



TPG Angelo Gordon's Capital Markets Perspectives

FIRST QUARTER 2024

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Table of Contents

CMP Overview	3
Investment Strategies	
Leveraged Loans	4
High Yield Credit	7
Structured Credit	9
Middle Market Direct Lending	15
Merger Arbitrage	17
Convertible Arbitrage	19
U.S. Real Estate	20
Europe Real Estate	24
Asia Real Estate	26
Net Lease Real Estate	32

TPG Angelo Gordon's Capital Markets Perspectives (CMP) is a quarterly publication that provides information and our portfolio managers' views on the credit and real estate markets. We hope you find this to be a valuable resource and enjoy our latest look at the markets.

TPG Angelo Gordon is a diversified credit and real estate investing platform within TPG, a leading global alternative asset management firm. TPG Angelo Gordon manages approximately \$76 billion* across a broad range of credit and real estate strategies, and we have been investing on behalf of pension funds, corporations, endowments, foundations, sovereign wealth funds, and individuals for 35 years.

Over our entire history, TPG Angelo Gordon's investment approach has consistently relied on disciplined portfolio construction backed by rigorous research and a strong focus on capital preservation.

We have grown by pursuing strategies that complement and build on our core capabilities. Combining deep industry sector and market expertise with a collaborative, knowledge-sharing culture, we creatively seek out investment opportunities that allow us to exploit inefficiencies in global credit and real estate markets.

* TPG Angelo Gordon's currently stated AUM of approximately \$76 billion as of September 30, 2023 reflects fund-level asset-related leverage. Prior to May 15, 2023, TPG Angelo Gordon calculated its AUM as net assets under management excluding leverage, which resulted in TPG Angelo Gordon AUM of approximately \$53 billion last reported as of December 31, 2022. The difference reflects a change in TPG Angelo Gordon's AUM calculation methodology and not any material change to TPG Angelo Gordon's investment advisory business. For a description of the factors TPG Angelo Gordon considers when calculating AUM, please see the disclosure linked [here](#).

CMP Overview

Credit markets finished 2023 very strong, with spreads closing near their tightests for the year despite historic rate volatility, a short-lived regional banking crisis, and an overall increase in default activity.

In corporate credit, the U.S. and European high yield markets posted positive returns in the fourth quarter – extending positive performance to achieve double-digit full-year gains – and U.S. and European high yield bond spreads both tightened. Of note, the tone in the market shifted drastically in the fourth quarter, as prevailing expectations moved away from a higher-for-longer interest rate environment and toward an increased likelihood of a soft landing, with earlier and more aggressive easing by the Fed. This shift drove the 10-year Treasury yield to fall to 3.87% after topping 5% in mid-October. Within U.S. high yield, the trailing 12-month default rate, including distressed exchanges, increased to end December; given this sequential elevation, the default rate closed the year at a more normalized mid-cycle level. Within leveraged loans, December brought a price rally that resulted in record levels of loans trading above par, triggering a refinancing wave that boosted issuance volume in the fourth quarter and has continued at a feverish pace into 2024.

In structured credit, home prices continued to rise and RMBS spreads mostly continued to tighten during the fourth quarter. The average 30-year fixed mortgage rate in the U.S. dropped to 6.4% at the end of the year, down from a high of 7.8% at the end of October – the highest level since 2000. Supply of homes remained constrained, with the well-publicized “lock-in effect” limiting sales of existing homes and new listings below historical averages. In asset-backed securities, spreads were mostly tighter in the fourth quarter. Consumer performance data has generally been within underwritten expectations, but certain sectors are now underperforming pre-pandemic levels. In commercial real estate debt, the rally in the 10-year Treasury yield sparked life into the CMBS market through year-end. The prospect of lower interest rates, stable to improving operating fundamentals, and tighter spreads had CMBS originators and issuers more active to end 2023.

Direct lending M&A volume in the final quarter of 2023 was the highest it has been since the fourth quarter of 2022, with activity up across all three segments of the middle market. All-in yields increased and were highest for the lower and core middle markets. Additionally, interest coverage ratios have remained stable, suggesting borrowers have been able to manage the elevated rate environment by passing through or cutting costs.

Turning to real estate, with the worst of global inflationary concerns seemingly in the rearview mirror, market participants are taking stock of the aftermath. Real estate investment volumes declined meaningfully through 2023, making price discovery increasingly challenging during the year. Challenges related to limited financing availability,

the rising cost of debt, and overall uncertainty regarding valuations kept many investors on the sidelines as the market witnessed significant downward pressure on real estate valuations. However, an increased level of clarity on go-forward rate movements from global central banks should be a catalyst to improve investment activity, and it is expected that we will see bid-ask spreads decrease and clarity on valuations increase moving ahead. Importantly, underlying real estate fundamentals have generally proven resilient – save for U.S. office – which should provide a ballast to the sector. That said, the dynamic of elevated debt maturities over the coming years paired with substantially higher interest rates is expected to create opportunities to identify high-quality assets at reset valuations.

In the U.S., consensus is pointing to a soft landing following a period of rapid interest rate increases. With greater clarity on the horizon, market participants expect to see a more active investment environment in 2024 following a 51% year-over-year decrease in investment volume in 2023. Valuations continued their downward trend in the fourth quarter, declining an average of 5.9% year-over-year through December 2023. Market sentiment points to a continued downward trend, as sellers who have been hesitant to transact will be forced to exit in the face of a material amount of upcoming debt maturities.

In Europe, central banks have tempered inflation across the region following a 400-basis-point increase in interest rates. This has put significant pressure on the real estate market, causing investment volumes to decrease by 55% year-over-year as of the end of the third quarter. Valuations have been impacted meaningfully across nearly all sectors; however, valuation levels are expected to level through 2024. We continue to expect the material amount of debt maturing beginning in late 2024 will result in a significant amount of stressed and distressed sellers entering the market.

In Asia, real estate investment volumes were less impacted in 2023 as compared to the broader global markets, as inflation has been broadly kept in check across the region and GDP growth has been relatively stable. Real estate fundamentals continued to favor industrial across the region, while there have been pockets of softness in office – particularly in China and Hong Kong.



Josh Baumgarten
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Head of Credit*



Adam Schwartz
*Co-Managing Partner
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Leveraged Loans

Leveraged loan performance remained strong in the fourth quarter of 2023. The J.P. Morgan U.S. Leveraged Loan Index posted a 2.79% return, ending the quarter with a yield of 8.6% and spread of 500 basis points. As of the end of December, the J.P. Morgan U.S. Leveraged Loan Index recorded a 13.17% full-year gain, slightly underperforming high yield and outperforming investment grade, which recorded full-year returns of 13.51% and 7.96%, respectively. In Europe, the J.P. Morgan European Leveraged Loan Index posted a 1.74% quarterly return, ending the fourth quarter with a spread of 542 basis points and yield of 7.96%. On a full-year basis, the J.P. Morgan European Leveraged Loan Index returned 13.56%. Additionally, BB-rated CLO tranches were among the best performers in the asset class in 2023, with a full-year return of 24.0% – just shy of the 26.26% annual gain for the S&P 500.

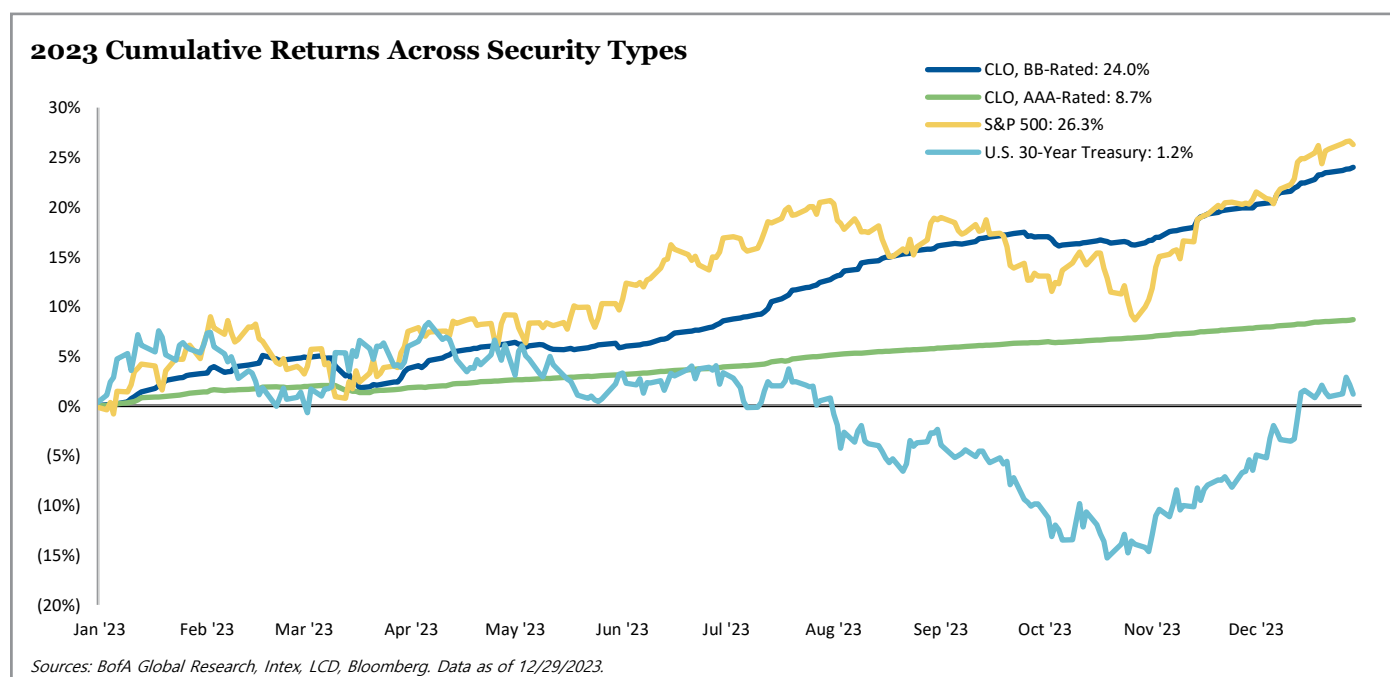
Market participants spent much of 2023 discussing a potential wave of defaults, as the rapid increase in interest rates put persistent pressure on leveraged issuers' cash flows. Against this backdrop, the default rate for leveraged loans was 3.15% in the U.S. as of the end of the fourth quarter – a manageable rate for most diversified loan investors. Looking ahead, J.P. Morgan is forecasting that the U.S. loan default rate will rise to 3.25% in 2024, hovering above the long-term average of 3.0%.

Turning to supply, gross U.S. institutional loan issuance – including refinancing activity – totaled \$113 billion in the fourth quarter and \$370.1 billion in full year 2023. Notably,

December saw \$52.5 billion in gross new issuance, 84% of which was attributable to refinancing on the back of rapidly falling yields. Looking ahead, we expect a wave of loan refinancings will occur in 2024, as nearly 40% of the leveraged loan index now trades above par. Consensus suggests issuance volume will be higher this year, driven by refinancings.

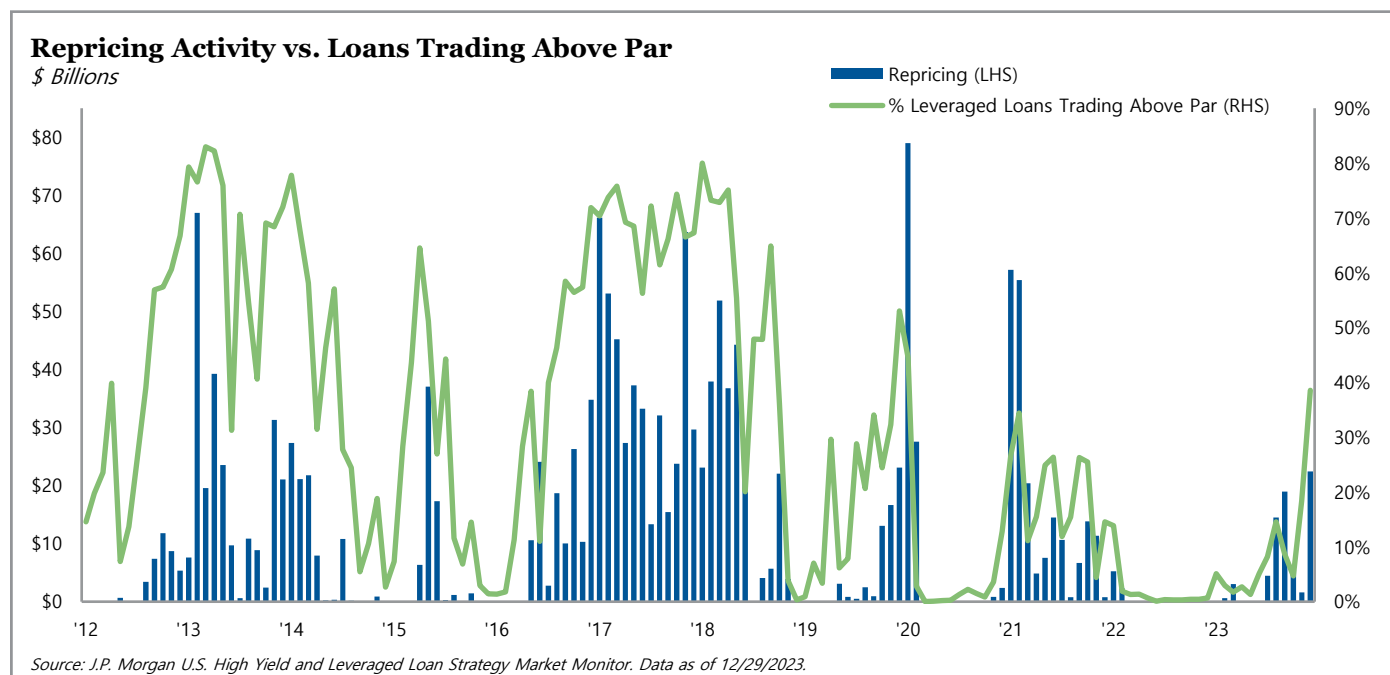
From a demand perspective, CLOs comprise roughly two-thirds of overall leveraged loan ownership, and leveraged loan issuance totaled \$139.3 billion in 2023. Interestingly, private credit CLOs have historically made up 10% of total annual leveraged loan issuance, but in 2023, they accounted for 24% of total issuance. We view private credit as another source of funding for leveraged debt issuers and believe it will have a role to play in the broadly syndicated loan (BSL) market moving forward.

Looking back, fundamentals as of the end of the third quarter of 2023 were mixed, but we believe they were weakening off a strong base. Looking ahead, we expect market participants will remain focused on monitoring corporate issuers' margins and access to liquidity.

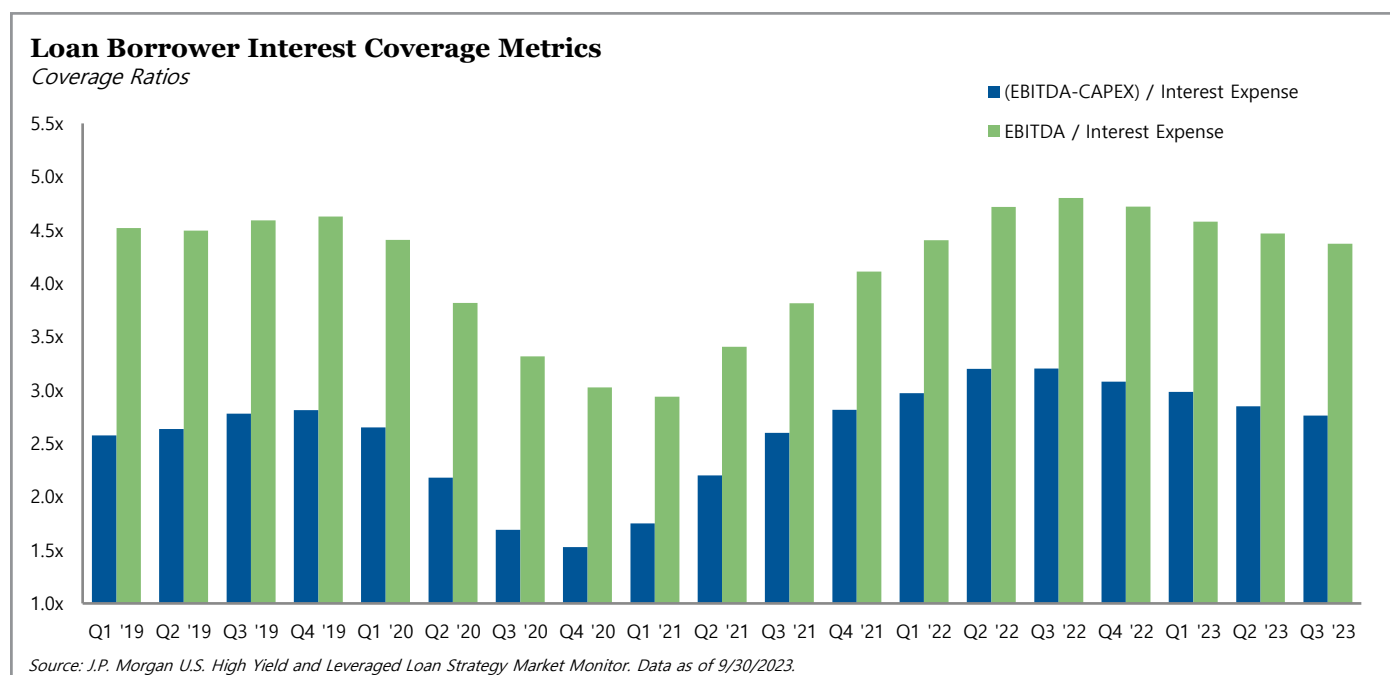


2023 was a 'Goldilocks' year for CLO liabilities, as the full-year return for BB-rated CLO tranches was just shy of that for equities, but with far less volatility. Looking ahead, technicals suggest it may be another strong year for the liability stack.

Leveraged Loans (continued)



As prices rallied in December, a larger percentage of loans traded above par, triggering a wave of refinancings.

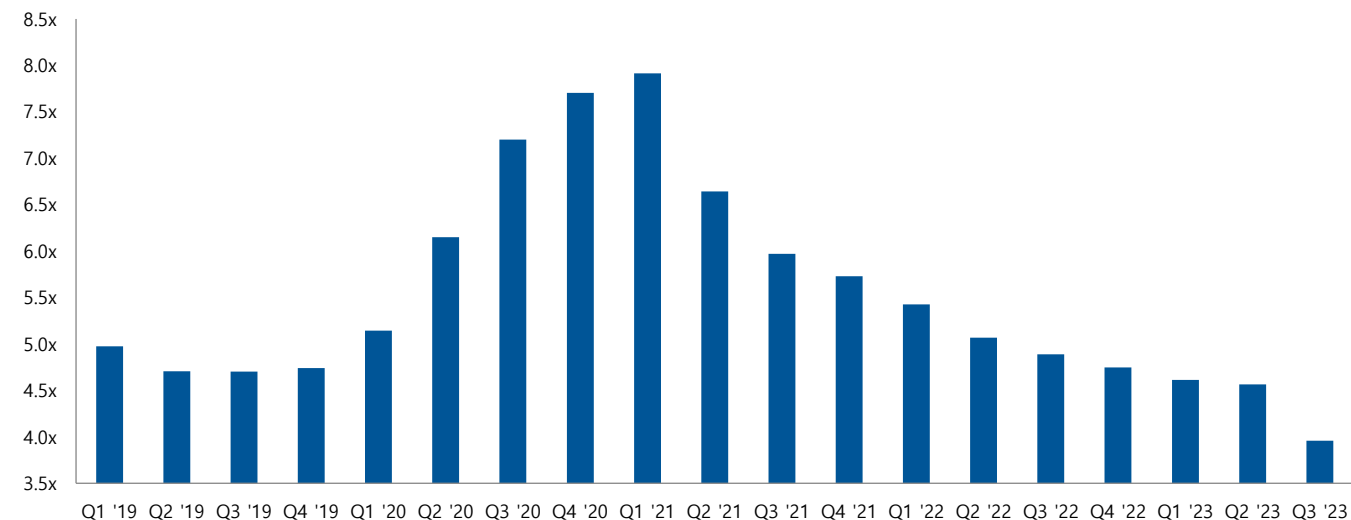


Borrowers' coverage metrics continue to reflect the impact of rising interest rates and are expected to continue to erode over the coming quarters.

Leveraged Loans (continued)

Loan Issuer Leverage

LTM Debt/EBITDA

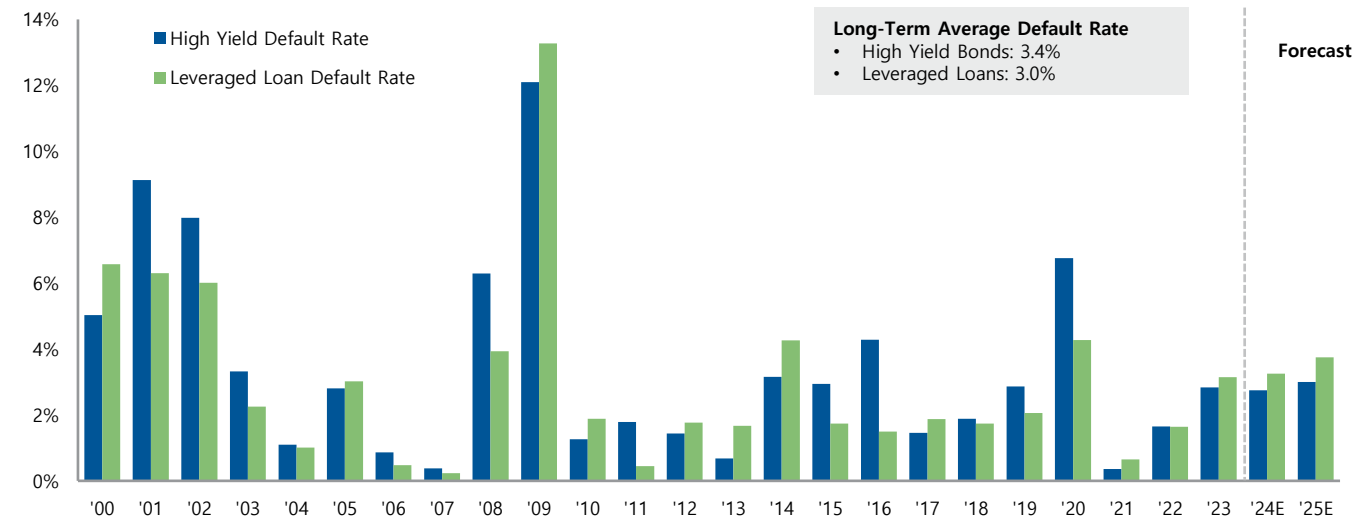


Source: J.P. Morgan U.S. High Yield and Leveraged Loan Strategy Market Monitor. Data as of 9/30/2023.

Leverage for loan issuers is at a four-year low, albeit comfortably above the average among high yield issuers.

High Yield Bond vs. Loan Default Rate

Par-Weighted Default Rates



Note: 2014 default rates are ex-TXU.

Source: J.P. Morgan U.S. High Yield and Leveraged Loan Strategy Market Monitor. Data as of 12/31/2023.

We continue to expect default rates for leveraged loans to rise in 2024.



Maureen D'Alleva
Head of TPG AG CLOs

For more information on TPG AG CLOs, click [here](#).

High Yield Credit

Both the U.S. and European high yield markets generated positive performance in the fourth quarter, with gains of 6.9% in the United States and 5.6% in Europe for the three-month period ended December 31, 2023. Easing inflation data and dovish Fed commentary led investors to price in earlier and more aggressive rate easing in 2024, which drove strong returns in November and December, as well as the full year. For the full year 2023, U.S. high yield produced a return of 13.5% and the European high yield return reached 12.7%, a substantial reversal on the 2022 full-year returns of -10.6% in the U.S. and -9.7% in Europe.

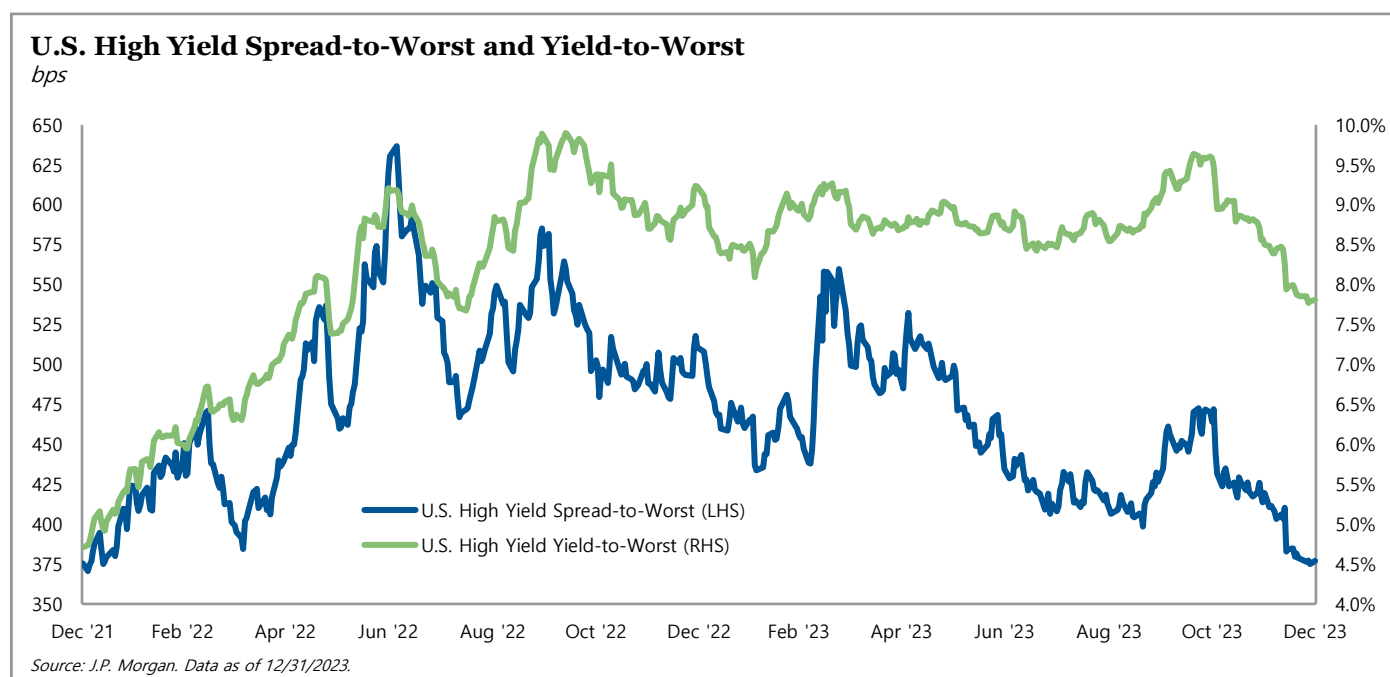
In the United States, high yield bond spreads tightened 43 basis points during the quarter, ending the year at 377 basis points compared to 490 basis points to start the year. Yields also tightened 115 basis points in the fourth quarter, ending the year at 7.8% compared to 9.2% to start the year. Lower-rated bonds outperformed relative to higher-quality bonds for the year; CCCs gained 19.9% while BBs generated a 11.8% return for the year. In Europe, high yield spreads tightened 44 basis points, ending the year at 449 basis points. Unlike in the United States, lower-quality CCCs lagged BBs modestly in Europe during the year, returning 11.0% versus 11.6%.

During the fourth quarter, 24 U.S. companies defaulted or completed a distressed exchange on a combined \$20.5 billion of debt, increasing the full-year combined total to \$83.7 billion, a 75% increase from 2022 and the fourth-largest annual total on record. This volume increased the 12-month trailing default rate up to 2.8%, though still

below the long-term historical average. The European high yield market experienced two defaults during the quarter, resulting in the 12-month trailing default rate rising to 2.4%. For the full year 2023, 14 companies restructured, affecting a combined €11.4 billion of European currency bonds.

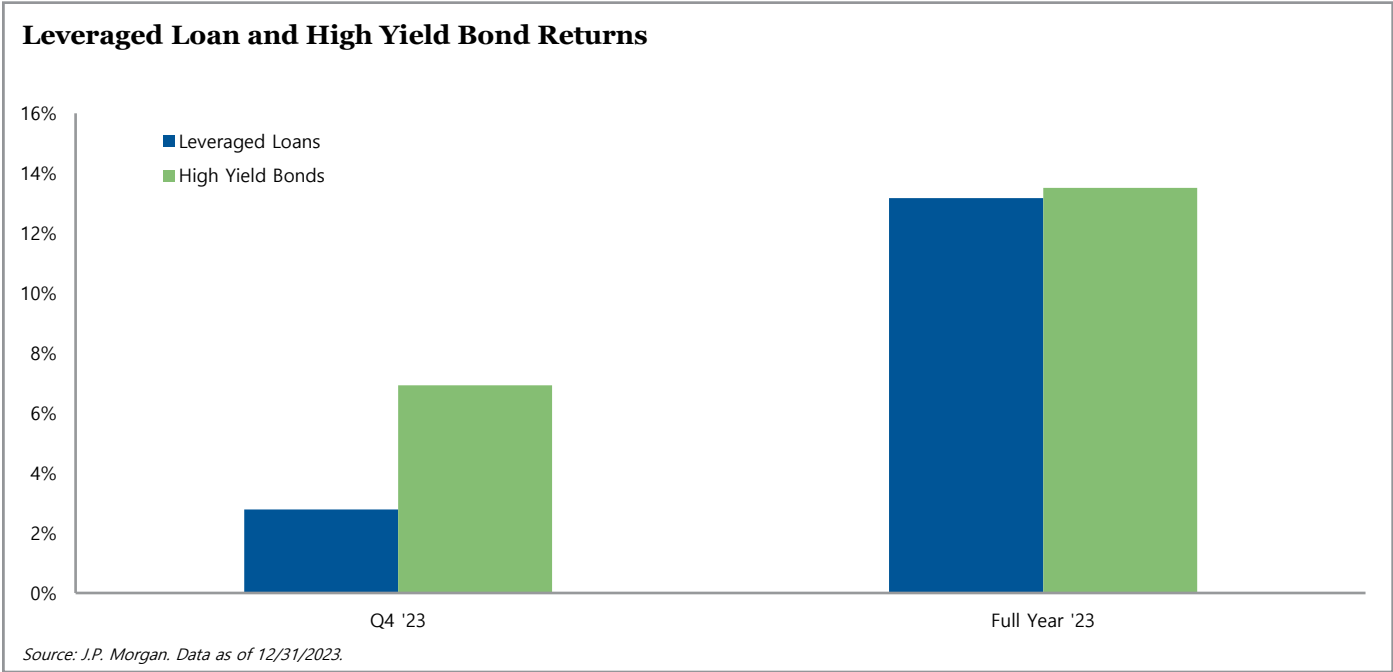
There was approximately \$42 billion of new issuance volume in the U.S. in the fourth quarter. This increased the year-to-date issuance total to \$175.9 billion, compared to \$106.5 billion in 2022, which was near a record low. With that being said, 2023 was still the second-lightest new issue activity in the high yield market in over a decade. In Europe, high yield new issuance amounted to €10.4 billion during the quarter, bringing the year-to-date total to €56.9 billion – a 79% increase from 2022 but nearly one-third lower than the 10-year average.

U.S. high yield funds experienced \$5.3 billion of net inflows in the fourth quarter, but even with this intake, the 2023 annual net outflows amounted to \$7.9 billion. In Europe, high yield fund inflows of €930 million during the fourth quarter increased the 2023 annual net inflows to €2.1 billion.

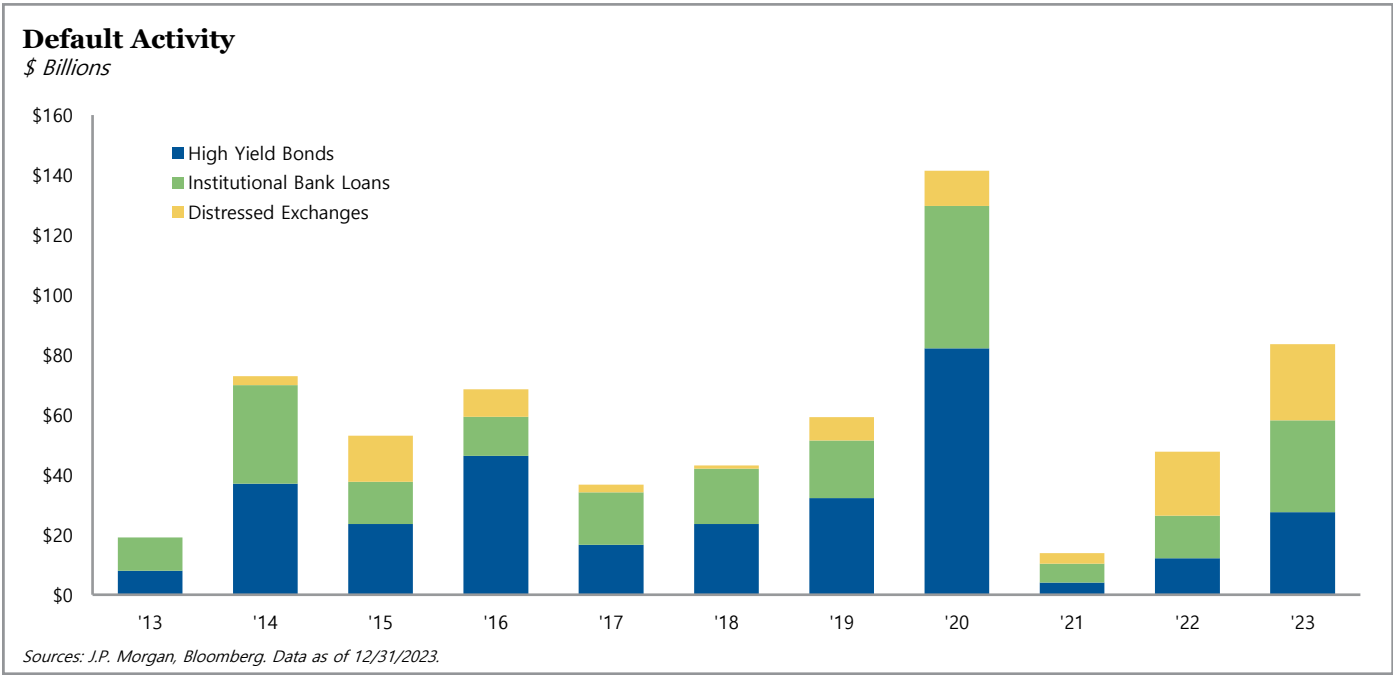


Yields have remained elevated, but spreads have compressed.

High Yield Credit (continued)



Strong fourth quarter performance drove full-year returns in high yield.



Defaults ticked up in 2023, and distressed exchanges are becoming a larger percentage of volume.



Ryan Mollett
Global Head of TPG
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For more information on TPG AG Credit Solutions, click [here](#).

Structured Credit: RMBS

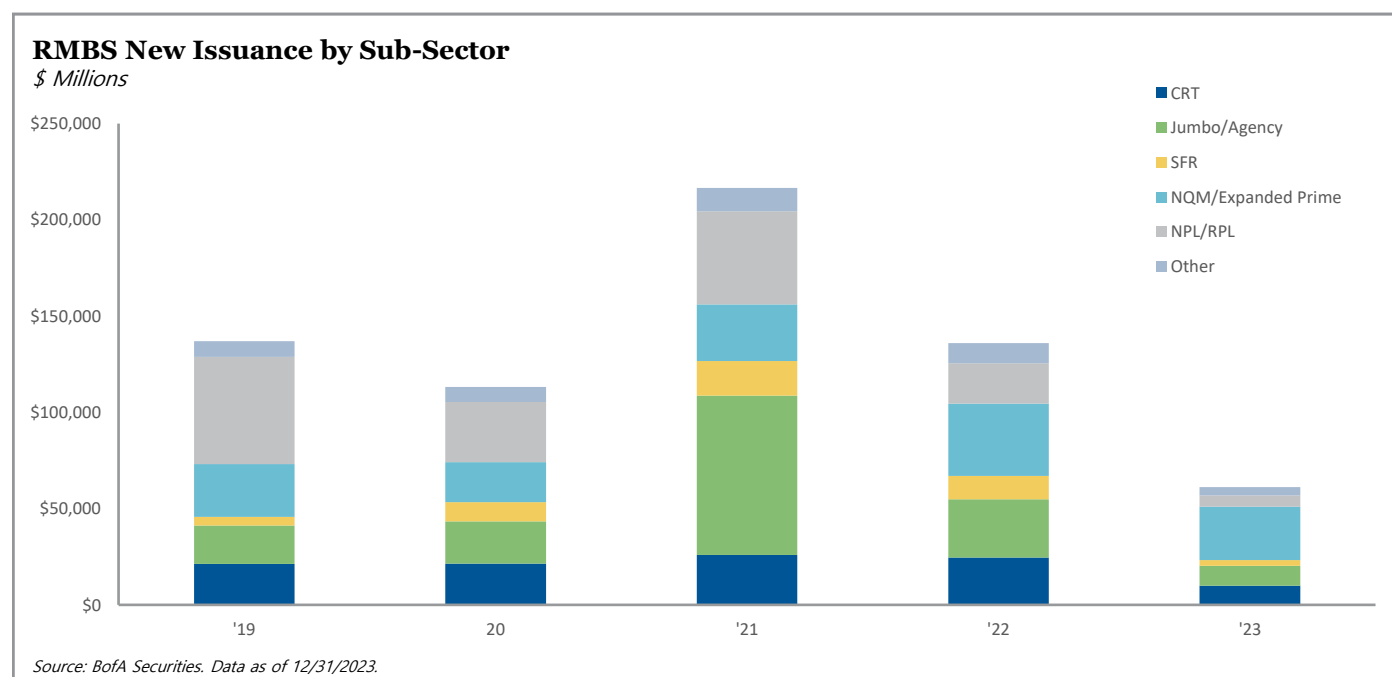
RMBS spreads mostly tightened during the fourth quarter, capping a positive year overall. Credit risk transfer (CRT) tranches were tighter by up to 50 basis points, with tranches at or near investment grade tightening most in the fourth quarter. For the full year 2023, CRT posted impressive gains, particularly for deep-credit tranches, which were as much as 500 basis points tighter, while the middle was around 300 basis points tighter. Senior non-qualified mortgage (NQM) spreads were around 20 basis points tighter during the quarter, while BBB-rated NQM were wider depending on the profile. The NQM sector finished the year tighter but still remains wide of February 2022 levels, which we think suggests ample runway for additional upside potential. Year-to-date total returns were between 13% and 22% for mezzanine and subordinate CRT tranches, respectively, and around 6% to 7% for legacy RMBS.

At \$16 billion, fourth quarter RMBS issuance was in line with the prior two quarters. Issuance for all of 2023 underwhelmed, however, totaling only \$65 billion – roughly half of the almost \$137 billion recorded in 2022, making it the slowest year since 2016. Issuance of nearly every type of RMBS fell, in most cases sharply, except for the second lien/HELOC sector, which is still in its infancy. Issuance of benchmark CRT fell 60% to \$8.3 billion amid lighter origination volumes and a shift away from high-cost subordinate tranches by issuers. Non-QM was the most active sector, posting \$28 billion with a relatively modest 25% year-over-year decline in issuance. Sell-side analysts predict full-year 2024 issuance will be \$65 to \$90 billion, higher than 2023 but still down from \$127 billion in 2022 and \$213 billion in 2021.

Home prices continued to rise, with the S&P CoreLogic Case-Shiller U.S. National Home Price Index up 6.3% through October 2023 and now exceeding the prior peak in June 2022 by 1.5%. A survey of research shows varied home price expectations in 2024, ranging from -5% to +4%. Our underwriting continues to be conservative and includes a 10% peak-to-trough decline in home prices before gradually returning to a longer-term rate of +3%.

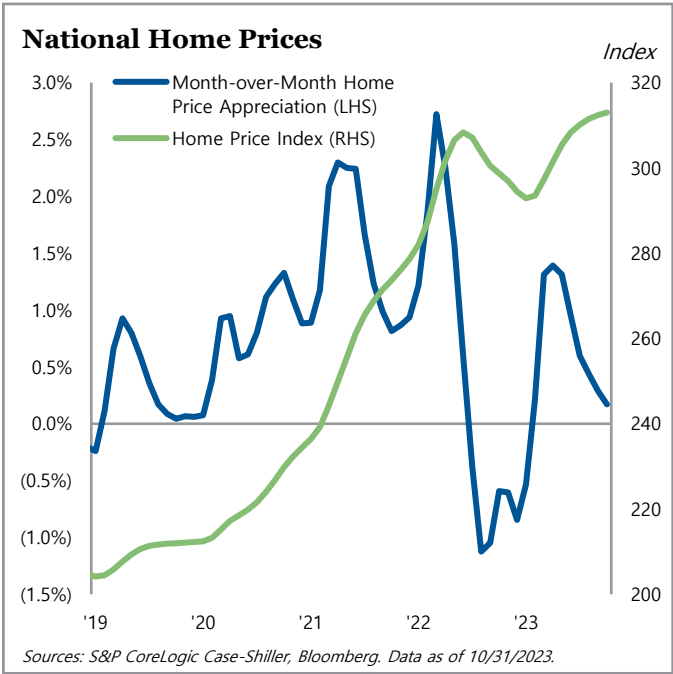
Prevailing mortgage rates were considerably lower over the final two months of the year, falling to 6.4% after reaching 7.8% at the end of October – the highest level since 2000. Nationally, the average effective mortgage rate was 3.7% as of September. Current rates thus leave the well-publicized “lock-in effect” in force, albeit weakened modestly.

Total existing home listings were 1.13 million in November, in line with most of 2023 but down significantly from pre-pandemic years. New listings totaled 3.96 million year-to-date through November 2023, which was almost 1.7 million units less than the same period in 2021.

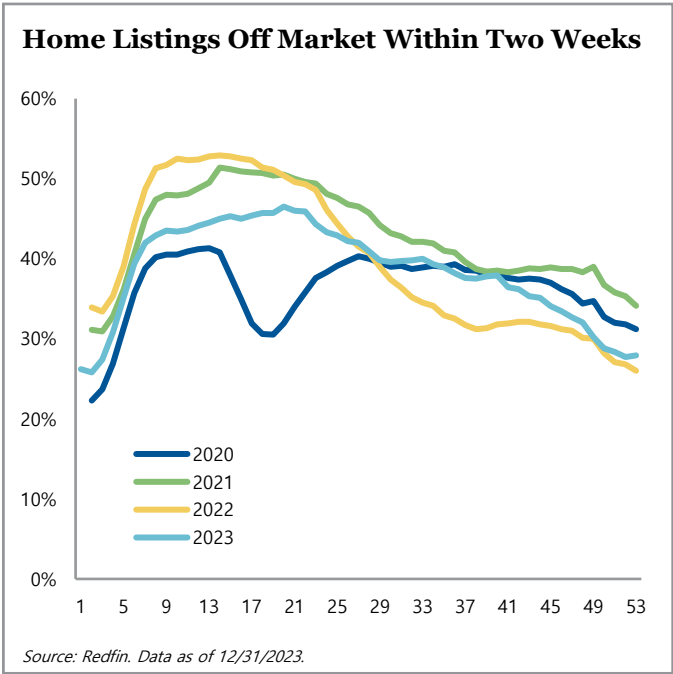


Muted housing activity has limited RMBS new issuance.

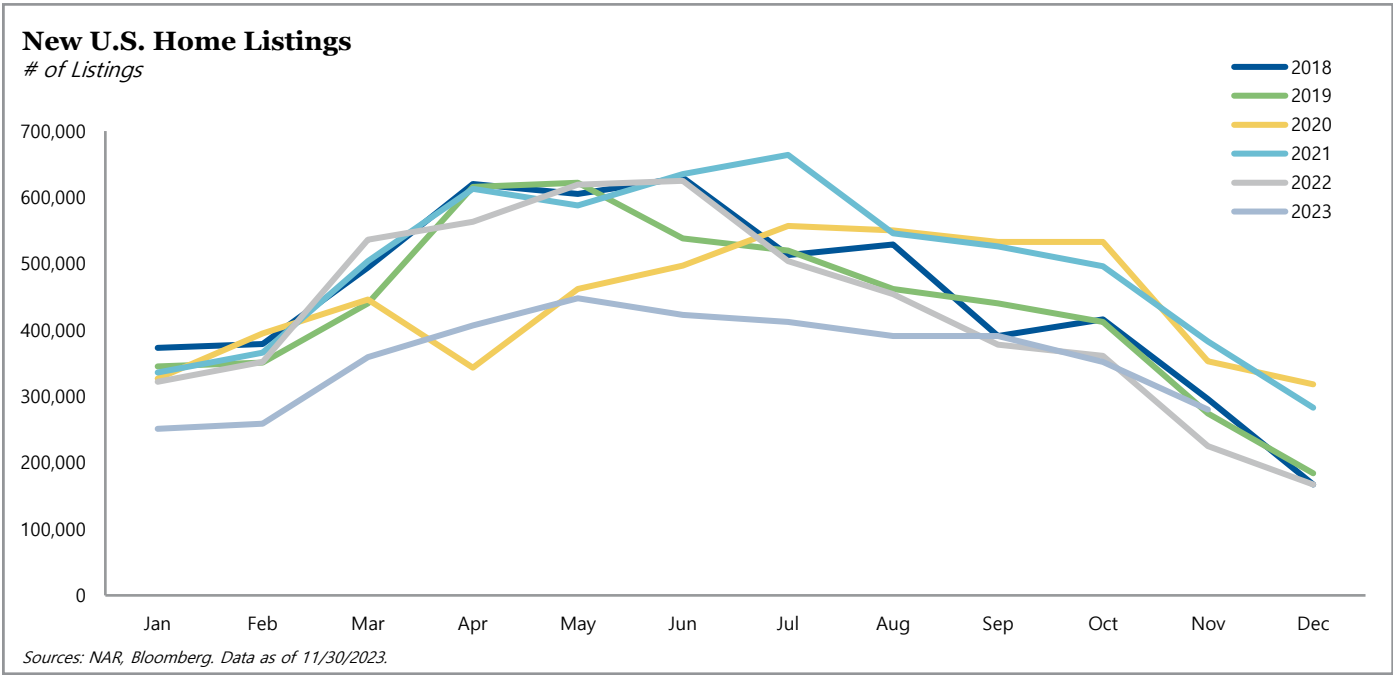
Structured Credit: RMBS (continued)



Home prices continued to set new record highs.



The percentage of listings going off market within two weeks seasonally declined.



Through November, new listings in 2023 were sharply lower.

Structured Credit: ABS

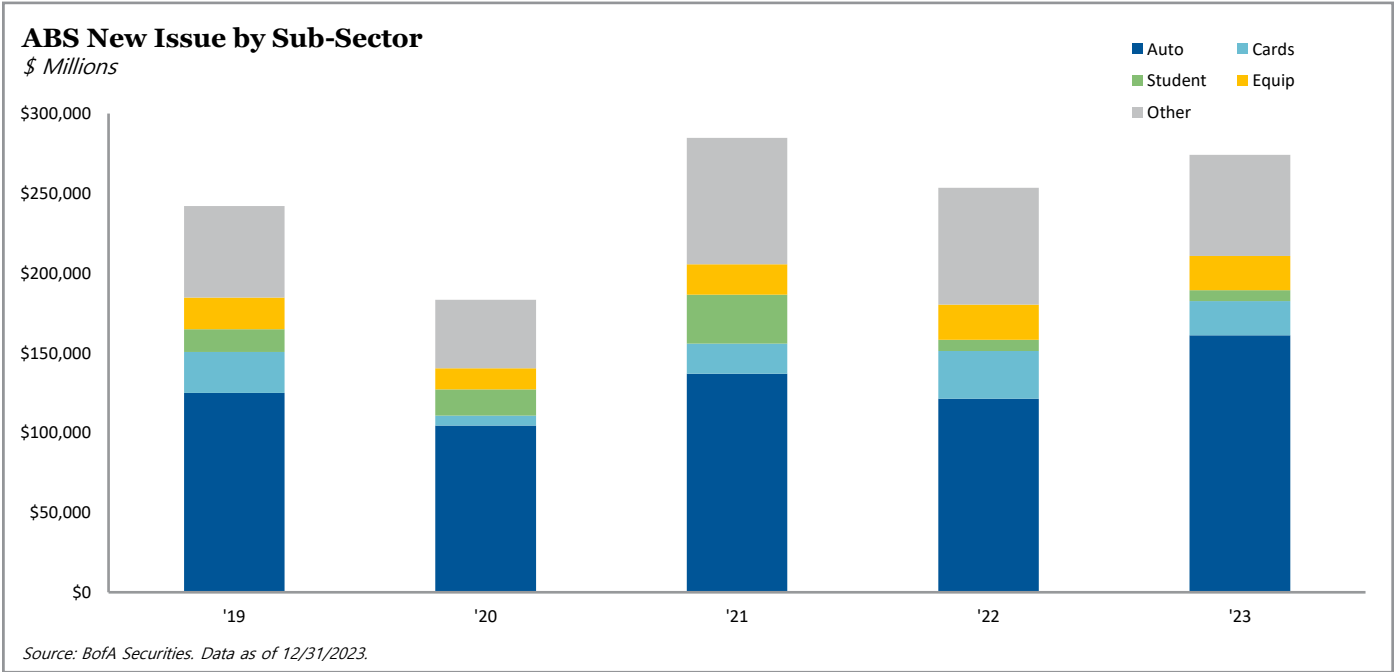
ABS spreads were mostly tighter during the fourth quarter, with benchmark ABS sectors like student loans and credit cards mostly 5-10 basis points tighter and other pockets of ABS up to 20 basis points tighter. The exception to the tightening was subordinate subprime auto ABS, which widened 10-25 basis points on weaker fundamentals and unfavorable headlines. For the year, however, ABS sectors were very mixed. Subprime autos saw the most tightening among benchmark sectors, around 125 basis points for BBB profiles and 20-30 basis points for other investment grade tranches, while credit cards were up to 70-80 basis points wider. Overall, aircraft led the year, tightening by 215 basis points while other esoteric assets were up to 40-60 basis points tighter. ABS spreads generally remain wide of February 2022 levels, with BB-rated auto and consumer loan spreads 200-300 basis points wider, for example.

Primary issuance activity totaled \$59 billion in the quarter, around 23% lower than the third quarter on less auto and esoteric ABS issuance. For the year, asset-backed markets fared better than residential, rising 8% to \$274 billion on a sharp rise in auto ABS volumes. Issuance for autos rose almost \$40 billion to \$161 billion, more than offsetting lower esoteric ABS and credit card volumes. Student loan and equipment volumes changed little over the year.

Consumer performance data has generally been within underwritten expectations, but certain sectors are already underperforming pre-pandemic levels. Unsecured consumer loans showed some signs of stabilization in the latest data after months of decline, though default rates have risen above pre-pandemic levels. Auto data

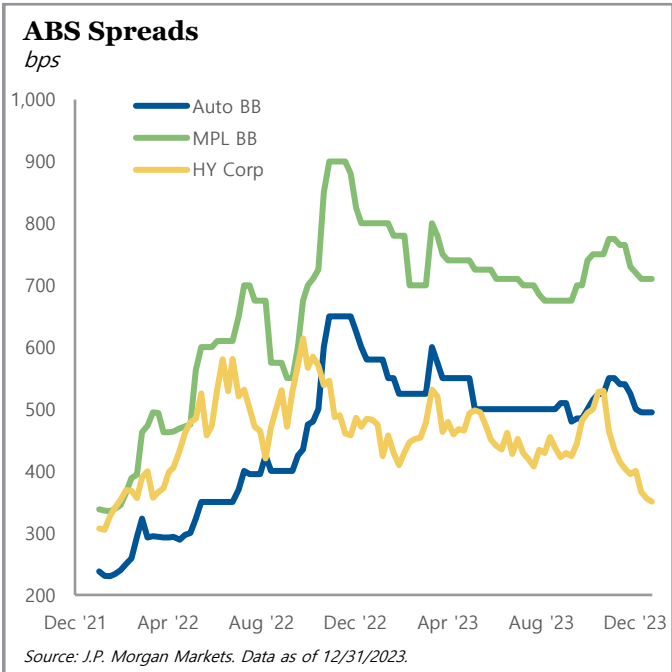
were mixed, as delinquencies for one of the lower quality originator's transactions improved moderately, but overall, sector-level delinquencies rose and prepayments remain near all-time lows. Meanwhile, credit card performance has been stable. As we have noted previously, while a slow grind to pre-pandemic levels has been emerging, credit cards continue to far outperform pre-pandemic levels. Overall, student loan performance was a little softer as delinquency rates seasonally rose and have surpassed pre-pandemic levels. Student loan delinquency rates should continue to rise until tax refunds are processed in the first half of 2024. Legacy private credit student loans continued to generate ample recovery proceeds.

Federal student loan payments resumed on October 1, with the 12-month on-ramp we discussed in last quarter's commentary. Federal student loans are at the bottom of the consumer payment hierarchy given generous forbearance programs, small minimum payments, and long delays before any adverse action is taken. As a result, we believe this payment resumption will be uneventful to the broader consumer ABS complex, though the effect on consumer incomes and credit performance may not be fully observable until after the on-ramp period concludes.

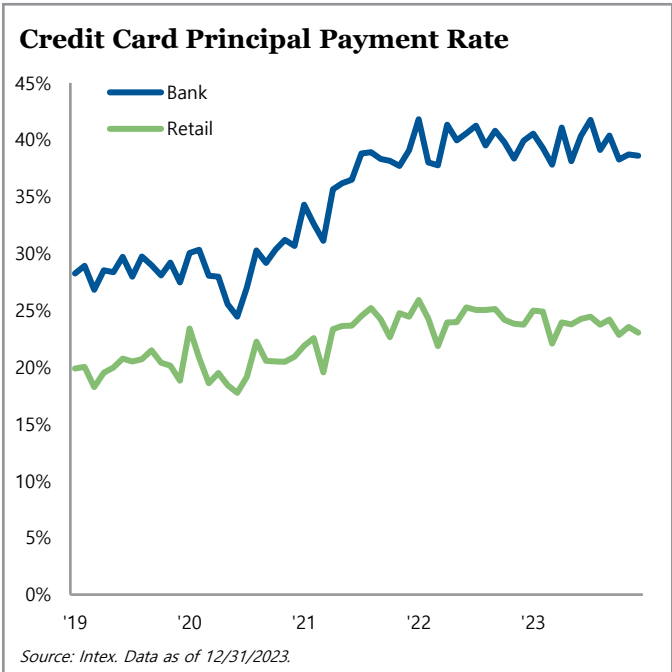


Full-year 2023 ABS issuance was up 8% year-over-year.

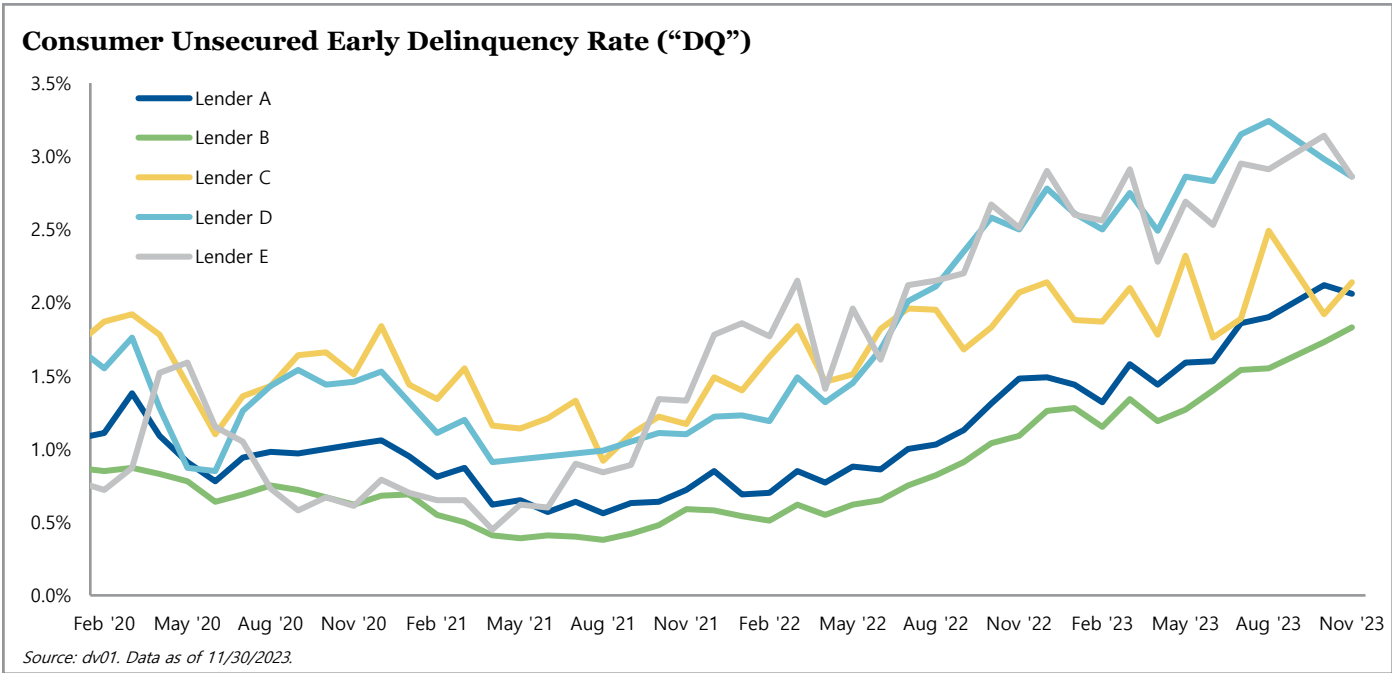
Structured Credit: ABS (continued)



As of year-end 2023, ABS spreads generally remained wide of February 2022 levels.



Credit card principal payment rates have been stable.



Delinquencies for unsecured consumer loans showed some signs of stabilization.

Structured Credit: CMBS

Interest rates were the driving force, and major topic of conversation, in the commercial real estate and CMBS market in 2024. The story continued in the fourth quarter of 2023, when the 10-year U.S. Treasury yield topped 5% in mid-October. Sentiment among commercial real estate (CRE) participants reached rock bottom, and CMBS investors were reticent to transact. However, the combination of the Fed’s comments on November 1, the rally in the 10-year U.S. Treasury yield, and the market’s shift to a broader “risk-on” posture, led to a renewed sense of optimism that sparked life into the CMBS market through year-end.

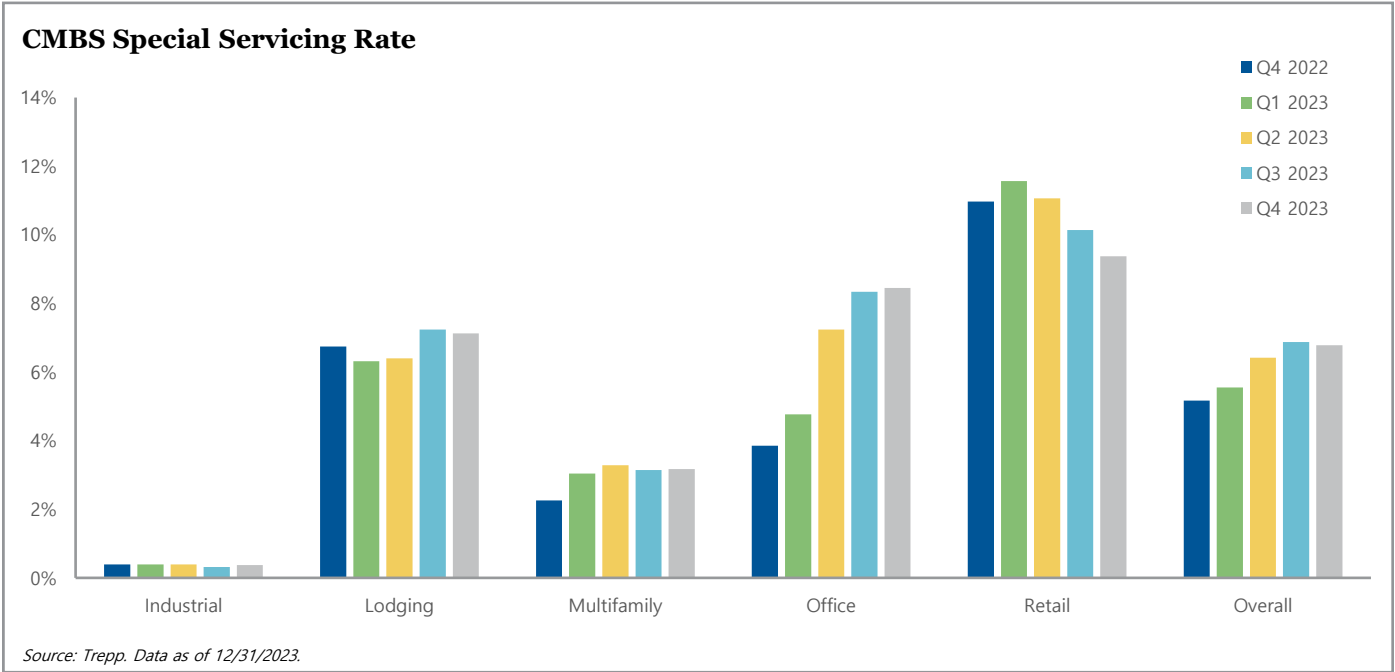
Fundamental operating trends during the first nine months of the year continued into the fourth quarter. The underlying data reflects improving or stable fundamentals for industrial (0.34%), lodging (7.13%), and retail (9.83%), while office (8.87%) and multifamily (3.25%) continued to see assets transferred to special servicing. We agree with J.P. Morgan’s view that “office is struggling from a structural problem while private label multifamily is dealing with a portion of the market with busted capital structures.” We expect the special servicing rate for office to increase in 2024 but the rate for multifamily to plateau below 4%.

CMBS spreads approached 2023 wides in late October, as investor assumptions of an over 5% 10-year U.S. Treasury yield increased fears of widespread credit losses across CRE. That trend reversed on November 1 as spreads ended the year at their post-March tights, with AAA spreads at 115 basis points – a level last seen in the second quarter of

2022. This tightening of AAA bonds reflects the fact that investors assume a much lower probability that loans will be extended and will instead be able to pay off at maturity. Even with a greater than 100 basis point tightening in BBB-spreads, they ended the year hovering around 900 basis points, reflecting continued credit concern within CRE.

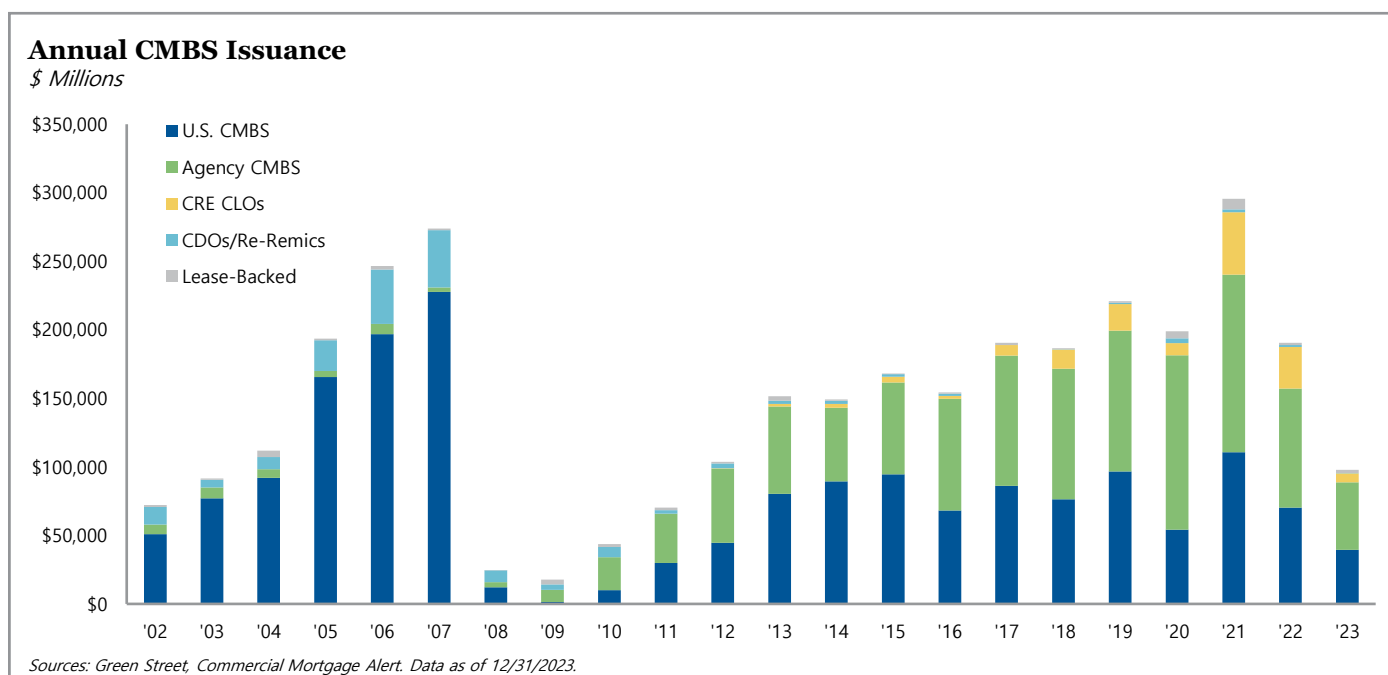
Emboldened by lower interest rates, stable and improving operating fundamentals, and tightening spreads, CMBS originators and issuers had a busy end of 2023. Issuances included 5-year conduit, 10-year conduit, and multiple SASB transactions collateralized by industrial, retail malls, other retail, and hotels; however, there was little multifamily issuance. Agency CMBS ended the year with sub-\$50 billion of issuance, the lowest amount since 2011. As transaction volume picks up and existing lenders increasingly address maturing CRE loans, we expect CMBS issuance to trend higher in 2024.

Looking back on the fourth quarter of 2023, investor concerns felt in October have been replaced with a sense of optimism unseen in the first nine months of the year. We expect that investor response to the increased new issue pipeline will positively impact secondary-market spreads and lead to further increased transaction volume, potentially creating a positive feedback loop in the market.

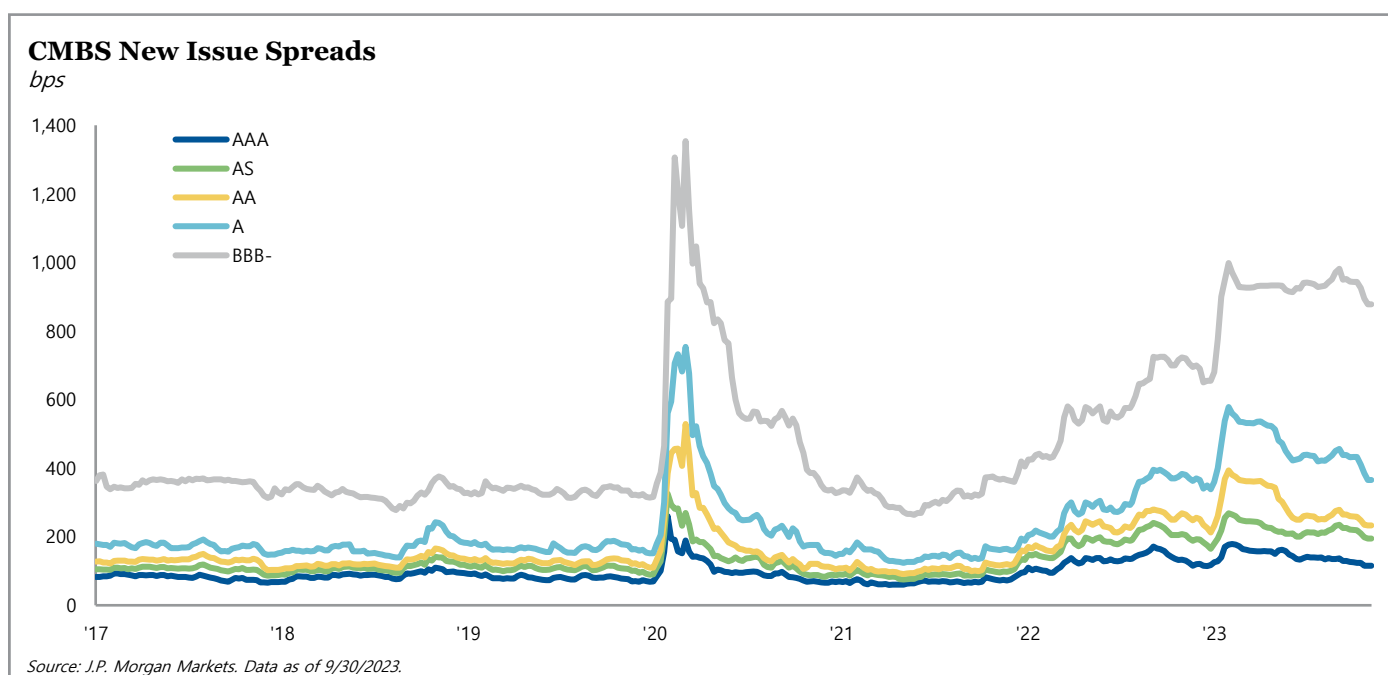


In the fourth quarter, office and multifamily continued to see assets transferred to special servicing, while other sectors reflected improving or stable fundamentals.

Structured Credit: CMBS (continued)



As transaction volume picks up and existing lenders increasingly address maturing commercial real estate loans, we expect CMBS issuance to trend higher in 2024.



Although CMBS spreads ended the year at their tightest level since the bank failures in March 2023, they remained generally wide in comparison to normalized levels.



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Finance, click [here](#).

Middle Market Direct Lending

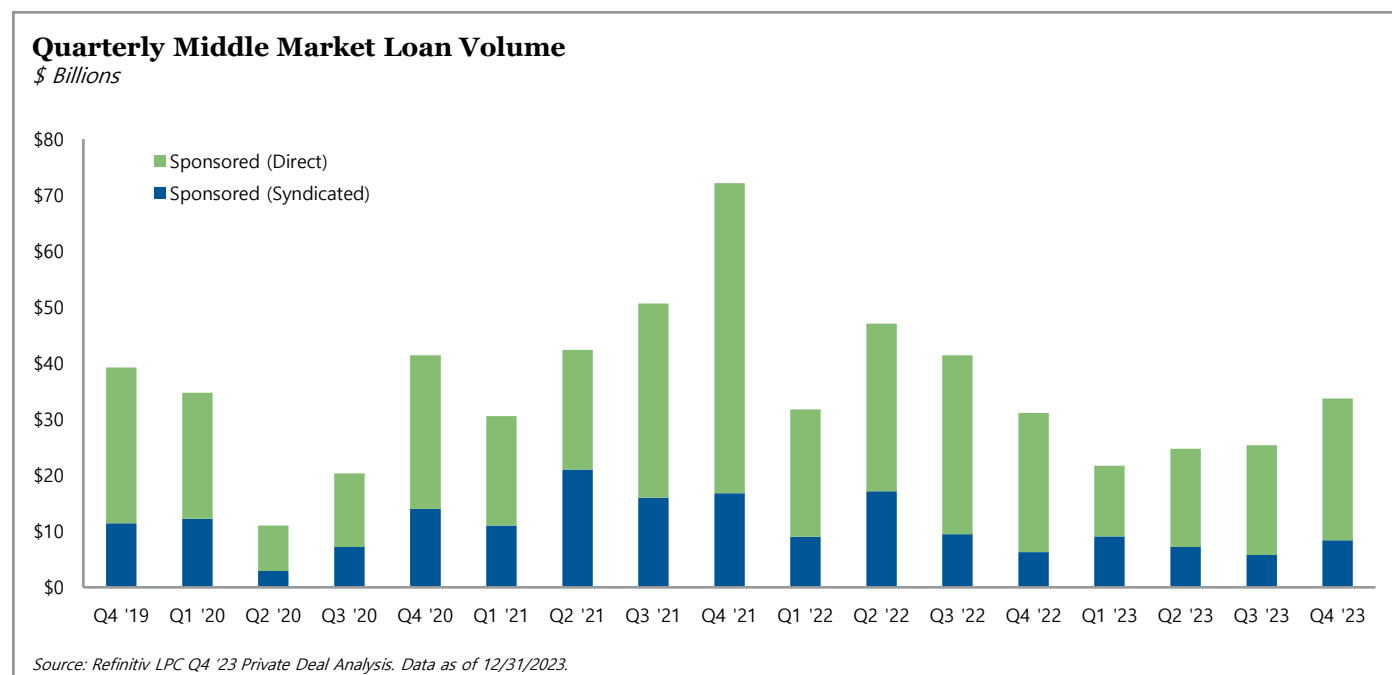
Total sponsored middle market volume, including direct and syndicated activity, amounted to \$34 billion in the fourth quarter of 2023 – up 26% quarter-over-quarter and nearly 10% higher year-over-year. Private credit continued to be the preferred source of financing, with the ratio of direct lending to syndicated volume standing at 2.4x, and middle market direct lending M&A volume was the highest it has been since the fourth quarter of 2022. The increase in M&A lending was driven primarily by activity in the core and upper middle markets, but the lower middle market also experienced a 12% quarter-over-quarter increase in volume and has exhibited over 50% less volatility in quarterly volume over the course of 2023. Looking to activity by industry, business services and healthcare were the most active sectors during the quarter.

Terms for direct lender-led deals continued to be favorable during the fourth quarter, as evidenced by the increase in the yield premium for middle market deals over large corporate deals, which grew for the second consecutive quarter and ended the period at 265 basis points. All-in yields on first-lien term loans remained elevated, standing at over 12%, and yields were the highest for companies with EBITDA between \$10-20 million, at 12.2%. The increase in all-in yields was driven by the lower and core middle markets, while the upper middle market experienced a slight decline. Spreads across the market moderated over the course of 2023, though the lower middle market experienced less pressure on spreads than the broadly syndicated loan market. At year-end, spreads for lower

middle market loans averaged 620 basis points – down approximately 10 basis points since the start of the year – while broadly syndicated loan spreads stood at 410 basis points, down 75 basis points over the same period.

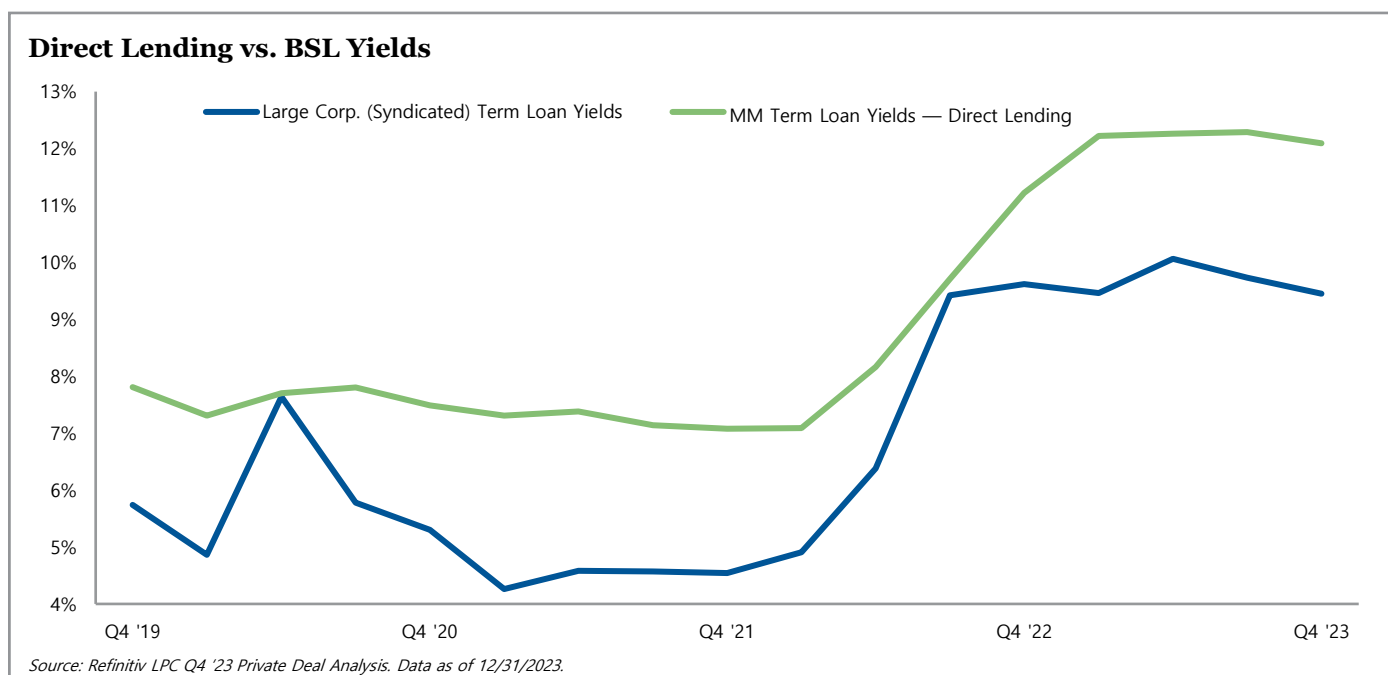
Direct lenders remained disciplined on leverage levels given the continued elevation of reference rates. Leverage for direct lending deals across the middle market declined quarter-over-quarter, while leverage for syndicated deals increased to the highest level recorded since the second quarter of 2022. Leverage was the lowest for companies with EBITDA between \$10-20 million and the highest for companies with EBITDA above \$40 million. Despite concerns that borrowers are facing challenges due to sustained higher interest costs, interest coverage ratios remained flat quarter-over-quarter, around 2.0x. Although at the low end of the historical “comfort zone” for lenders – which ranged from 2.0x to 3.0x – stable interest coverage ratios imply that companies are managing the elevated rate environment well, by passing through and/or cutting costs.

Fundraising activity in the U.S. direct lending market was nearly 35% lower year-over-year in 2023. However, according to Preqin data, the average fund size set a record for the second consecutive year, at nearly \$1.6 billion; this dynamic implies that interest in the asset class and in partnering with fewer managers persists. Furthermore, with direct lending dry powder remaining elevated at nearly \$210 billion, lenders are generally optimistic for an active 2024.

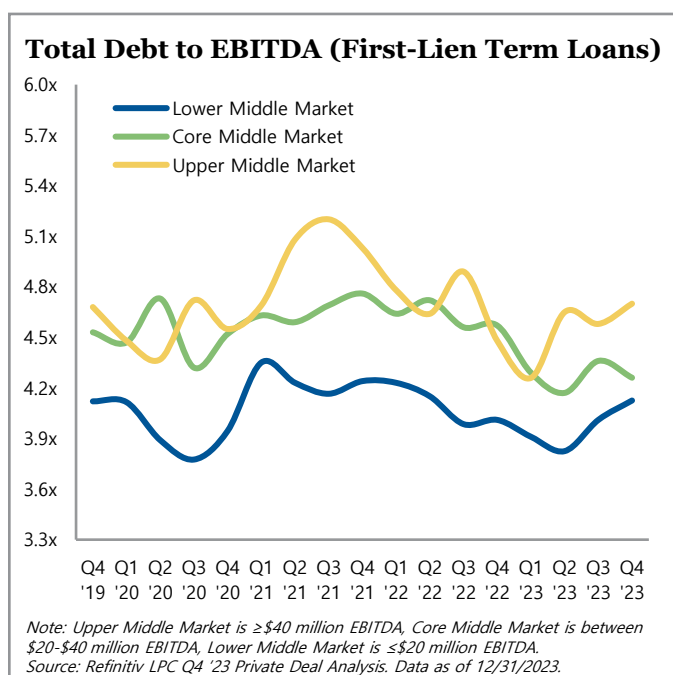


U.S. sponsored middle market loan volume totaled \$34 billion in Q4 2023, representing an increase quarter-over-quarter and year-over-year.

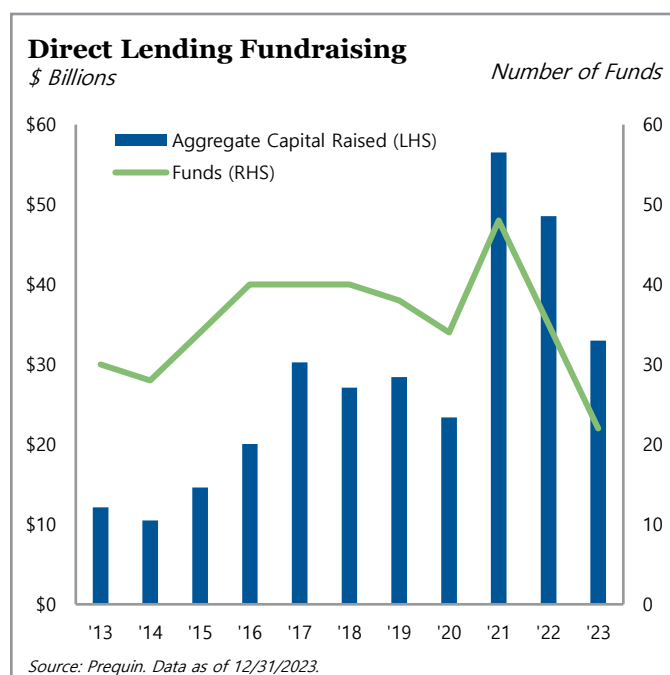
Middle Market Direct Lending (continued)



The direct lender yield premium over large corporate deals increased to over 260 basis points in Q4 2023.



Total leverage remained relatively flat across the middle market and was most conservative in the lower middle market.



Fundraising in the U.S. direct lending market exceeded \$30 billion in 2023, and average fund size hit a record for the second consecutive year.



Trevor Clark
Head of TPG AG Middle
Market Direct Lending

For more information on TPG AG Middle Market Direct Lending, click [here](#).

Merger Arbitrage

For full year 2023, U.S. M&A volume was down 9% while the number of deals announced increased 7% year-over-year. Deal volume in the second half of the year increased 57% compared to the first half, as interest rates declined, the prospect of a soft landing increased, and concerns about aggressive antitrust actions waned. At year-end, the U.S. deal universe had an average adjusted annualized spread of 11.4%, aggregate deal value declined to \$283 billion, and the total arbitrage profit pool stood at \$21.2 billion.

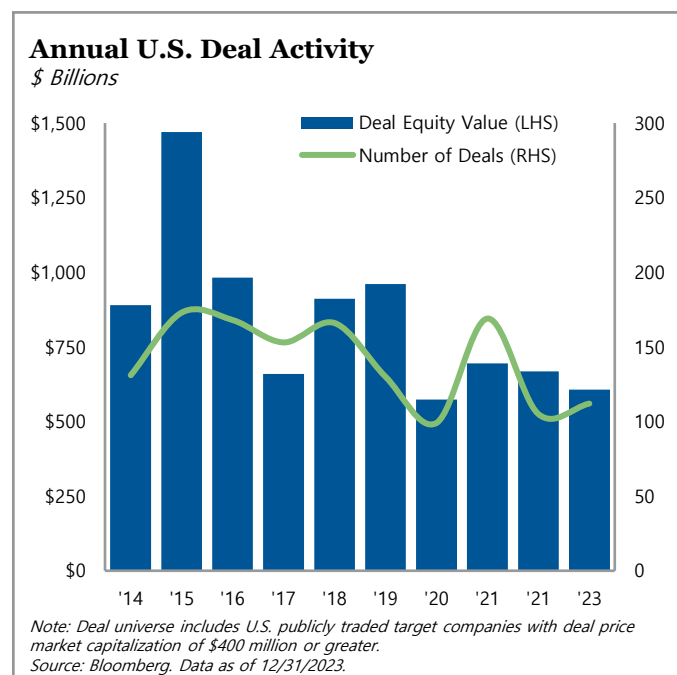
In the fourth quarter, deal volume increased 58% quarter-over-quarter as U.S. inflation data continued to cool and equity values rose, narrowing the price gap between buyers and sellers. With the Federal Reserve signaling it has completed this rate-hike cycle, declining yields led to more attractive acquisition financing. Four strategic deals, all of which were larger than \$12 billion in equity value, helped drive the quarterly volume. While the average adjusted annualized spread widened during the quarter, that was primarily caused by the technical factor of the four largest deals closing during the period.

Private equity sponsors remained active in the U.S.; however, due to a significant rise in LBO financing costs throughout most of the year, larger deals generally continued to be out of reach. This led to a 52% year-over-year decline in aggregate deal volume despite the number of deals announced being slightly above the historical average. LBOs accounted for 26% of the total deal count in 2023 but only 14% of deal volume, down from 26% of

volume in 2022. Private equity dry powder remains at all-time highs and the direct lending market continued to grow, increasing the potential for a wave of LBOs if the Fed embarks on its expected rate cutting cycle later this year.

Antitrust continued to be a major theme through the end of 2023. As discussed in prior CMP reports, regulatory uncertainty and U.S. antitrust agencies' actions drove considerable trading volatility for event-driven investors throughout last year. However, the April and May showers turned into fall flowers, as Microsoft's acquisition of Activision Blizzard, Intercontinental Exchange's purchase of Black Knight, Amgen's acquisition of Horizon Therapeutics plc, Pfizer's purchase of Seagen, and Broadcom's acquisition of VMware all closed between September and December, after overcoming regulatory hurdles.

For 2024, there is an expectation of increased M&A from both strategic and financial buyers, as financing costs are projected to ease and the regulatory outlook has improved. There is clear pent-up demand, as M&A volumes since 2019 have been below the long-term average while corporate and private equity cash balances have grown. Market participants are anticipating the DOJ and FTC will remain active through this year, though their focus seems to have shifted from novel theories of harm to traditional antitrust and monopoly cases.

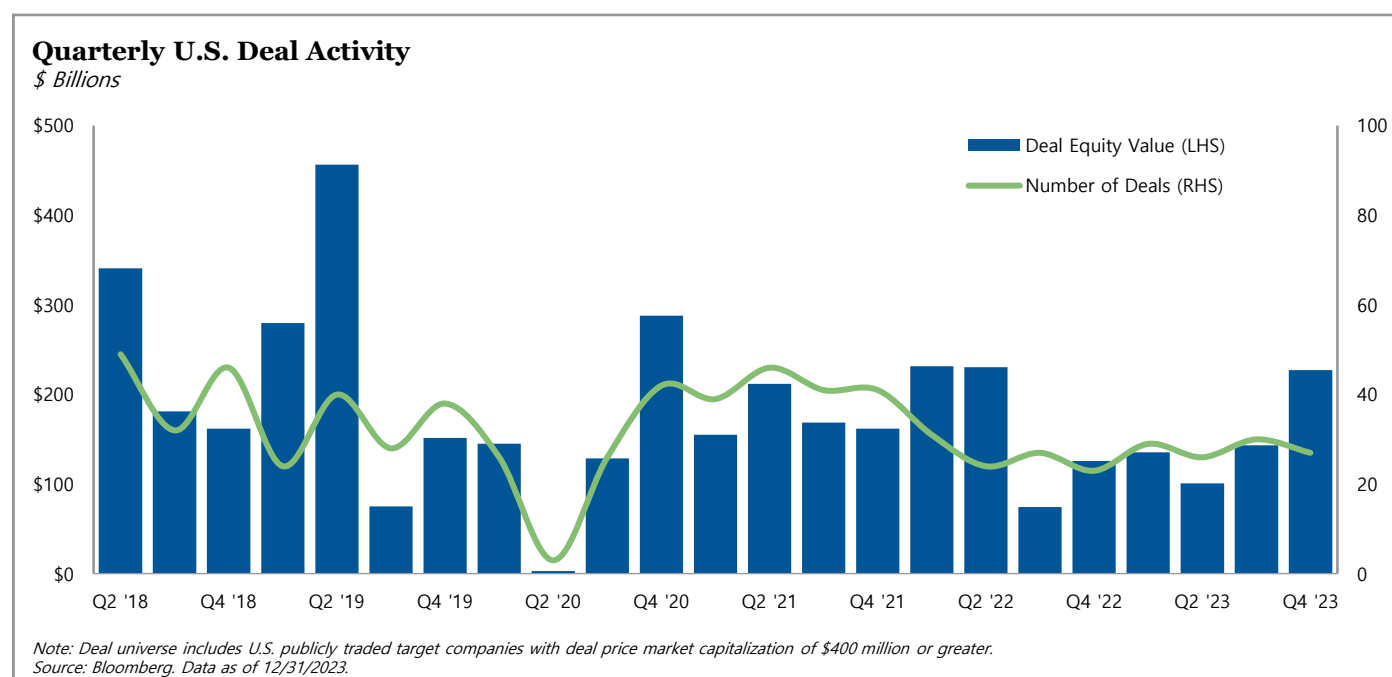


U.S. M&A volume declined for the second consecutive year, as higher interest rates, shaky economic data, and an uncertain antitrust environment weighed on companies' appetites for deals.

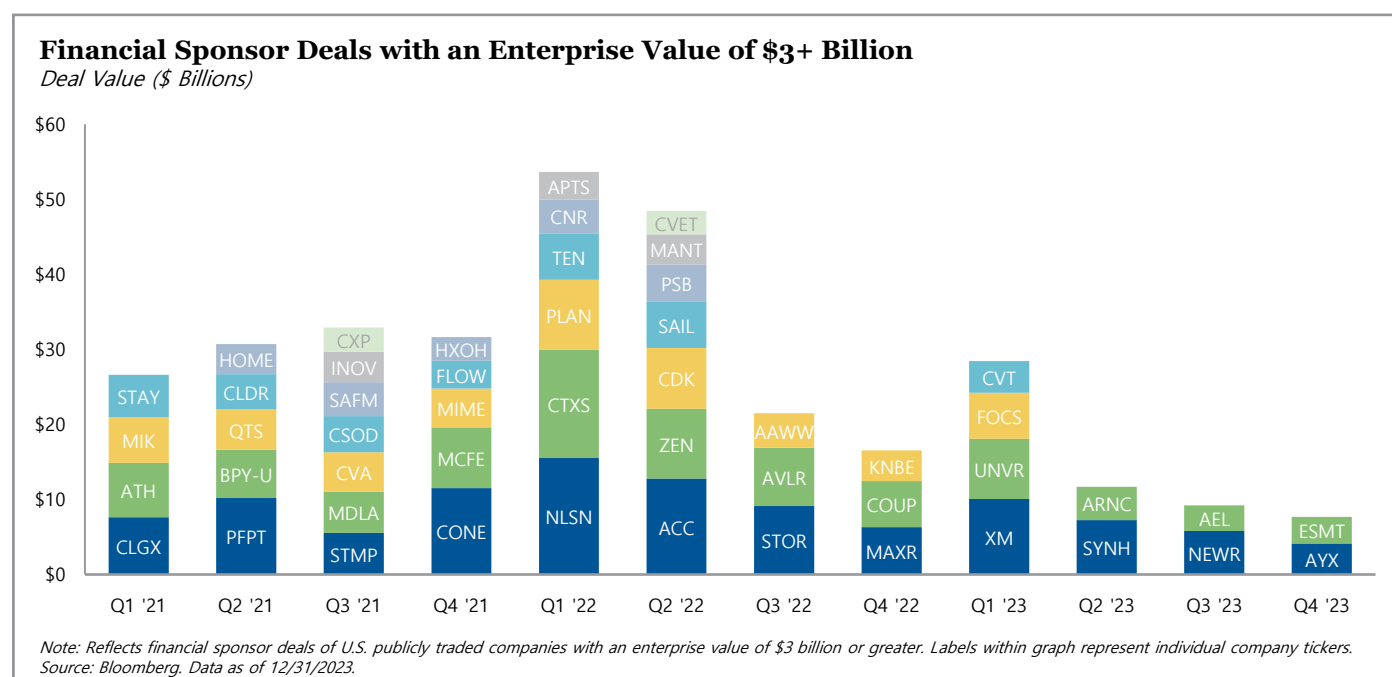


High LBO financing costs generally put larger deals out of reach for financial sponsors. This led to a 52% year-over-year decline in aggregate deal volume, though the number of deals announced was in line with the 10-year average.

Merger Arbitrage (continued)



There were four deals with a market capitalization of \$10+ billion announced during Q4 2023, leading to the strongest aggregate deal equity value in a quarter since Q2 2022.



Higher financing costs and reluctant bank lenders have continued to be a drag on large LBOs.



Mark Wojtusiak
Head of TPG AG
Merger Arbitrage

For more information on TPG AG Merger Arbitrage, click [here](#).

Convertible Arbitrage

The last two months of 2023 saw equity markets reverse course to a massive rally after entering October in a continuing downward drift from the prior quarter. They closed the year at a near-record high, with the S&P 500 up over 14% in that two-month period. This was driven largely by the Fed moving its focus to its full employment mandate after better-than-expected inflation data led them to reverse course on keeping interest rates higher for longer.

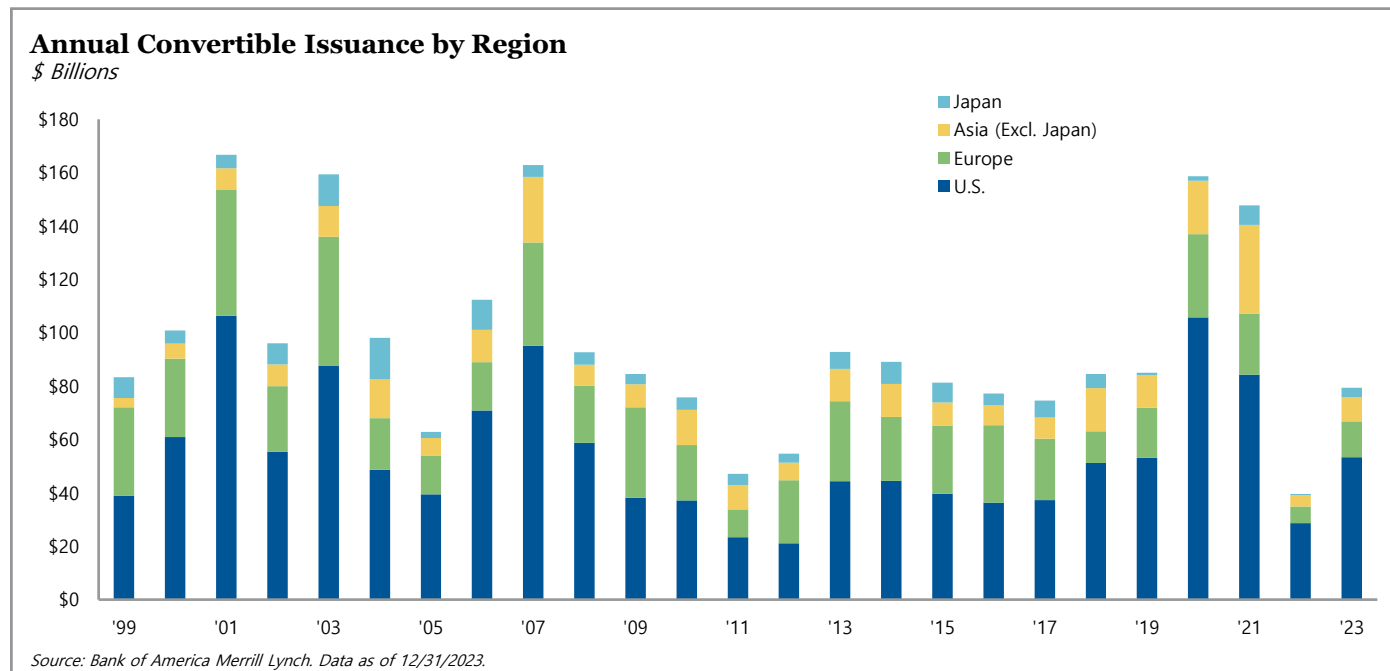
Convertible performance finished the year strongly. The U.S. convertible bond market returned 13.0% for the year, outpacing the global convertible market's return of 11.3%. Europe's 7.3% return and Japan's 7.1% return were a drag on the global return.

Global issuance for 2023 was \$79 billion, with \$53.4 billion coming from the U.S. The fourth quarter was relatively slow, with a busy November issuance calendar of \$9.9 billion sandwiched between the quieter months of October and December, with only \$3.9 billion and \$4.3 billion issued, respectively. The global convertible market size is currently \$360 billion.

We expect there to be significant convertible debt issuance over the next few years. BAML is forecasting \$90 billion of issuance in 2024, which should lead to healthy growth in the overall market based on the current maturity schedule.

Peak years of issuance in the convertible bond markets in 2020 and 2021 have left an abnormally large maturity wall to be addressed over the next few years. It is expected that around 15% of outstanding convertible bonds will reach maturity in 2025 and nearly 25% in 2026.

In addition, as a consequence of rate increases over the past 18 months, we expect to see the return of many issuers that have not been active in the convertible market for some time – particularly higher quality issuers that have become accustomed to lower interest costs. We could see further issuance beyond the traditionally large tech and healthcare segments in 2024, as seen with the 2023 influx of utility issuance.



Global new issuance is expected to increase meaningfully in 2024.



Gary Wolf
Head of TPG AG
Convertible Arbitrage

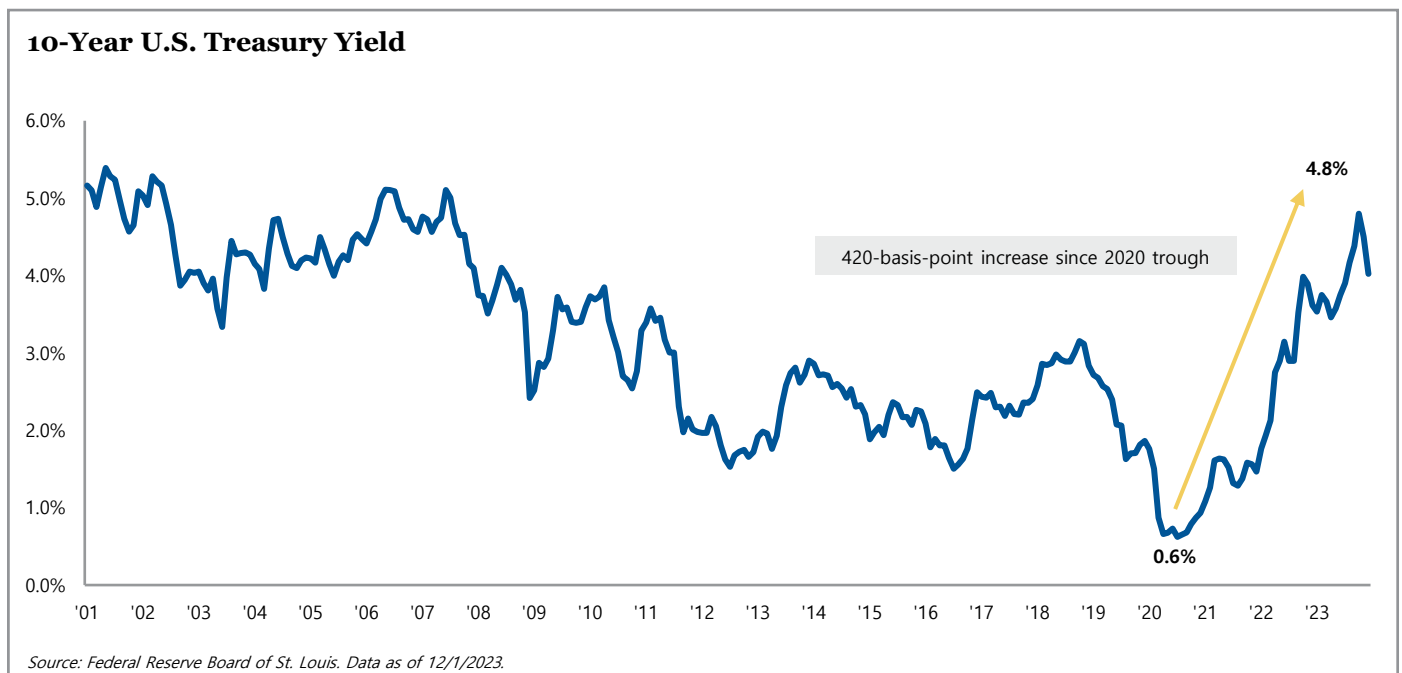
For more information on TPG AG Convertible Arbitrage, click [here](#).

U.S. Real Estate

The fourth quarter of 2023 ended positively, with a marked, significant shift in market sentiment. Contrary to expectations, a recession did not materialize in 2023, and there now appears to be a consensus view that the likelihood of a soft landing is increasing. Interest rates seem to have peaked, as the 10-year Treasury yield hit a high of 5.02% in October but was back to roughly where it started 2023 by December, near 4.0%. Significant progress has been made in combatting inflation, as annual year-over-year growth of the U.S. consumer price index (CPI) at the end of December 2023 had dropped to the same level seen in February 2019, and the labor market dialed back its pace of growth. The national unemployment rate experienced a noticeable decline to 3.7% by December – well below the long-term average – and real GDP growth increased at a 3.3% annualized rate in the fourth quarter of 2023.

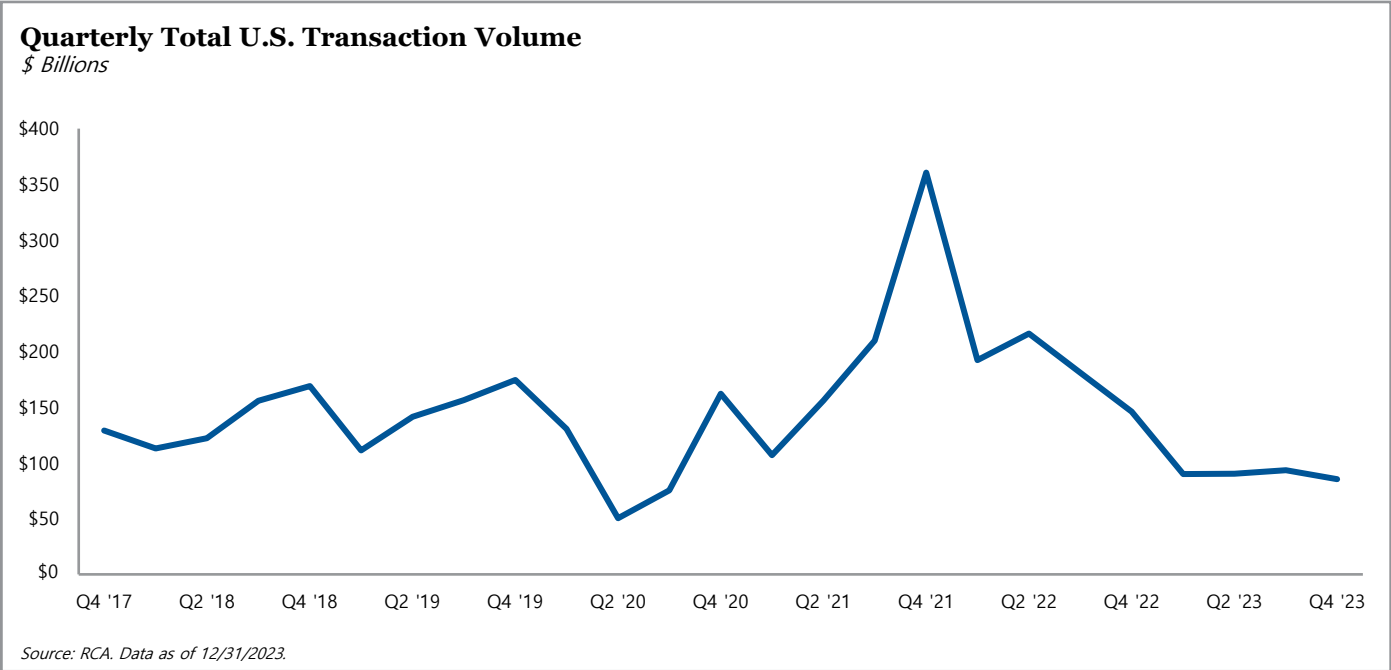
In 2023, real estate capital markets experienced a 51% year-over-year decline in transaction volume due to economic uncertainty, historic interest rate increases, and a sharp reduction in credit availability. This drop in transaction volume was met with a decline in real estate prices, which were down 5.9% on average year-over-year through December 2023. The office and apartment sectors saw the most pronounced year-over-year deterioration in pricing, with declines of 16.1% and 8.4%, respectively. In contrast, industrial was the only major property type to experience an increase in pricing in 2023 – recording a gain of 0.5%.

If interest rates continue to stabilize, we anticipate the market will react positively, reducing the bid-ask spread between buyers and sellers and leading to more transactions. Moreover, the impending surge of debt maturities – with many loans originated in a much lower rate environment – will likely lead to forced capital events and distressed asset sales. Although distressed sales only accounted for 1.7% of all sales in 2023, the upcoming \$900 billion of debt maturities over the next two years and \$2 trillion by 2027 should bode well for increased transaction volume.

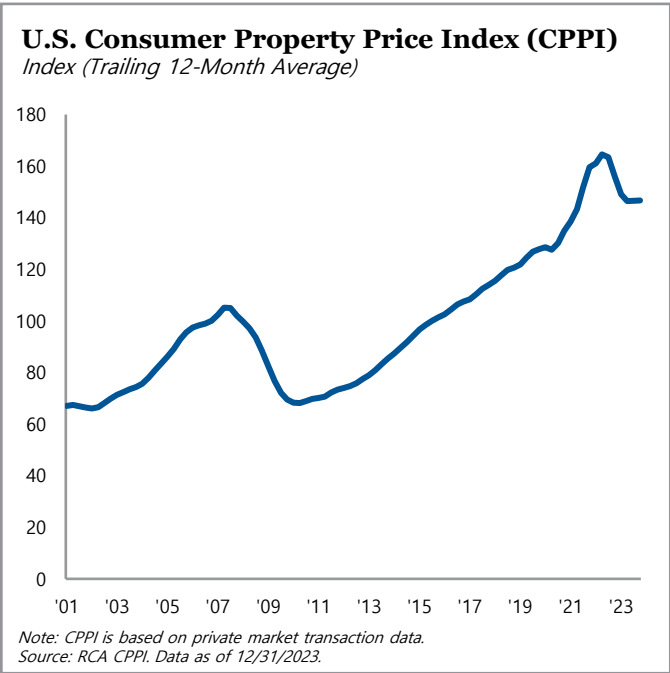


Following a rapid increase from 2020 lows, it appears the 10-year Treasury yield may have peaked after reaching 5% in October 2023. By year-end, the 10-year yield had retreated to below 4%, roughly where it started 2023.

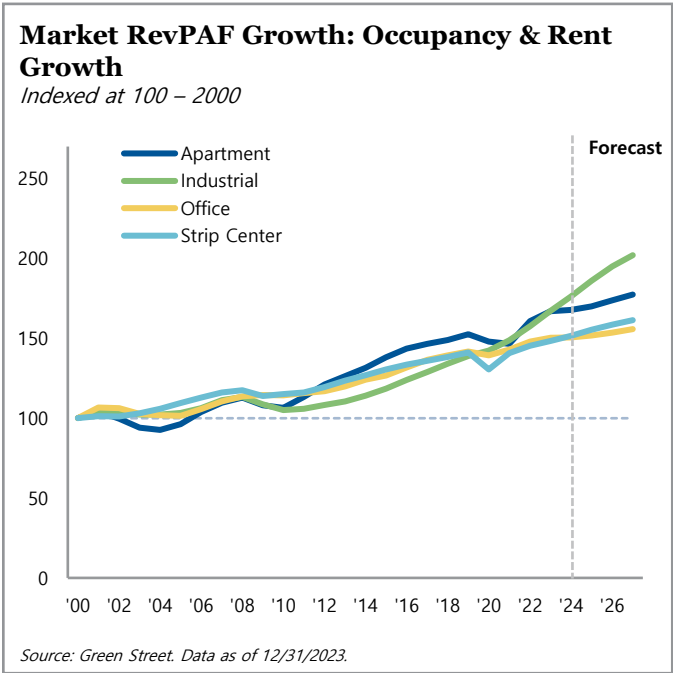
U.S. Real Estate (continued)



Economic uncertainty, interest rate hikes, and a dearth of available financing led full-year 2023 transaction volume to decline 51% year-over-year.

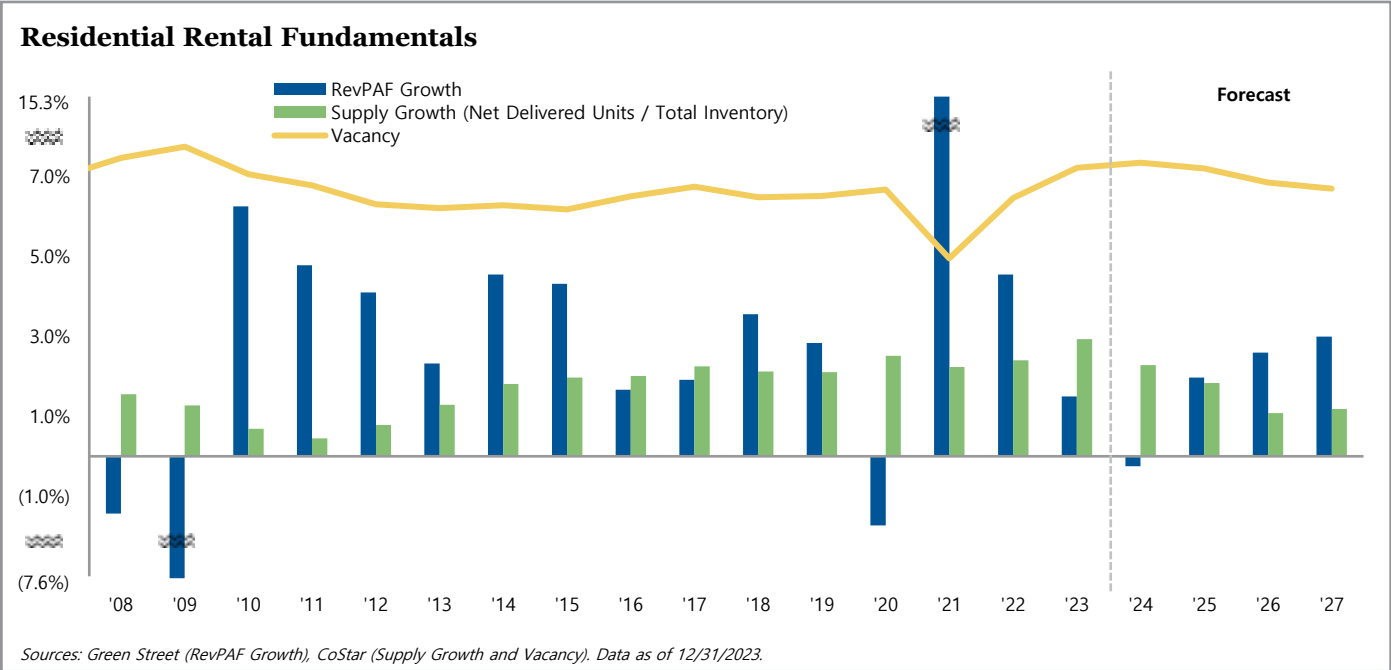


Estimates of U.S. commercial property prices were down year-over-year from 2022, but these declines decelerated by mid-year and prices remained stable in the fourth quarter.

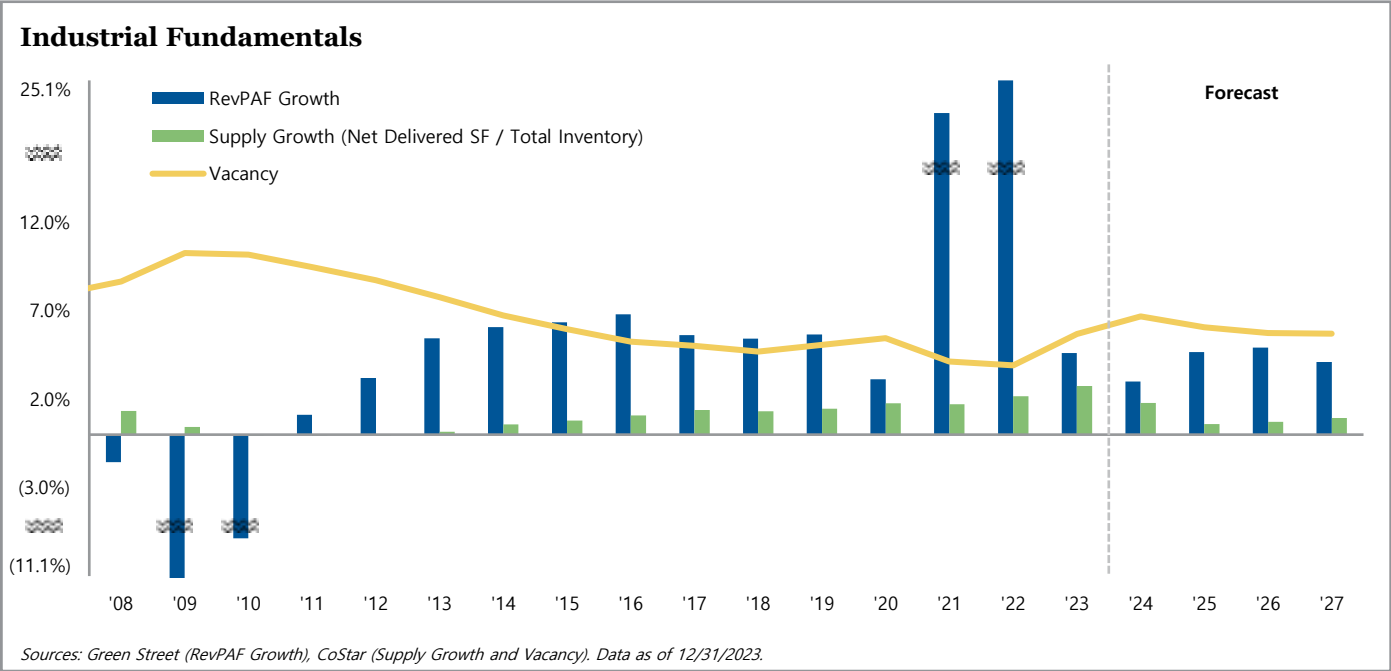


U.S. real estate fundamentals remained relatively stable across property sectors, with industrial experiencing the lowest vacancy and highest rent growth of the major sectors.

U.S. Real Estate (continued)

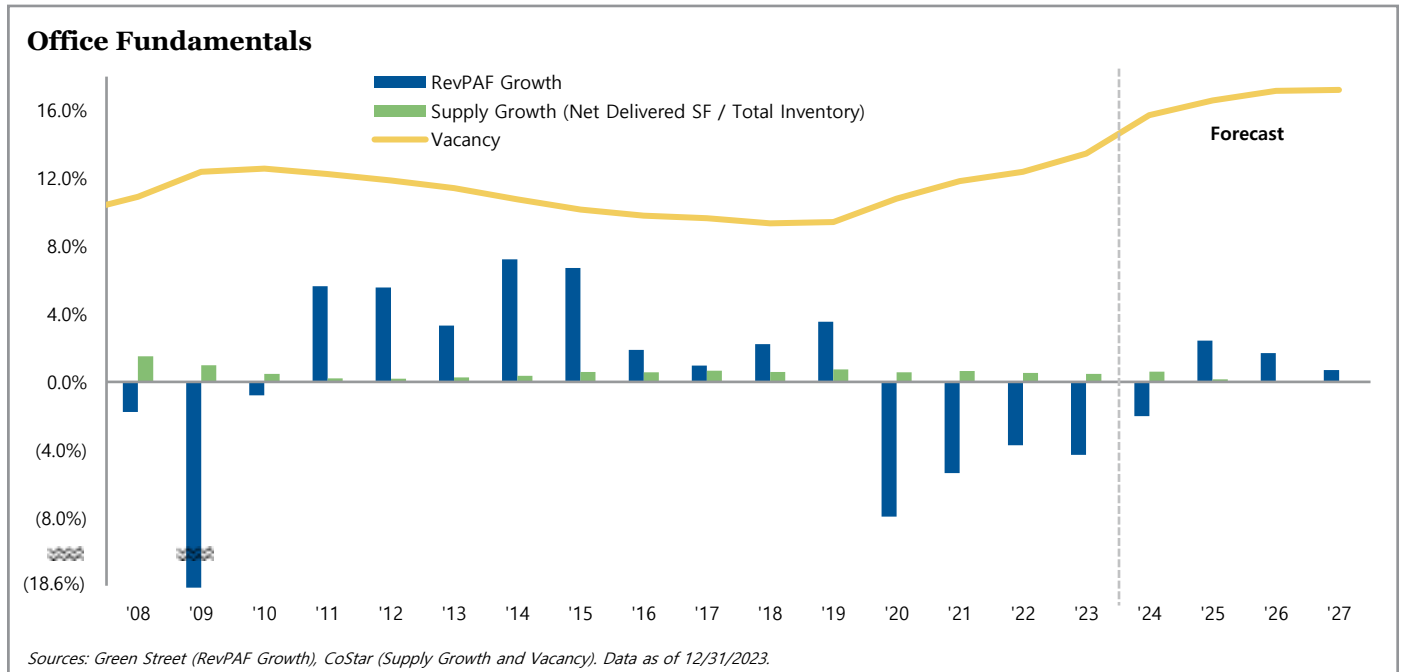


Rental residential has benefitted from necessity-based demand, increasing home ownership costs, and broad undersupply of housing since the GFC, but affordability, consumer headwinds, and elevated supply in certain markets may lead to softening.

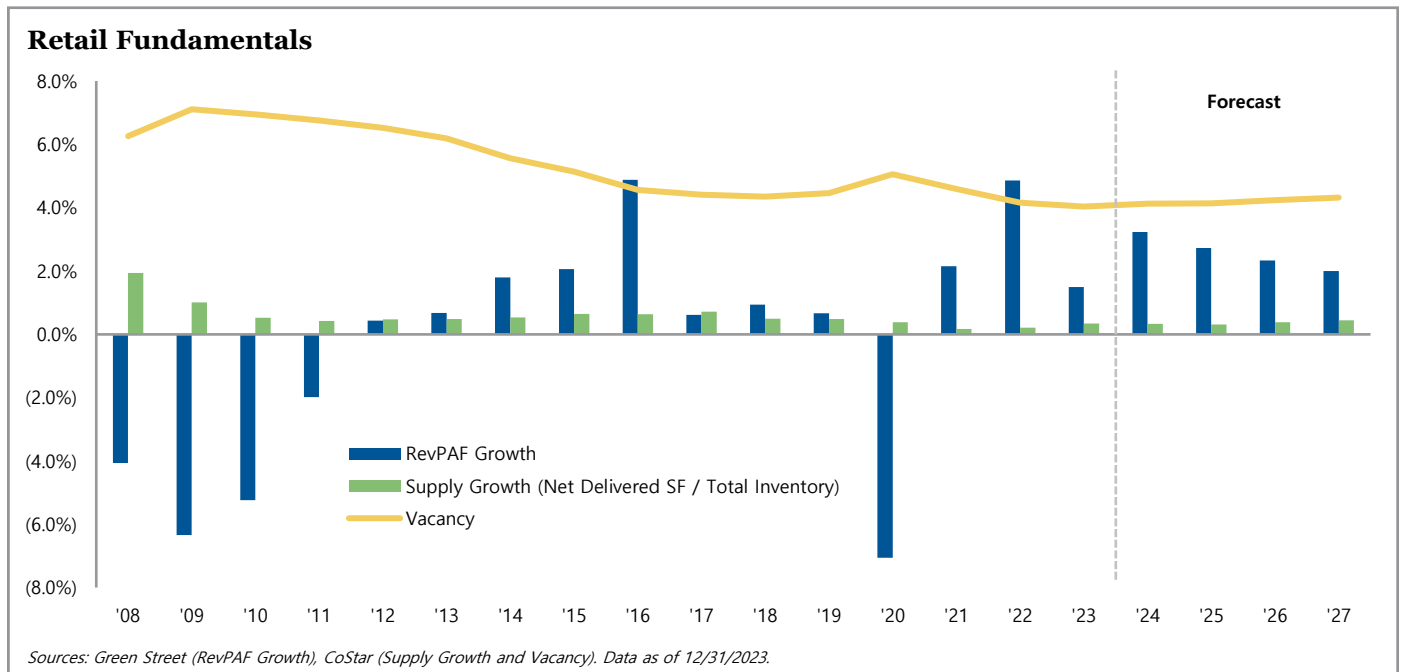


Industrial fundamentals have remained relatively strong despite an uptick in supply growth and moderating demand levels compared to 2021 and 2022.

U.S. Real Estate (continued)



Office continues to struggle post-pandemic due to broad oversupply, limited leasing activity, and a lack of capital markets demand.



The retail sector has benefited from strong consumer demand, stable vacancy, and limited new supply, with necessity-oriented centers experiencing the strongest performance.



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Europe Real Estate

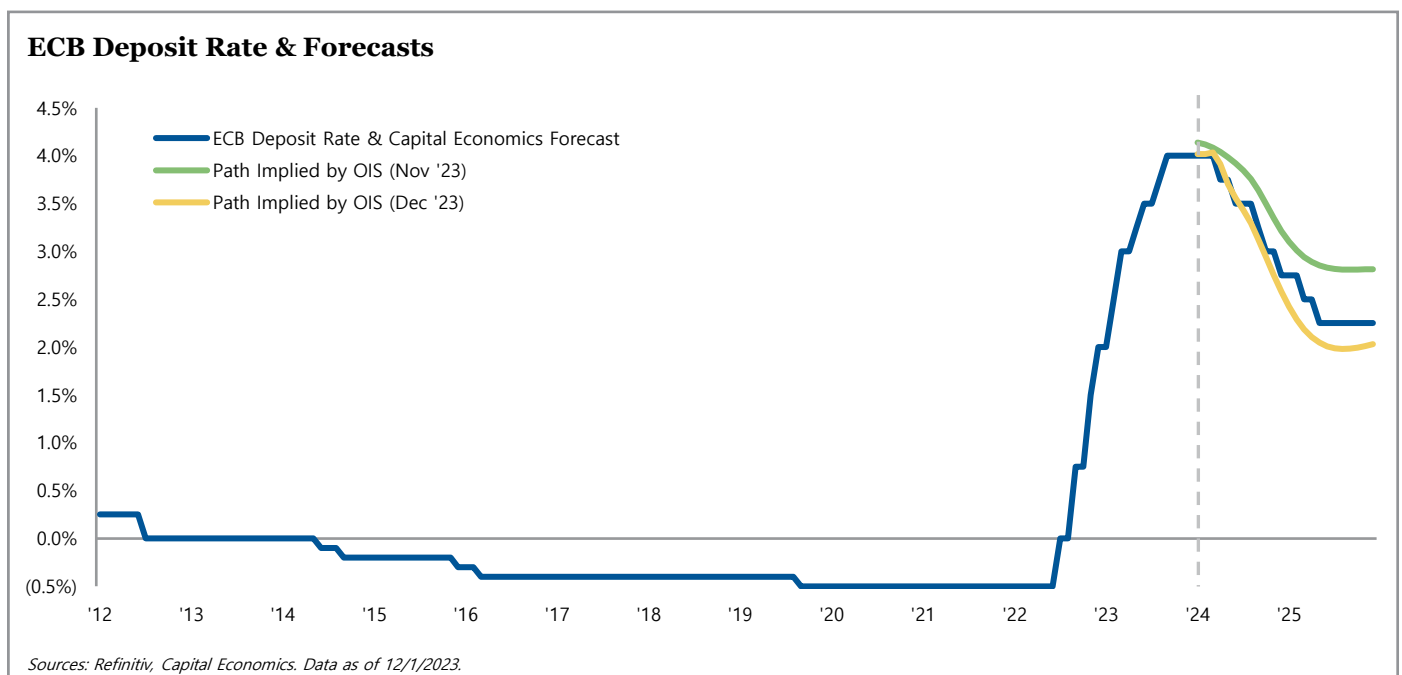
The effects of higher interest rates continue to impact European economies and expose distress in the real estate markets. Eurozone GDP stagnated in the fourth quarter and will probably remain flat for at least the first half of this year. Although headline inflation moved closer to the 2% target, the ECB held base rates at 4% in mid-December. With their updated expectations for inflation dropping to 2.7% this year, it is likely that the central bank will cut rates in 2024.

As interest rates have increased rapidly in an effort to bring down inflation, real estate owners have been faced with muted investment markets, difficult financing environments, and severe valuation corrections. Investment across the region dropped to €33 billion during the third quarter, and the four-quarter rolling total of €176 billion was down 55% year-over-year. Overall 2023 investment statistics are not yet available, but the full-year decline will likely be even more significant. Over the course of 2023, we saw major price drops across asset classes, and some additional decreases are expected in 2024, although less severe than last year.

Occupier markets were also slow at the end of the year. European office take-up totaled 1.5 million square meters in the third quarter, 25% below the five-year third quarter average. Office vacancy inched up to circa 7% in the third quarter, and vacancy is expected to continue rising over the next few years. Annual rent growth for prime eurozone office reached 3.5% at the end of 2023, but that growth will likely slow this year as occupiers slow expansion.

Reflecting on 2023, it seemed as though the new environment 'pulled back the curtain' and revealed that some prominent investors were propped up by artificially

low cap rates and strong occupational markets based on minimal supply rather than fundamental growth. While not surprising, these corrections have pushed many investors out of the market. As interest rates drop during 2024, there may be meaningful increased liquidity and activity in the real estate investment markets. However, with price drops still expected, owners will likely not be able to achieve recent peak prices. As a buyer, there will be significant opportunities to purchase high-quality assets for discounted prices.

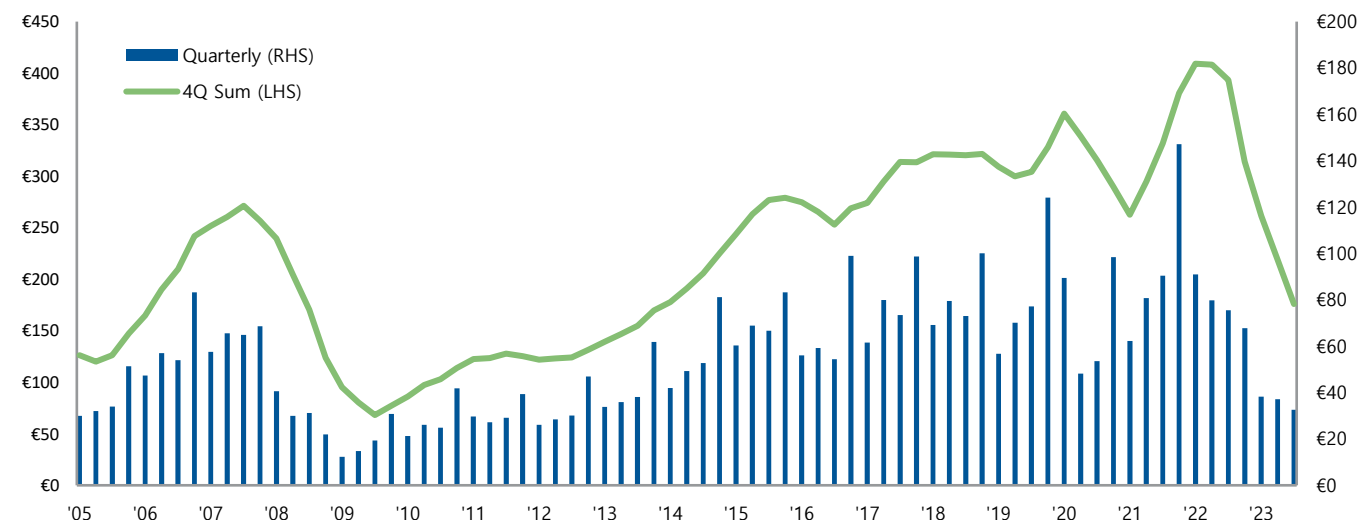


Interest rate moves have been dramatic and fast. While market forecasts indicate an expected near-term reduction in volatility, absolute rate movement since the Q1 2022 low has been extreme.

Europe Real Estate (continued)

Pan-European Investment

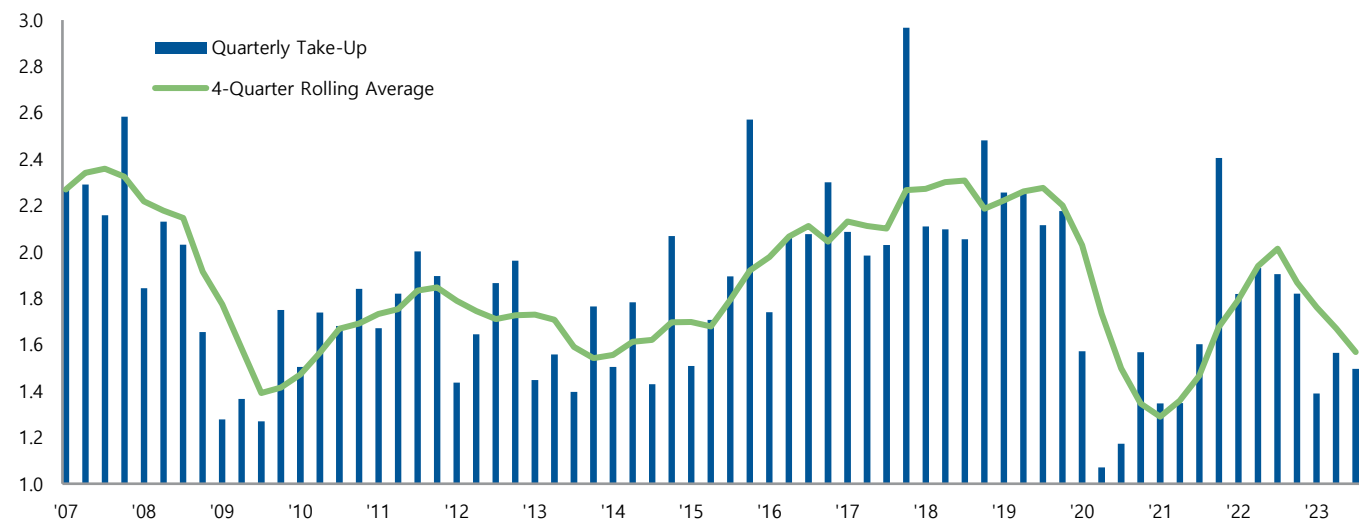
€ Billions



Real estate investment volume has fallen dramatically since the onset of the pandemic in 2020, and there are property owners who will be forced to sell because of debt maturities, equity redemptions, or funds coming to final term.

Eurozone Office Take-Up

Square Meters (Millions)



Office leasing has been trending downward since the onset of the pandemic and now stands close to post-GFC levels. Prime rents are increasing, but overall volumes are extremely low.



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Tom Rowley
Co-Portfolio Manager
TPG AG Europe Real Estate

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Asia Real Estate: China

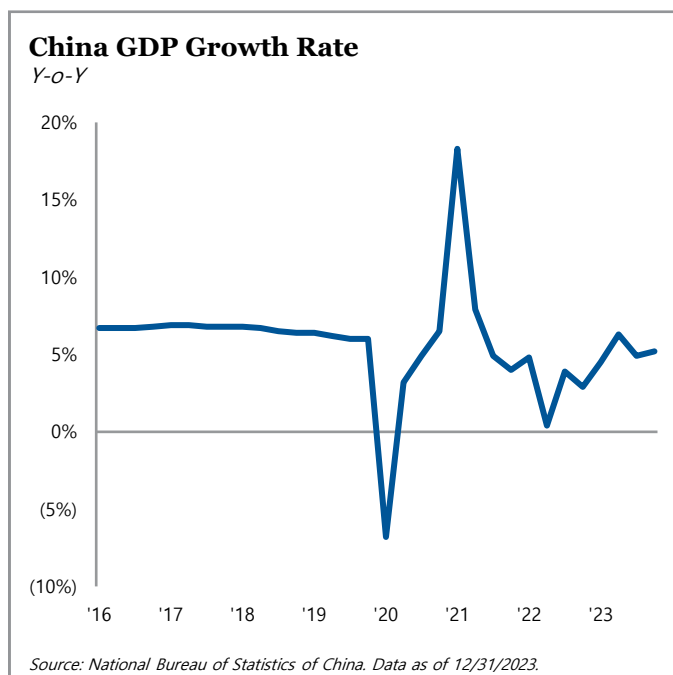
Despite geopolitical tensions and overseas interest rate hike impacts, China's economy continued to gain traction and grew 4.9% year-over-year in the third quarter of 2023, following expansion of 6.3% in the previous quarter. Since reopening from zero-COVID in December 2022, China has shifted its focus to economic growth and rolled out a series of accommodative macroeconomic policies throughout 2023. The People's Bank of China cut the reserve requirement ratio by 25 basis points in September, following a 25-basis-point cut in March. The one-year loan prime rate (LPR) was lowered by 10 basis points in August, following an earlier 10-basis-point cut for one- and five-year LPR in June. In the first three quarters of 2023, exports increased 0.6% year-over-year and value-added industrial output rose by 4.0%. Domestic retail sales increased 6.8% in the first three quarters, and online retail sales increased 8.9%. China remains highly focused on developing its advanced manufacturing sector, particularly in industries such as life sciences, integrated circuitry, and new energy. While total fixed-asset investment activity grew only 3.1% year-over-year in the first three quarters, fixed-asset investment in high-tech industries grew 11.4% year-over-year.

In Beijing, the recovery in office leasing demand that started in early 2023 did not continue, and leasing softened in the third quarter. New supply of 186,900 square meters was delivered to the office market. Net absorption amounted to roughly 71,200 square meters, and TMT companies accounted for nearly one-third of the leasing demand. Overall, Grade A office rents decreased by 1.3% in the third quarter, and the office market's overall

vacancy rate increased slightly from 10.3% to 11.1%. In the Zhongguancun submarket of Beijing, known as China's Silicon Valley, rents were down 1.8% quarter-over-quarter and vacancy increased to 17.1%.

The industrial and logistics market improved in the third quarter, with net absorption of 161,000 square meters. Five large new projects were delivered in the Shanghai logistics market in the third quarter, adding approximately 293,000 square meters. Continued large supply caused vacancy to climb to 14.9% in the third quarter, while industrial rents rose 1.8% year-over-year.

In terms of overall market activity, year-to-date transaction volume registered RMB 149.0 billion, a decline of 5% year-over-year due to the cautious market sentiment. Business parks, logistics, and rental apartments remained the most popular investment asset classes.



China's GDP improved modestly in the fourth quarter.



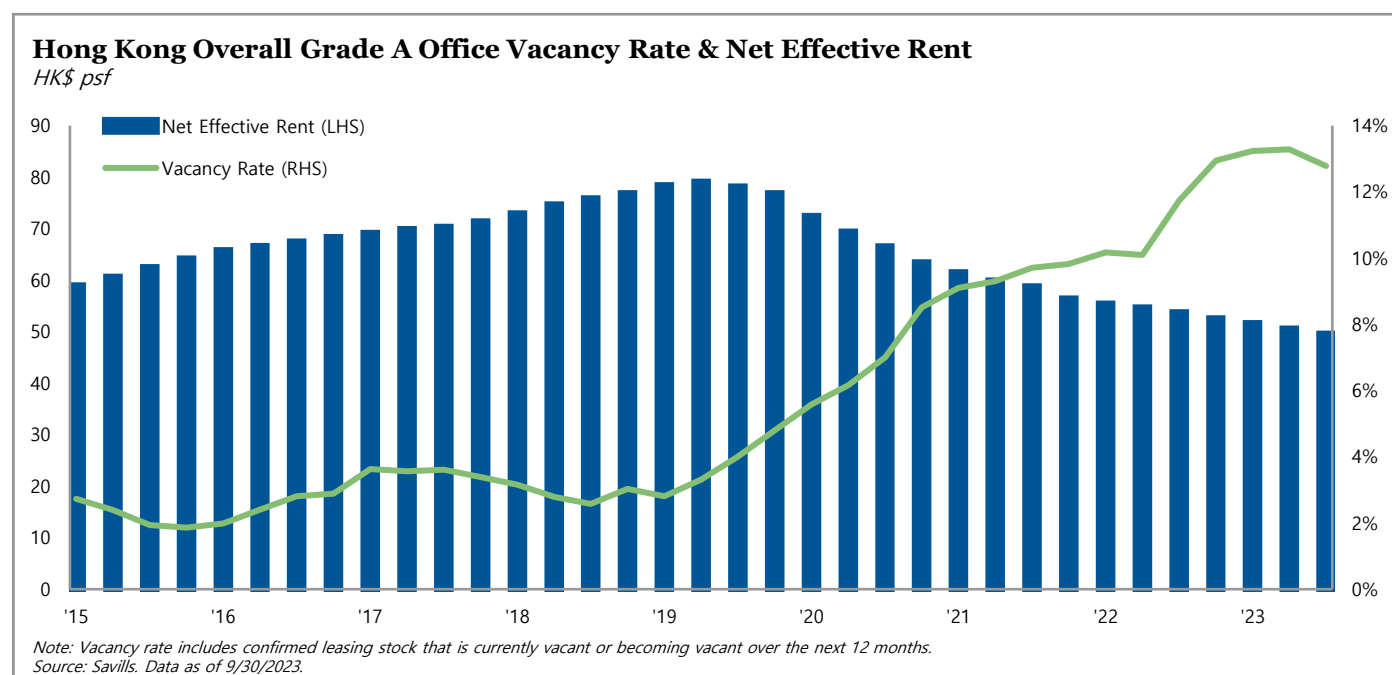
CNY values have remained weak against the USD.

Asia Real Estate: Hong Kong

After growing 1.5% year-over-year in the second quarter of 2023, Hong Kong's economy continued to improve in the third quarter – expanding 4.1% year-over-year – driven by the strong recovery of inbound tourism and private consumption. Total exports declined further in the third quarter, falling 8.6% year-over-year amid the challenging global market environment. Private consumption surged, increasing 6.3% year-over-year in the third quarter alongside continued economic recovery. Additionally, unemployment declined from 2.9% in the second quarter of 2023 to 2.8% in the third quarter.

In the third quarter of 2023, residential prices retreated 8.1% year-over-year and 5.4% quarter-over-quarter – remaining below the high recorded in September 2021. This overall decline is mainly attributable to smaller residential units, which recorded an 8.8% year-over-year decrease in

prices, as compared to the 4.6% price decline for larger units. On the other hand, mass residential rents grew by 6.6%, and townhouse rents grew by 8.6%. Commercial real estate investment transaction volume reached HK\$26.2 billion in the first three quarters of 2023, just 35% of the previous year's total. Investment demand in the third quarter was broad-based, supported by business entities for self-use, as well as local and non-local investors. The office sector continued to remain weak, both in terms of tenant demand and investor interest. As of September 2023, Hong Kong's office vacancy decreased slightly to 12.8%, while rents fell by 2.0% in the third quarter.



Hong Kong's office vacancy remained elevated given the slow recovery of office fundamentals.

Asia Real Estate: Japan

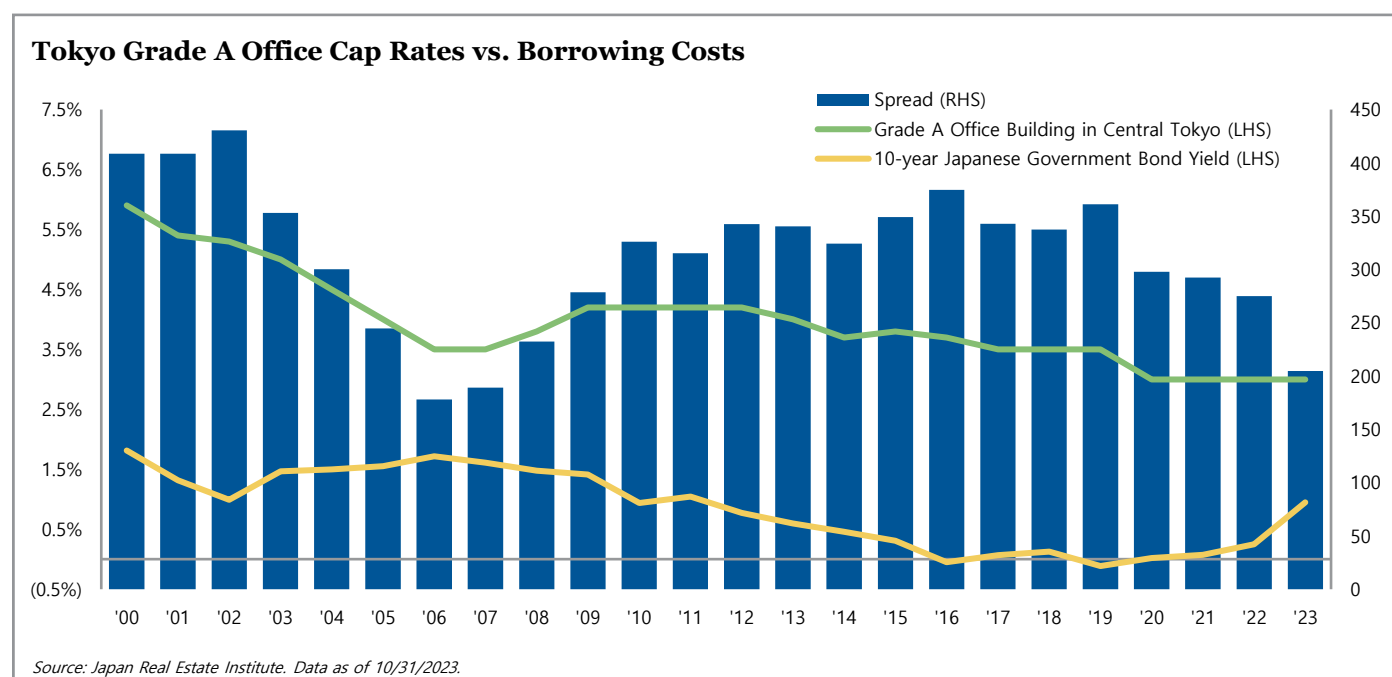
In the third quarter of 2023, Japan's real GDP shrank 2.9% quarter-over-quarter on an annualized basis, impacted by weaker private consumption and slower corporate investments. Japan's labor market remained healthy, with unemployment at 2.5% as of November 2023. Inflation was 2.5% – down from the 41-year high of 4.2% that was recorded in January – and real wages fell 3.0% year-over-year, continuing their 20-month streak of declines. Subsiding price pressures and sluggish real wage growth have provided some relief to the Bank of Japan, which has repeatedly defended its loose monetary policy by arguing that inflation accompanied by real wage growth is what is needed to change its policy stance. As a result, the Japanese interest rate market remained stable, with Japan's base rate (TIBOR) remaining below 10 basis points.

Office real estate fundamentals softened slightly due to new supply, but also continued to be supported by strong tenant demand. All-grade vacancy rates increased from 4.9% to 5.2% in Tokyo but decreased from 3.7% to 3.3% in Osaka quarter-over-quarter. During the quarter, Tokyo saw a 0.9% increase in the Grade A vacancy rate to 6.6%, as new supply delivered vacancies. We continued to observe a trend of Japanese companies seeking to upgrade their office space to attract and retain talented employees. We expect office demand will remain stable, with vacancies continuing to be filled by relocations from suburban areas, consolidations, and expansions.

Logistics vacancy in Tokyo rose from 8.2% to 8.9% quarter-over-quarter, with the delivery of 234,000 tsubo of new supply. Quarterly net absorption was 171,000 tsubo, above last year's quarterly average of 122,000 tsubo in

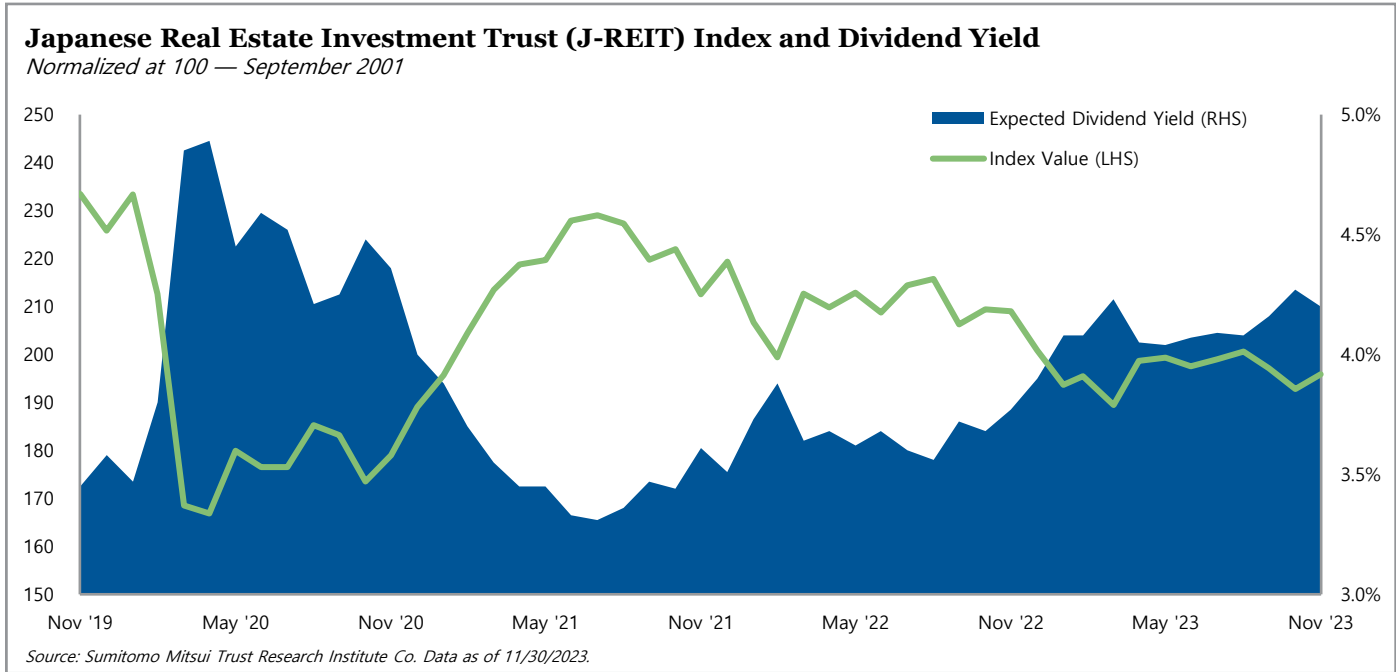
the greater Tokyo area. The vacancy rate for multi-tenant facilities remained unchanged at 8.2%, and for facilities that were built more than one year ago, vacancy remained flat at 2.1%. The strong demand witnessed during the third quarter originated from a wide range of industries, including e-commerce operators, retailers and wholesalers, manufacturers of consumer goods, and service providers. However, we've also seen tenants become increasingly selective with the continued influx of new supply, resulting in greater polarization between property types and submarkets.

Transaction volume in the third quarter of 2023 was down 9% year-over-year – but still slightly above the average volume registered for the same period over the past four years. Japanese REITs (J-REITs) were increasingly active during the third quarter, with investment volumes up 60%. On the other hand, foreign buyers remained bearish, with volumes decreasing by 80%.

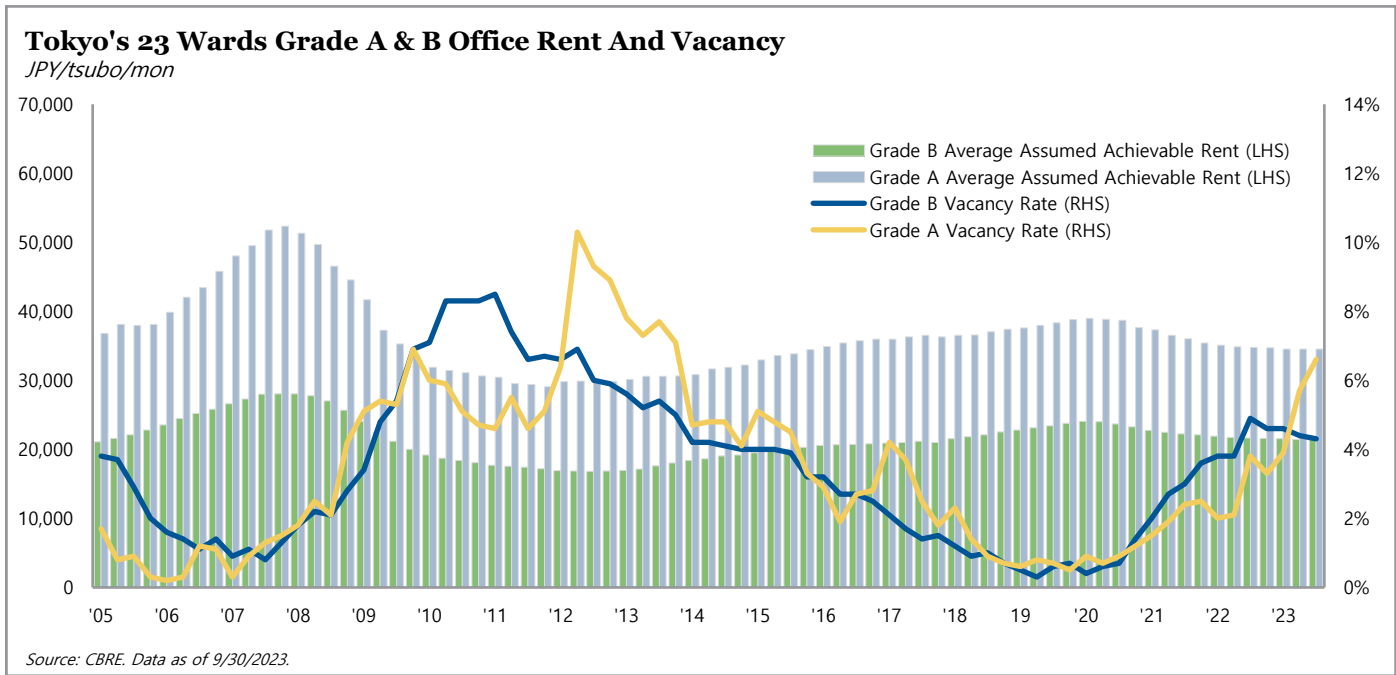


Despite Japan maintaining its low-rate policy, we have seen an uptick in long-term interest rates.

Asia Real Estate: Japan (continued)



J-REIT performance has improved, which has led to an increase in new property acquisitions.



Tokyo Grade A office vacancy edged up due to new supply, while overall market fundamentals remained stable.

Asia Real Estate: South Korea

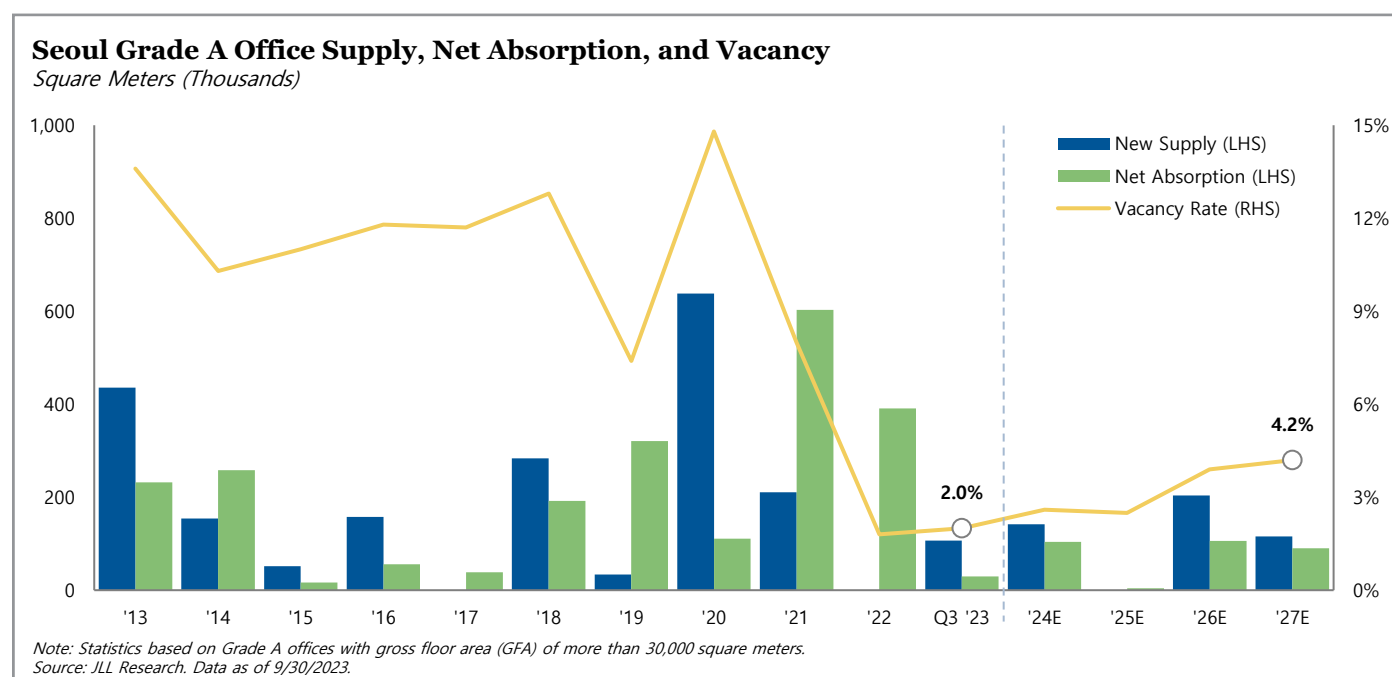
The Bank of Korea (BoK) held its base rate at 3.50% in the third quarter, leaving it unchanged since January 2023. Consequently, the rate gap between South Korea and the U.S. stands at an all-time high of 200 basis points, as the U.S. Federal Reserve kept its benchmark interest rate steady following a 25-basis-point increase in July 2023. In the third quarter, South Korea's GDP continued its economic growth of 0.6% quarter-over-quarter, showing further signs of recovery. The continued growth momentum was mainly driven by positive net exports with a rebound in the global semiconductor industry coupled with an expansion of infrastructure investment by several large trading partners. Overall, the BoK maintained its 2023 economic growth and inflation expectations, at 1.4% and 3.5%, respectively – both unchanged from the previous May forecast.

On the real estate front, office cap rates stood at 4.4% in the third quarter of 2023 – in line with the previous quarter. Spreads between prime office cap rates and Korean government bond yields (i.e., 10-year treasury bonds) tightened once again and stood at approximately 40 basis points. This spread tightening can be attributed to higher treasury yields, which stood at 4.0% at the end of the third quarter – up 30 basis points quarter-over-quarter.

Despite spread compression in the capital markets, office fundamentals remained robust. Prime office vacancy in Seoul remained at 2.0% at the end of the third quarter. With sufficient demand and limited ongoing supply, vacancy rates are projected to remain below 5.0% for the next four years. Additionally, overall office rents increased 10.9% year-over-year, with the Gangnam Business District

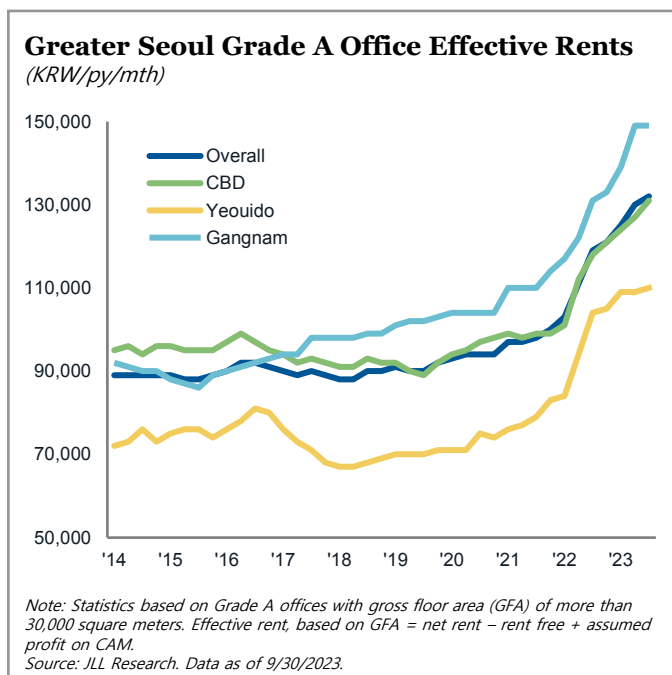
exhibiting a 13.7% rent growth year-over-year. Investment activity totalled ₩2.7 trillion in the third quarter – down 32.5% year-over-year. On a year-to-date basis, transaction volume totalled ₩7.7 trillion – down 40.8% year-over-year, mainly due to investor concerns over rising financing costs.

Logistics vacancy in Greater Seoul decreased to 13.1% in the third quarter – down by 2.9 percentage points quarter-over-quarter. Despite a supply spike in the prior quarter, demand for logistics space in Greater Seoul remained strong, with net absorption at an all-time high of 366,000 pyung (13 million square feet). According to JLL, the vacancy rates in key logistic submarkets are expected to further improve over the next two years, with reduced future supply and resilient demand. Meanwhile, logistics transaction volume amounted to ₩1.3 trillion in the third quarter – down 40.7% year-over-year. On a year-to-date basis, transaction volume reached ₩5.3 trillion – down 9.4% year-over-year.

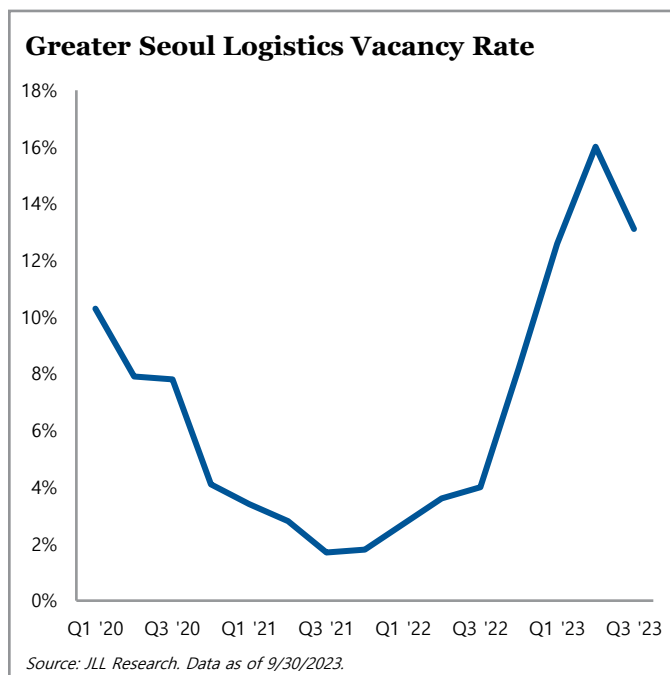


Prime office vacancy in Seoul ended the third quarter near a historical low, underpinned by robust demand, limited supply, and minimal impact from remote working.

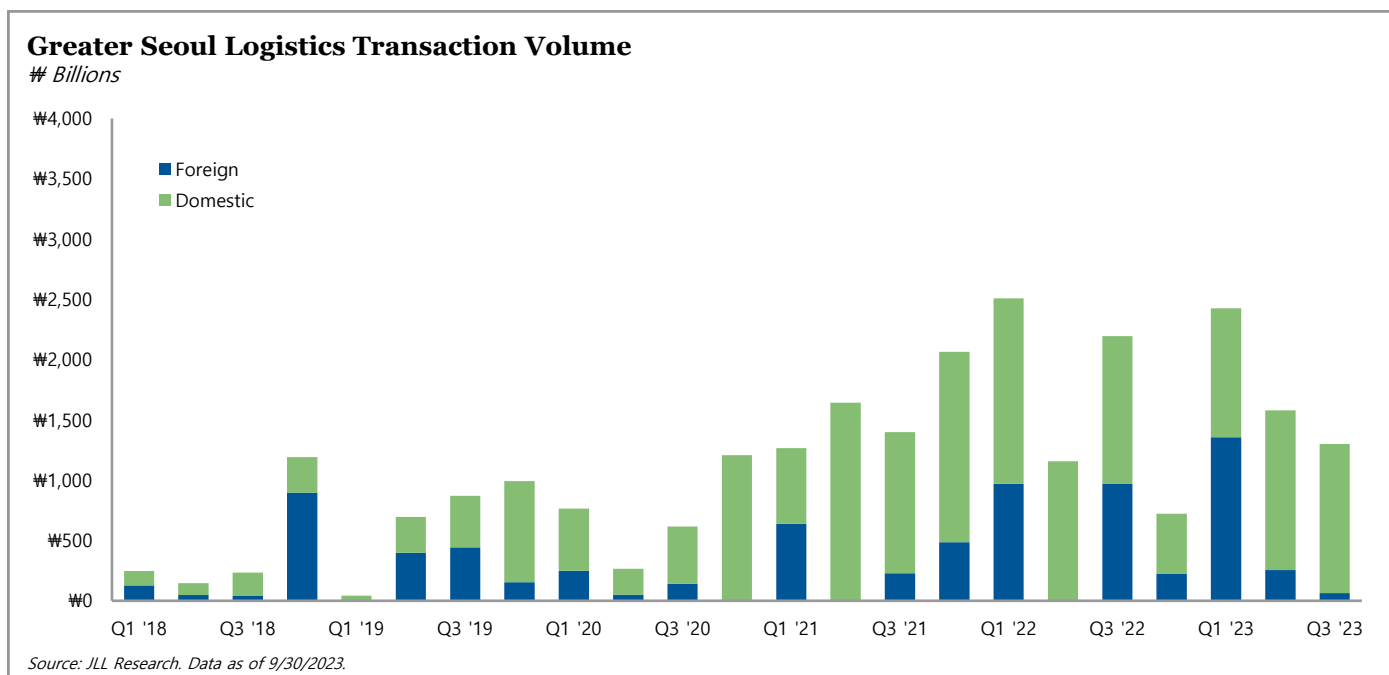
Asia Real Estate: South Korea (continued)



Office rents in Greater Seoul hit an all-time high across all four major submarkets given strong underlying fundamentals.



Logistics vacancy soared due to large-scale supply delivered in the first half of 2023; however, demand remains robust and future supply is expected to moderate.



Logistics transaction volume was down significantly due to the current high-rate environment.



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Head of TPG AG
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Steven Cha
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TPG AG Asia Real Estate

For more information on TPG AG Asia Real Estate, click [here](#).

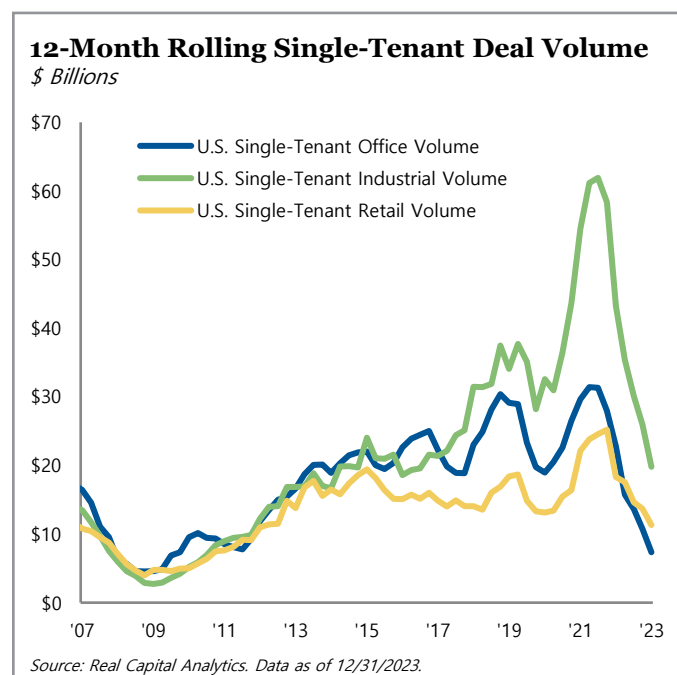
Net Lease Real Estate

The trailing 12-month U.S. single-tenant transaction volume totaled \$38 billion as of the fourth quarter of 2023, according to Real Capital Analytics (RCA). Volumes have continued to fall in each quarter since the peak recorded in the second quarter of 2022, reaching an aggregate decline of 67%. Since the peak, office asset volume declined by 77%, industrial asset volume declined by 68%, and retail asset volume declined by 54%.

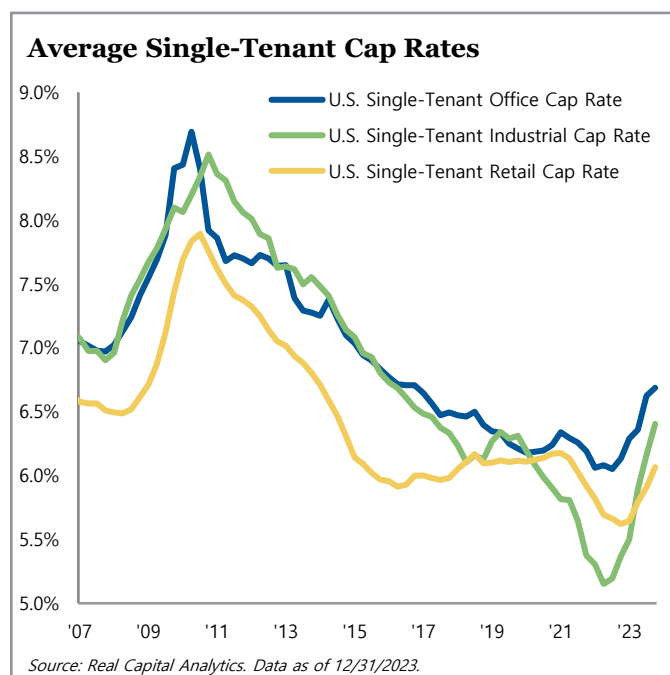
At the same time, single-tenant cap rates have consistently recorded quarterly increases, from a low of 5.6% in the second quarter of 2022 to 6.4% as of the

fourth quarter of 2023. The increase in cap rates has been partially driven by higher base rates and higher borrowing spreads, both of which have shown signs of tightening in recent months, which may bode well for cap rates. The office sector, however, remains challenged, and cap rates in office are at the highest levels since 2017 and trending upward.

Looking ahead, there are several long-term trends that we expect will drive an increase in sale-leasebacks, including manufacturing onshoring and capex spending on automation and the energy transition.



At the end of 2023, single-tenant deal volume was down 67% from the peak recorded in the second quarter of 2022.



Cap rates continued to trend up.



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Net Lease Real Estate

For more information on TPG AG Net Lease Real Estate, click [here](#).



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