QUARTERLY INSIGHTS | INVESTMENT RESEARCH

UNITED STATES

Key Themes

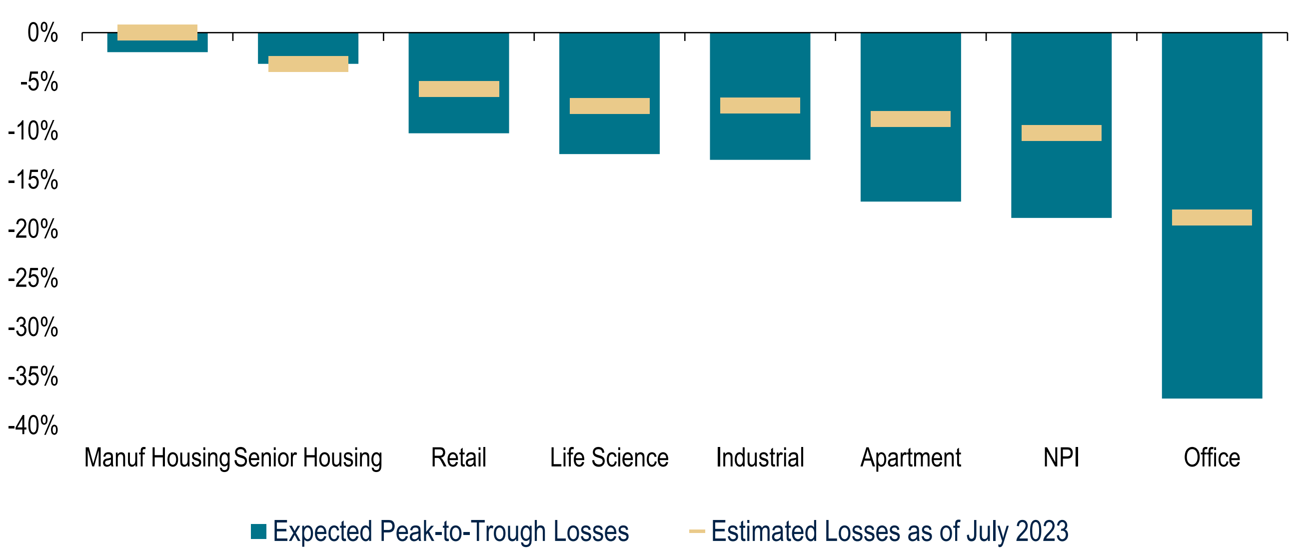
- Are We Past the Bulk of U.S. Value Declines?
- Looking Beyond Supply Risk: What Role Will Interest Rates Play in Relative Apartment Market Income Growth?
- What Insights Does the Senior Loan Officer Opinion Survey Unveil for the Commercial Real Estate Debt Market?

Are We Past the Bulk of U.S. Value Declines?

The prolonged decline in U.S. property values has further to run, but due to a combination of investor discipline and more than a little luck, the bottom is in sight. As shown in **Exhibit 1**, values in the NCREIF Property Index, which measures unlevered core properties, have fallen by 10% since their mid-2022 peak.

Exhibit 1: Getting Closer to the Bottom

Peak to Trough Value Losses by Sector



Sources: CoStar, RealPage, Green Street Advisors, NIC Map, NCREIF, Oxford Economics, PGIM Real Estate. As of August 2023.

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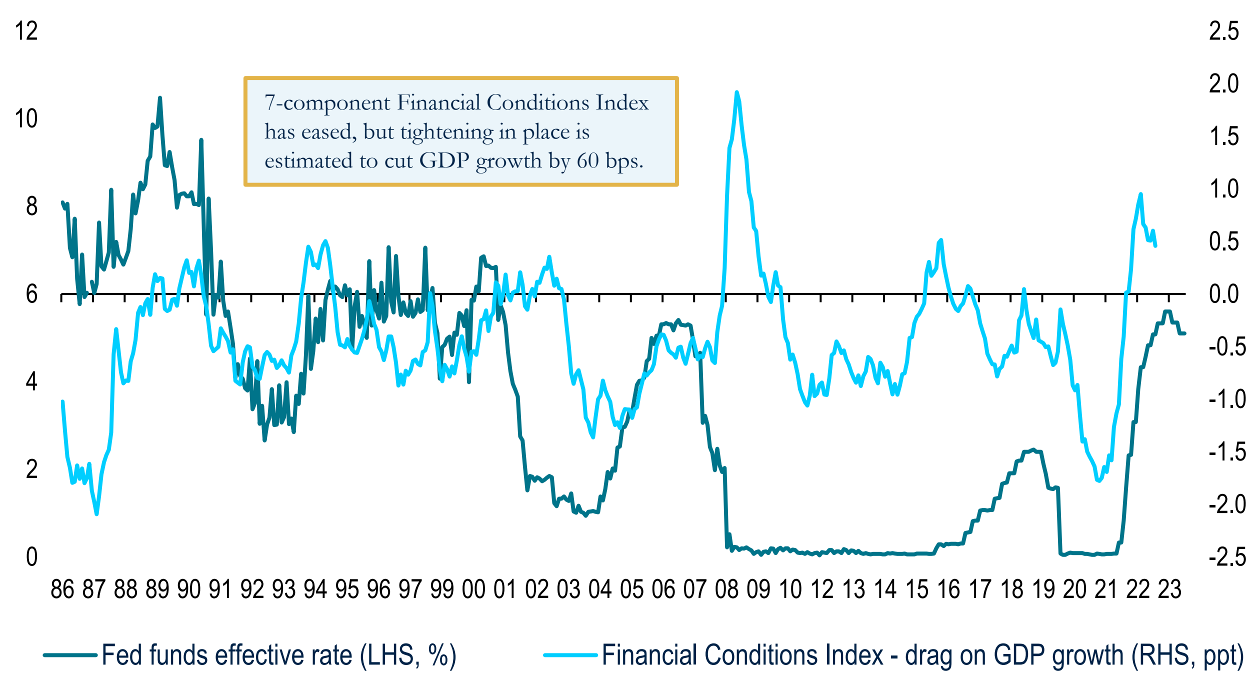
That average masks substantial variation by property type, with office the notable outlier with an additional 18% of decline to go. All other major property types are in much better shape. We forecast industrial and apartment will decline by an additional 6% and 8%, respectively, as cap rates adjust to the current era of higher interest rates. By contrast, we estimate that some property types, including manufactured housing and senior housing, have already been fully repriced.

The most important assumption behind our value decline forecast is the Federal Reserve (Fed) signaling the end of rate hikes. A piece of corroborating evidence is the Fed staff's new financial services conditions index[1], shown in **Exhibit 2**, which captures the combined effects of monetary policy, bank lending standards and other factors.

Right now, the Fed's new index indicates their prior rate hikes continue to work through the financial system. It states financial conditions are now more restrictive than at any time since 2009, the peak of the Great Financial Crisis, with a drag on gross domestic product of roughly 50 basis points. The timing of the release of the new index coincides with their recent messaging that the rate increases since last year are working to slow inflation, and the lagged effects of prior interest rate hikes have mostly worked their way through property valuations.

Exhibit 2: Less Pressure from Interest Rates

Fed Funds Rate vs Financial Conditions Index



Sources: Federal Reserve Board, Oxford Economics, BLS, PGIM Real Estate. As of August 2023.

[1] See https://www.federalreserve.gov/econres/notes/feds-notes/a-new-index-to-measure-us-financial-conditions-20230630.html for methodology.

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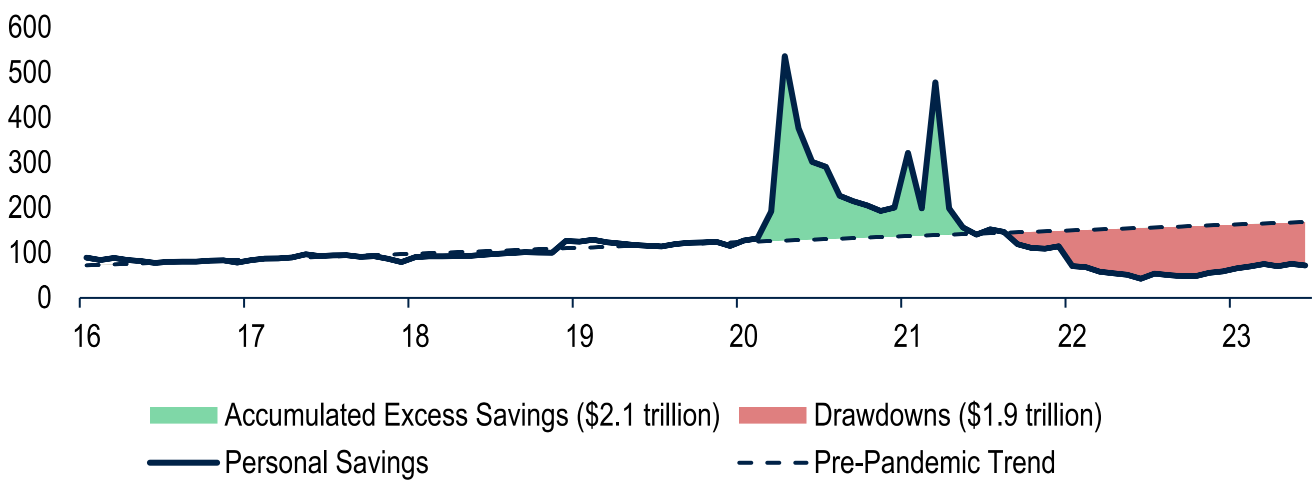
That leaves us with another component of property values – income growth expectations. This is where we may be on shakier ground. Consensus has largely coalesced around a "soft landing" for the economy and, by extension, income growth in commercial real estate. That's a plausible but by no means high confidence scenario. Notably, as shown in **Exhibit 3, on the top chart**, consumers have been spending down the savings they built up in the 2020-2021 period. It's unclear how willing they will be to spend once those checking account balances shrink.

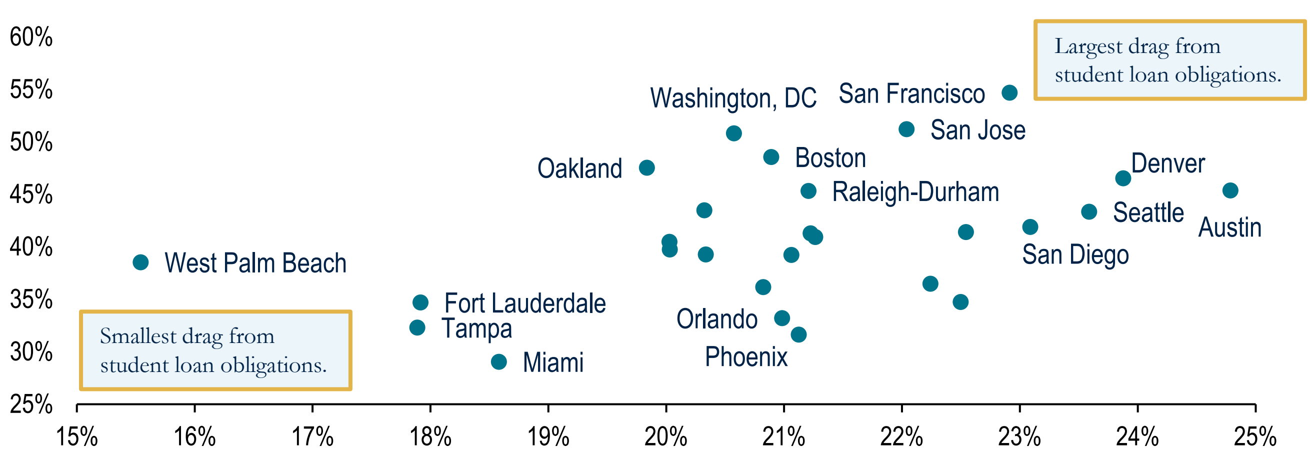
Coincident with the savings drawdowns, the moratorium on student debt repayments is coming to an end in October. This will leave many households that have spent down savings accumulated a couple of years ago with additional debt burdens. In particular, we are paying close attention to the metro areas in the upper right corner of the **bottom graph in Exhibit 3**, which have high concentrations of college graduates and 25-34 year olds, both of which have the highest propensity to carry student debt.

Exhibit 3: Though a Soft Landing is Not Guaranteed

Aggregate Personal Savings vs the Pre-Pandemic Trend (Billions)



Education Attainment vs 25-34 Age Group as % of Adult Population (% of Population With Bachelor's Degrees or Higher)



Sources: U.S. Bureau of Economic Analysis, PGIM Real Estate. As of August 2023.

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Despite these risks to the tenant demand outlook, labor markets remain supportive of a soft landing scenario. As shown in the right chart in **Exhibit 4**, 25-64 year olds are rapidly replacing older workers who may have left the labor force permanently. The former age group supports both residential and commercial leasing, whereas retirees may fuel leisure spending that supports hospitality and some retail formats. A recent increase in legal immigration, shown in the left chart, is also responsible for labor force growth, providing additional capacity for expansion at a time when unemployment is very low.

While risks remain tilted to the downside, the mostly likely path forward for property values is for only moderate declines over the next few quarters. That is an upgrade from our forecasts in May[2], as we now expect interest rates to have peaked and property incomes to gradually grow in an economic soft landing.

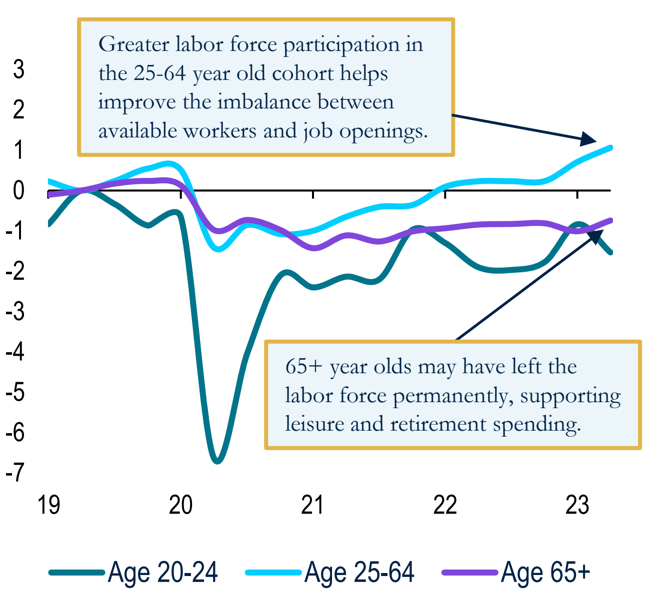
Looking Beyond Supply Risk: What Role Will Interest Rates Play in Relative Apartment Market Income Growth?

After a multi-year period of strong performance, apartment rent growth is decelerating fast and occupancies are on the decline. Surging supply is one reason. But we also have evidence the recent rise in interest rates is responsible for at least some of the market-level differences.

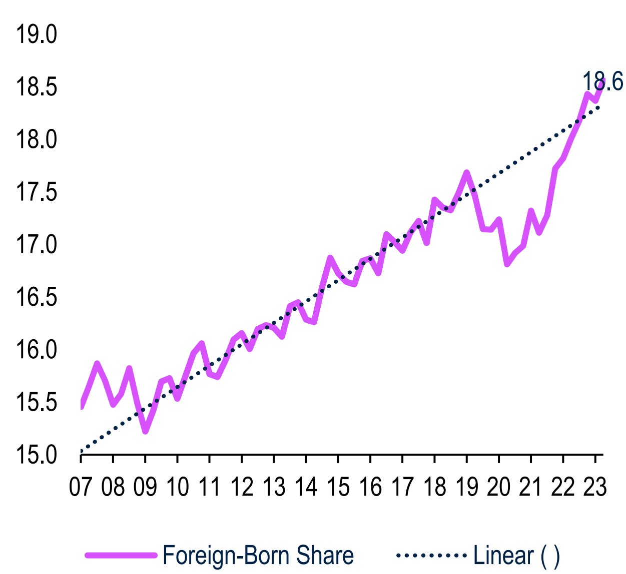
According to RealPage, apartment asking rents were up 2.4% over the past 12 months as of 2Q23, a sharp deceleration from 13.6% as of 2Q22. U.S. apartment occupancy in 2Q23 fell to 94.7%, the lowest second quarter occupancy since 2013.

Exhibit 4: Labor Force Growth Will Boost Tenant Demand

Change in Labor Force Participation by Age



Foreign Born Share of Civilian Labor Force



Sources: Moody's Analytics, Federal Reserve Bank of St. Louis, BLS Current Population Survey, PGIM Real Estate. as of August 2023.

[2] See https://www.pgim.com/real-estate/global-outlook.

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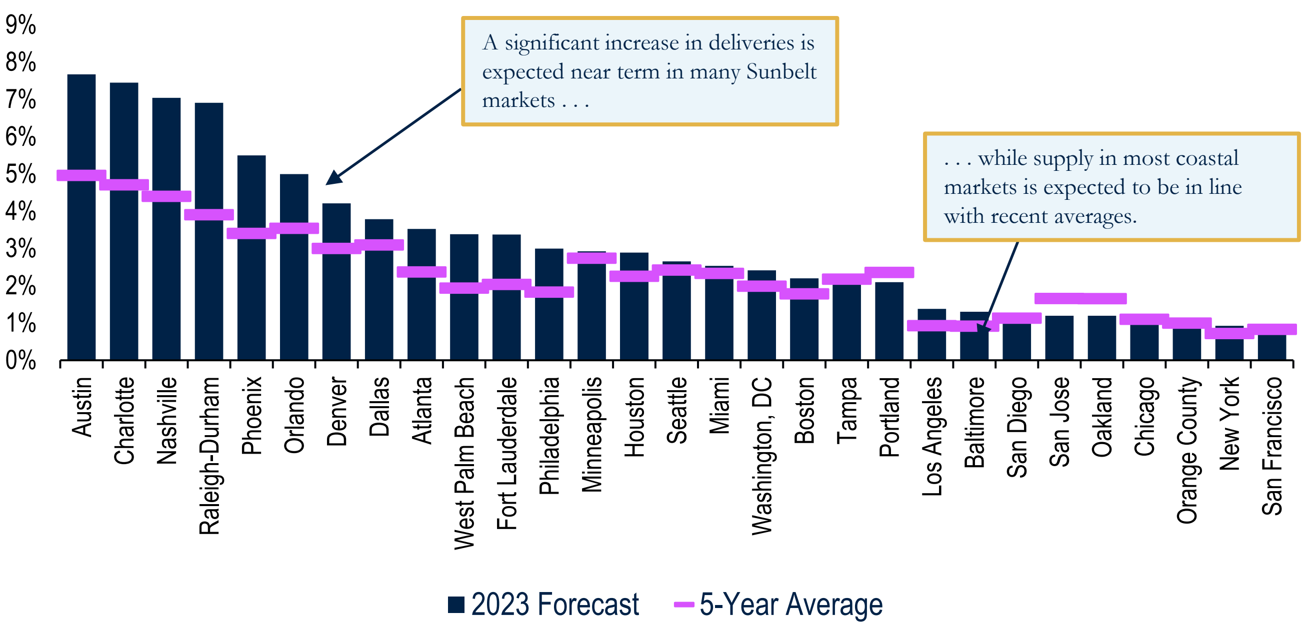
Development activity is a significant near-term headwind[3]. As shown in **Exhibit 5**, this is particularly true in many Sunbelt markets, such as Austin, Charlotte, Nashville, Raleigh-Durham and Phoenix, where near-term supply forecasts are far above recent trends.

But this only considers supply-side dynamics. On the demand side, a key risk moving forward is the potential impact to metro economies, and thus the incomes of apartment renters, from higher interest rates. Here we look to the body of academic literature on regional economics, where evidence indicates that the vulnerability of metro area economies to interest rate changes increases based on four key factors:

1. Level of household indebtedness (through higher debt service costs)
2. Proportion of GDP generated by the manufacturing sector (due to being capital intensive and from import/export exposure through the exchange rate)
3. Proportion of GDP generated by the construction sector (due to being heavily capital intensive)
4. Proportion of GDP generated by small and mid-sized businesses (due to reliance on short-term financing)

Exhibit 5: Beware Near-Term Overbuilding

Inventory Growth Forecast 2023 vs 5-Year Average (2018-2022)



Sources: Moody's Analytics, Federal Reserve Bank of St. Louis, BLS Current Population Survey, PGIM Real Estate. as of August 2023.

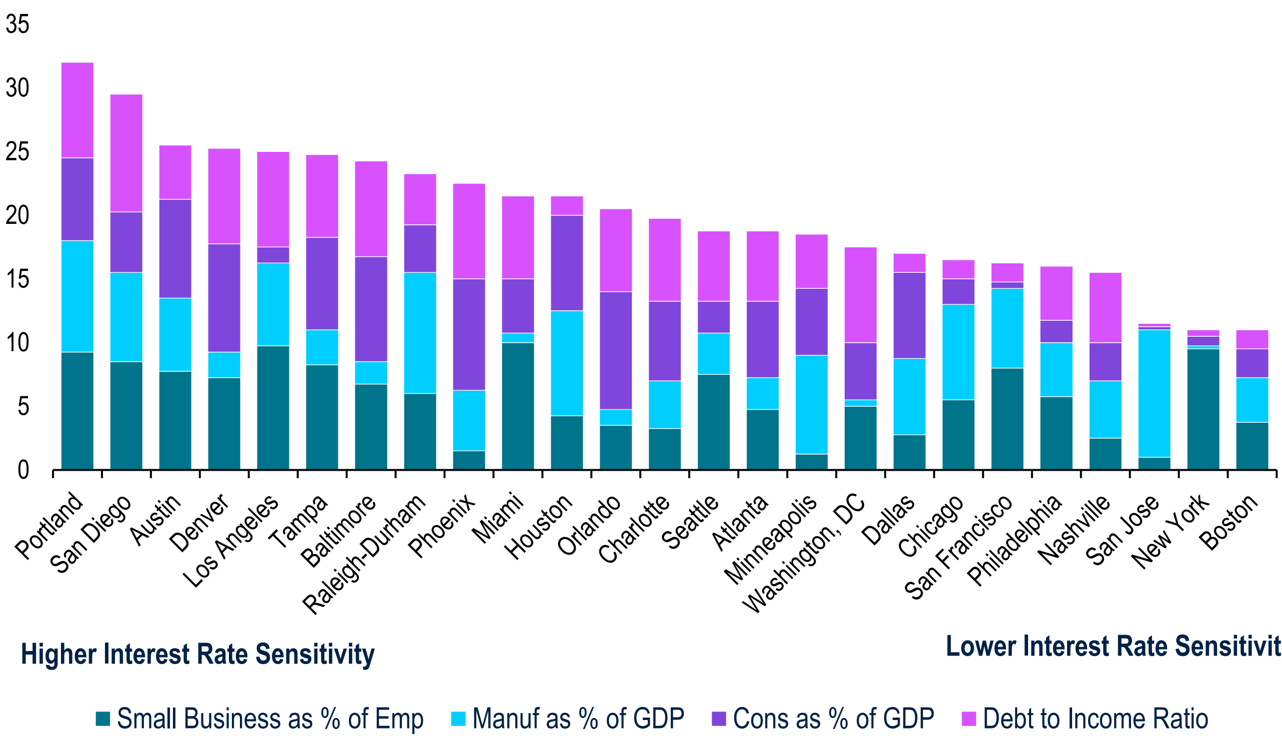
[3] See https://www.pgim.com/real-estate/commentary/united-states-part-1-shifting-apartment-winds-whats-outlook-relative-market-performance.

Using these factors, we create an index ranking major U.S. metros by their sensitivity to interest rates, as depicted in **Exhibit 6**[4]. Those that demonstrate lower interest rate sensitivity should prove more resilient on a relative basis in the face of higher interest rates. Given the Fed's current tightening cycle began in early 2022, we might expect to see some impact in the apartment rent growth data already. We look at a simple relationship between year-over-year rental growth versus our interest rate sensitivity index in **Exhibit 7**.

A noticeable negative relationship exists between rent growth over the past year and how sensitive a metro's economy is to changes in interest rates. Generally, we see that many economies in the Northeast and Midwest show less sensitivity to interest rates and have outperformed over the past year. Indeed, the 10 metros ranked as least sensitive to interest rates have recorded rental growth of 3.1% over the past year through July; conversely, the 10 metros ranked as most sensitive to interest rate increases have seen rents decline 0.9%.

Exhibit 6: Concentrate on Metros With Less Interest Rate Sensitivity . . .

Interest Rate Sensitivity Index

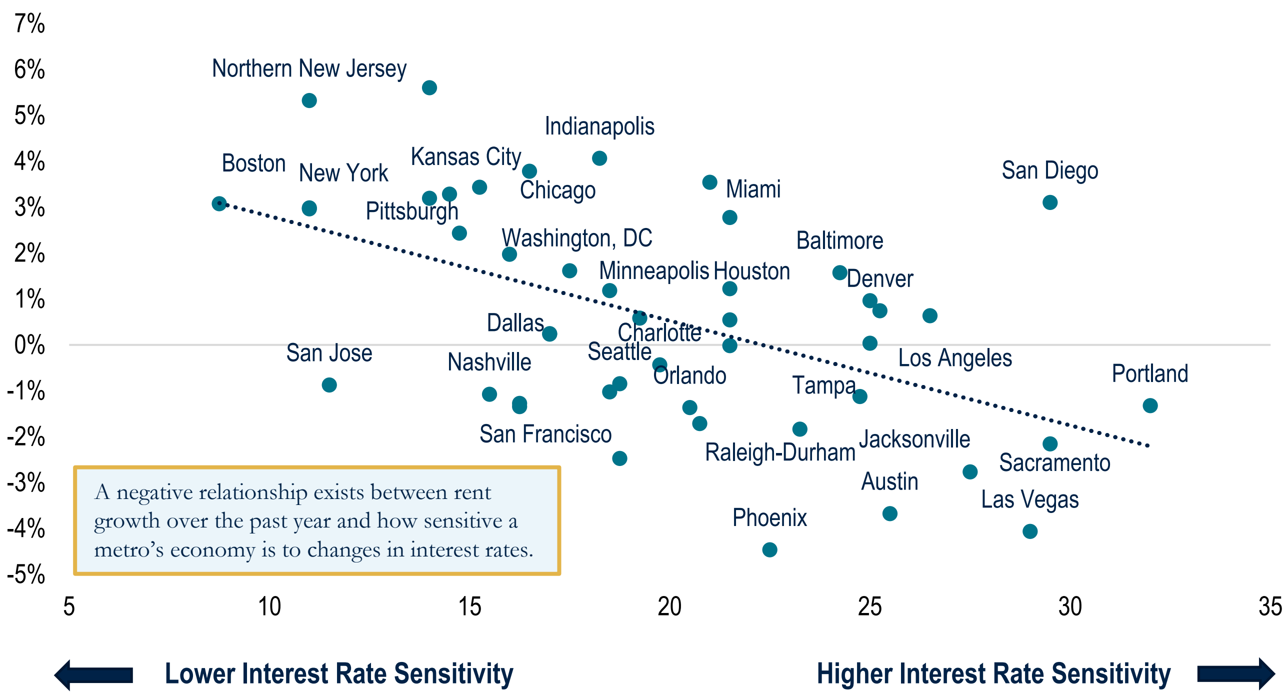


Sources: Oxford Economics, OECD, PGIM Real Estate. As of August 2023.

[4] Note: Factor #1 is proxied by using debt to income ratios in each metro. Given data limitations, we use small business employment as a percent of total employment as a proxy measure for factor #4.

Exhibit 7: Concentrate on Metros With Less Interest Rate Sensitivity . . .

Annual Rental Growth vs Interest Rate Sensitivity Index



Sources: Federal Reserve Bank of St. Louis, RealPage, PGIM Real Estate. As of August 2023.

The end of the tightening cycle appears in sight, yet we know impacts from monetary tightening flow through the economy with a lag. With that in mind, we expect to see these relative impacts continue to play out at least through 2024, and possibly longer should economic growth and inflation surprise to the upside, requiring even more restrictive monetary policy from the Fed. Were that to be the case, current 2025+ rent growth forecasts for the most interest rate sensitive metros are likely to be too rosy.

What Insights Does the Senior Loan Officer Opinion Survey Unveil for the Commercial Real Estate Debt Market?

Results from the latest Senior Loan Officer Opinion Survey (SLOOS) indicate that banks are taking a more cautious stance toward commercial real estate (CRE) by further tightening their lending standards across all CRE loan categories: non-residential/non-farm, multifamily and construction (**Exhibit 8**).

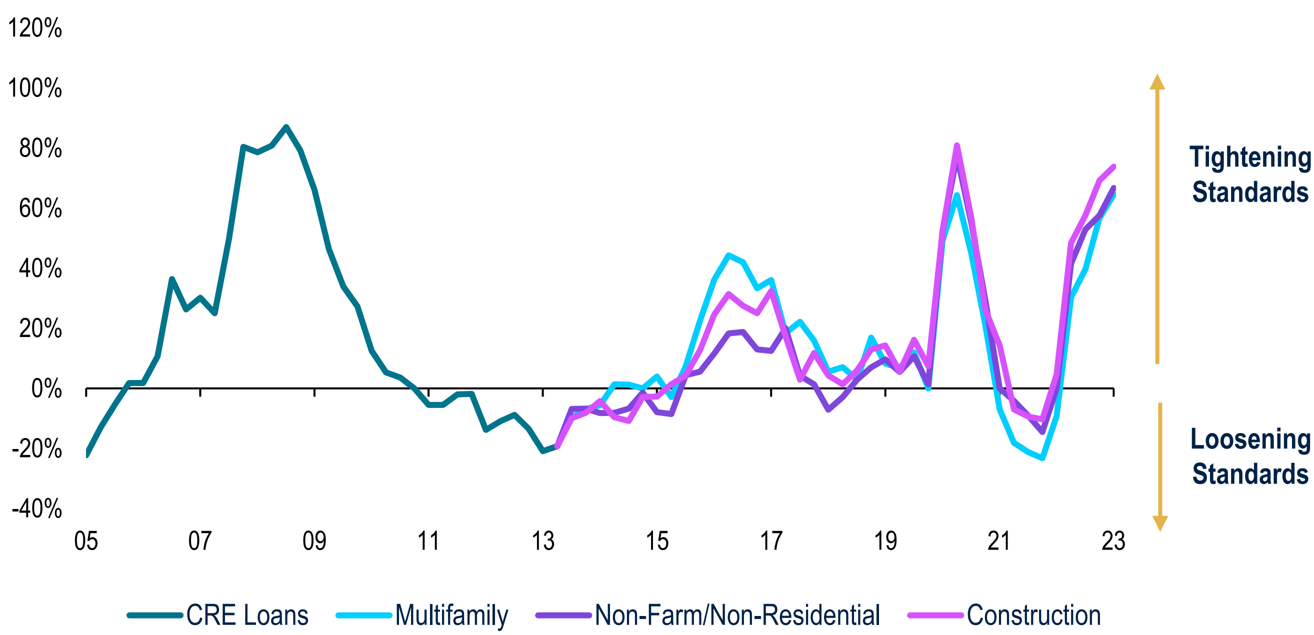
The SLOOS on bank lending practices conducted by the Federal Reserve Board of Governors (Fed) assesses the standards and terms on which banks are granting CRE loans. The latest results point to changing dynamics in the banking sector, particularly regarding CRE lending, and provide key insights into the outlook for the CRE debt market.

Tightening bank lending standards appear to be spurred by an uncertain economic outlook, deterioration in the quality of existing loan portfolios and an anticipated increase in problem assets. The lending environment is also influenced by the Fed's recent decision to continue raising interest rates, bringing the target range for the Fed's funds rate to 5.25-5.5%. Banks indicated that they are experiencing decreasing demand for CRE loans as borrowers face higher debt financing costs.

Additionally, the Basel III regulatory reforms will increase regulatory capital that banks must hold. While enhanced regulatory reforms are primarily targeted at banks, they will indirectly impact the non-bank lending landscape; pushing banks to retreat from certain types of loans will open up a new lending space for non-bank lenders. Looking ahead, banks anticipate even tighter lending standards for the remainder of the year.

Exhibit 8: Senior Loan Officer Opinion Survey

Bank Lending Standards on Commercial Real Estate Loans (Net %)



Sources: Board of Governors of the Federal Reserve System, PGIM Real Estate. As of August 2023.

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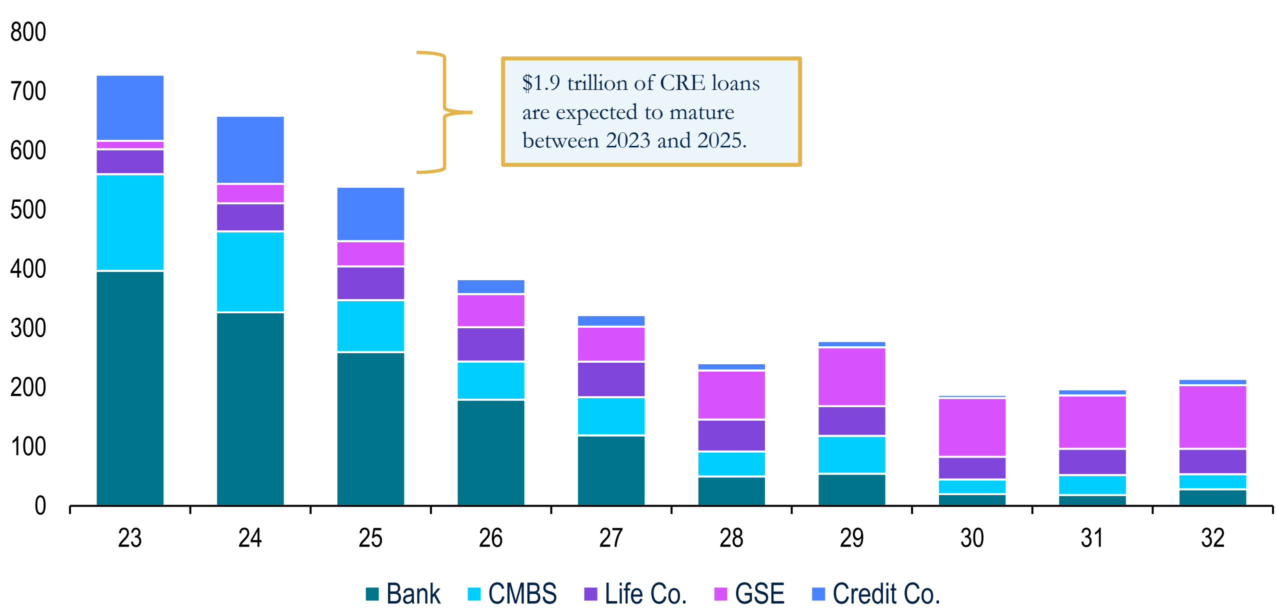
Stricter lending criteria coincides with $1.9 trillion of CRE loans that are due to mature between 2023 and 2025, of which over half, or $983 billion, are bank loans (**Exhibit 9**). Borrowers who obtained loans when interest rates were low will face much higher financing costs, and will no doubt exercise every feasible option to extend their existing loans. However, some borrowers will struggle to secure the needed financing.

This scenario will lead to a gap in the lending market, offering non-bank lenders a chance to step in and meet the underserved loan demand. The increase in interest rates could translate into higher yields on new loans, which would positively impact returns. The flip side will be increased financial burden and an influx of borrowers unable to meet bank lending standards. This could potentially introduce a higher risk profile leading to heightened risk of defaults. While this necessitates more robust risk assessments to avoid potential pitfalls, in the longer term it will strengthen the profile of loans in the CRE debt markets.

The SLOOS acts as an early warning system for potential disruptions or significant changes in the CRE debt market, providing a forward-looking view that reflects banks' internal assessments and anticipations. Therefore, it serves as a valuable tool to gauge the health and future direction of the CRE debt market. Understanding changes in lending standards, demand for loans, interest rate outlook and credit availability helps in anticipating market trends and making informed decisions. While these developments suggest a more challenging borrowing environment for CRE, they also create an opportunity for non-bank lenders.

Exhibit 9: Loan Maturity Profile

Commercial Real Estate Loan Maturity by Capital Source ($ Billion)



Sources: Mortgage Bankers Association, PGIM Real Estate. As of August 2023.

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