings, as well as via a huge need for capital to retrofit otherwise obsolete offices. Estimates point to a capital need in the region of 17 billion per annum to reposition all EPC C&D offices to be compliant with the highest ESG standards (**Exhibit EU14**).

Exhibit EU14: ESG Capital Requirements Remain Large and ESG Compliance Leads to Value Preservation

"Green" CapEx and New Office Requirements



Sources: Real Capital Analytics, McKinsey & Company, PGIM Real Estate's *Bird's Eye View 2021*, PGIM Real Estate. As of May 2023.

LENDING INTO THE FUNDING GAP
Cyclical Opportunities

A growing funding gap is set to combine with sharply falling values, creating a set of debt investment opportunities as a large wave of refinancing needs come through

A widening funding gap is emerging, driven by a high volume of refinancing, higher interest rates and tightening lending conditions. Growing regulatory pressures further reduce banks' appetite for commercial real estate as they continue to address the final implementation of Basel III. These conditions are creating opportunities for nonbank lenders across the capital stack.

The finalization of Basel III introduces risk sensitivity and proposes three different risk weights depending on LTV. Among other things, it imposes "minimum output floors" raising the minimum regulatory capital that all banks are required to hold. The target implementation date for the UK and EU has been deferred to January 1, 2025 due to the pandemic. This will have a greater impact on lower risk loans and lending in Continental Europe, where banks still dominate the CRE financing market, creating an opportunity for nonbank loans in the senior lending space.

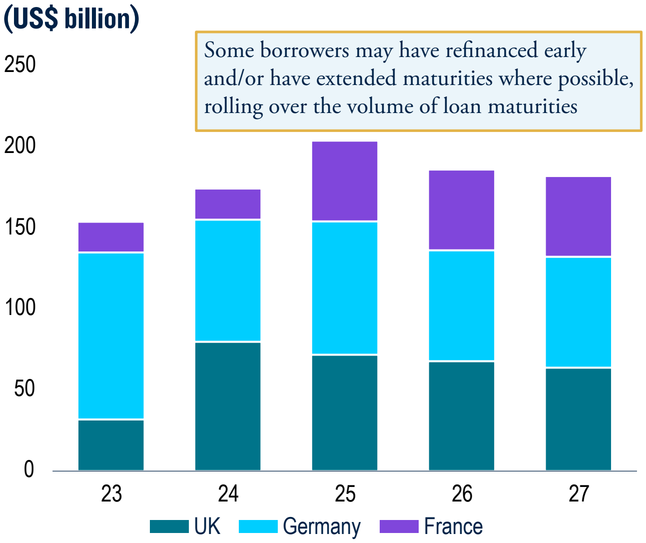
Across major European markets, loan maturities are high relative to history, averaging US$177 billion per year between 2023 and 2025 compared to an annual average of about US$100 billion through the last cycle (**Exhibit EU15**). This is a culmination of high transaction volume during 2018 and 2019 along with elevated capital values and loan rollovers and extensions during the pandemic.

Loans maturing face a steep correction, with capital values expected to fall by about 25% from nominal peaks. However, widespread loan distress is not anticipated as lending throughout the last cycle was disciplined. Even so, banks are focused on debt serviceability and imposing stricter financing conditions limiting debt capital availability. This is creating a widening funding gap, where borrowers will need to either inject fresh capital to continue or face an exit sale and loss of capital.

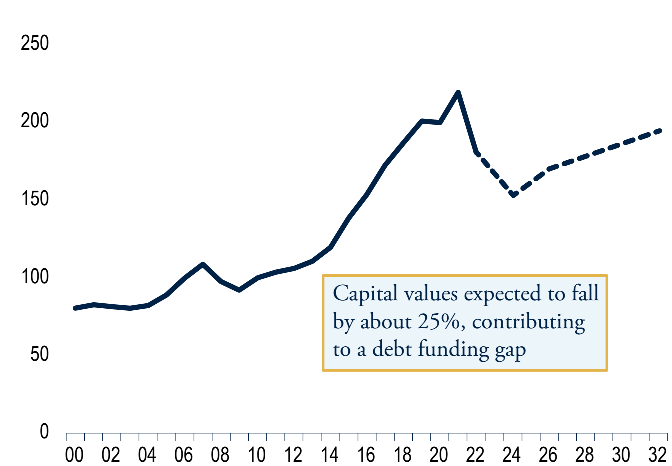
Opportunities for mezzanine and junior debt lenders are twofold. First, is to provide gap financing to assist with refinancing of loans not in distress. Second, is motivated by the wide spectrum of performance at asset level. Such factors as challenging occupier conditions, rising costs and a slowing leasing market outlook all point toward certain assets facing problems – such as longer void periods and difficulty re-leasing – that will require an injection of capital to address.

Exhibit EU15: Lots of Debt Maturing as Values Fall Across Europe

Loan Maturities Across UK, Germany and France (US$ billion)



Prime Nominal Capital Value Index, Europe All Property (2010=100)



Note: PGIM Real Estate estimates based on loans collateralized by commercial real estate (Germany and France) and includes institutionally held residential (Germany) and undrawn development debt (UK).

Source: ECB, Bayes Business School, IREBS, IEIF, IFPI, PGIM Real Estate. As of May 2023.

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