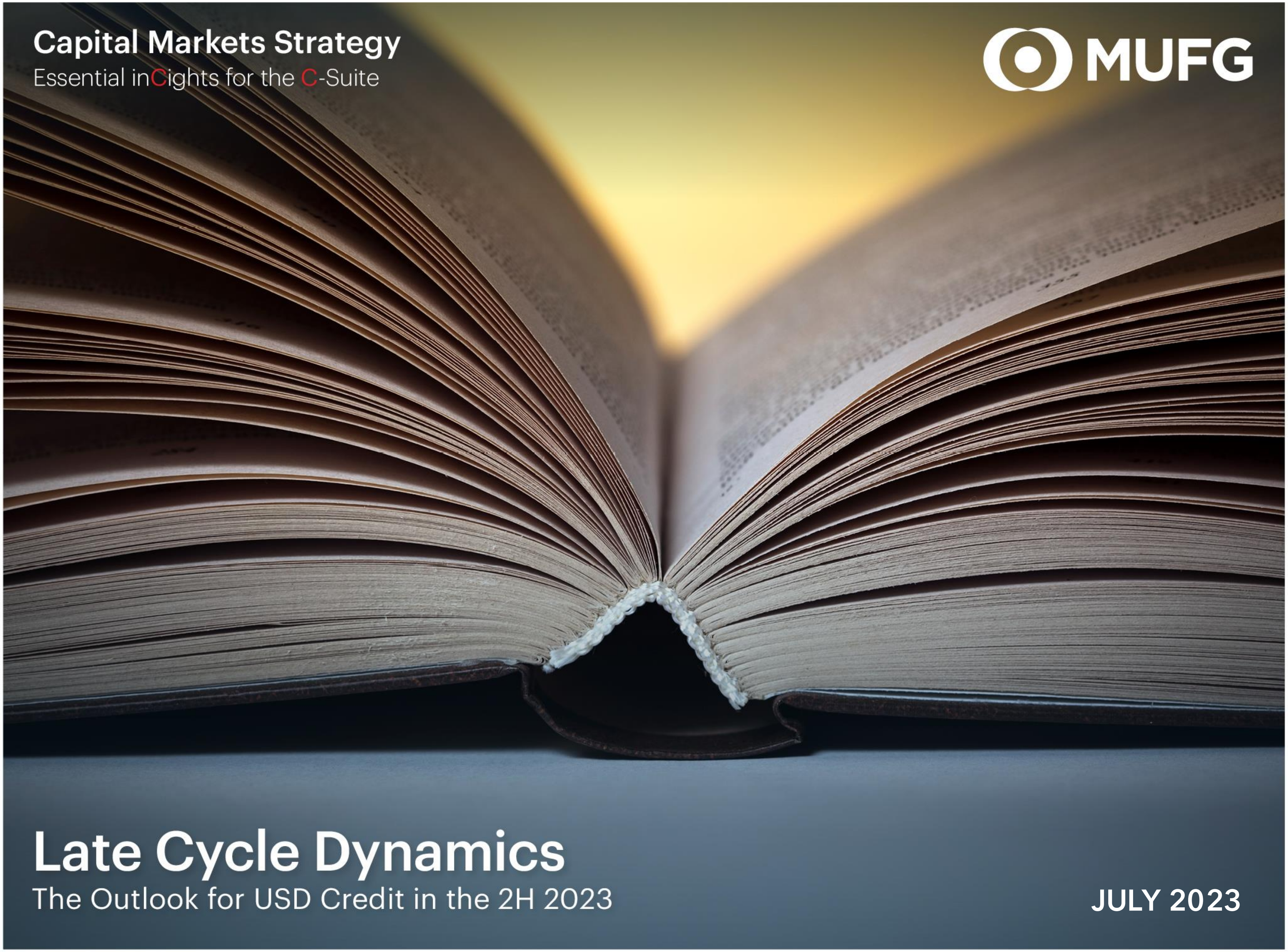

Capital Markets Strategy

Essential inCights for the C-Suite

# Late Cycle Dynamics

## The Outlook for USD Credit in the 2H 2023

JULY 2023

# Bond Returns Have Turned Positive

Annual relative total returns, USD markets

| 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 1H 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| S&P 500 32.4% | S&P 500 13.7% | Munis 3.6% | High Yield 17.5% | S&P 500 22.3% | Munis 1.0% | S&P 500 31.5% | S&P 500 18.4% | S&P 500 28.7% | Loans (-0.6%) | **S&P 500 16.9%** |
| High Yield 7.4% | Munis 9.8% | Mortgages 1.5% | S&P 500 12.0% | EM Sov 10.0% | Mortgages 1.0% | High Yield 14.4% | High Grade 9.8% | Loans 5.4% | Munis (-9.0%) | **Loans 6.4%** |
| Loans 5.4% | High Grade 7.5% | S&P 500 1.4% | Loans 10.4% | High Yield 7.5% | US Gov't 0.8% | EM Sov 14.3% | US Gov't 8.2% | High Yield 5.4% | High Yield (-11.2%) | **High Yield 5.4%** |
| Mortgages (-1.4%) | EM Sov 7.3% | US Gov't 0.8% | EM Sov 9.5% | High Grade 6.5% | Loans 0.6% | High Grade 14.2% | High Yield 6.2% | Munis 1.8% | Mortgages (-11.9%) | **EM Sov 4.2%** |
| High Grade (-1.5%) | Mortgages 6.1% | EM Sov 0.6% | High Grade 6.0% | Munis 5.4% | High Grade (-2.2%) | Loans 8.7% | Munis 5.3% | High Grade (-1.0%) | US Gov't (-12.9%) | **High Grade 3.2%** |
| Munis (-2.9%) | US Gov't 6.0% | Loans 0.1% | Mortgages 1.7% | Loans 4.6% | High Yield (-2.3%) | Munis 7.7% | EM Sov 4.8% | Mortgages (-1.2%) | High Grade (-15.4%) | **Munis 2.8%** |
| US Gov't (-3.3%) | High Yield 2.% | High Grade (-0.6%) | US Gov't 1.1% | Mortgages 2.4% | S&P 500 (4.4%) | US Gov't 7.0% | Mortgages 4.1% | US Gov't (-2.4%) | S&P 500 (-18.1%) | **Mortgages 1.9%** |
| EM Sov (-5.8%) | Loans 1.8% | High Yield (-4.6%) | Munis 0.4% | US Gov't 2.4% | EM Sov (-4.6%) | Mortgages 6.5% | Loans 3.5% | EM Sov (-2.6%) | EM Sov (-18.3%) | **US Gov't 1.6%** |

*Source: (1) CreditSIghts. Bloomberg. Data through June 30, 2023. BAML, S&P LSTA. Bloomberg EM Sov is USD EM Sovereign BBB & lower index.*

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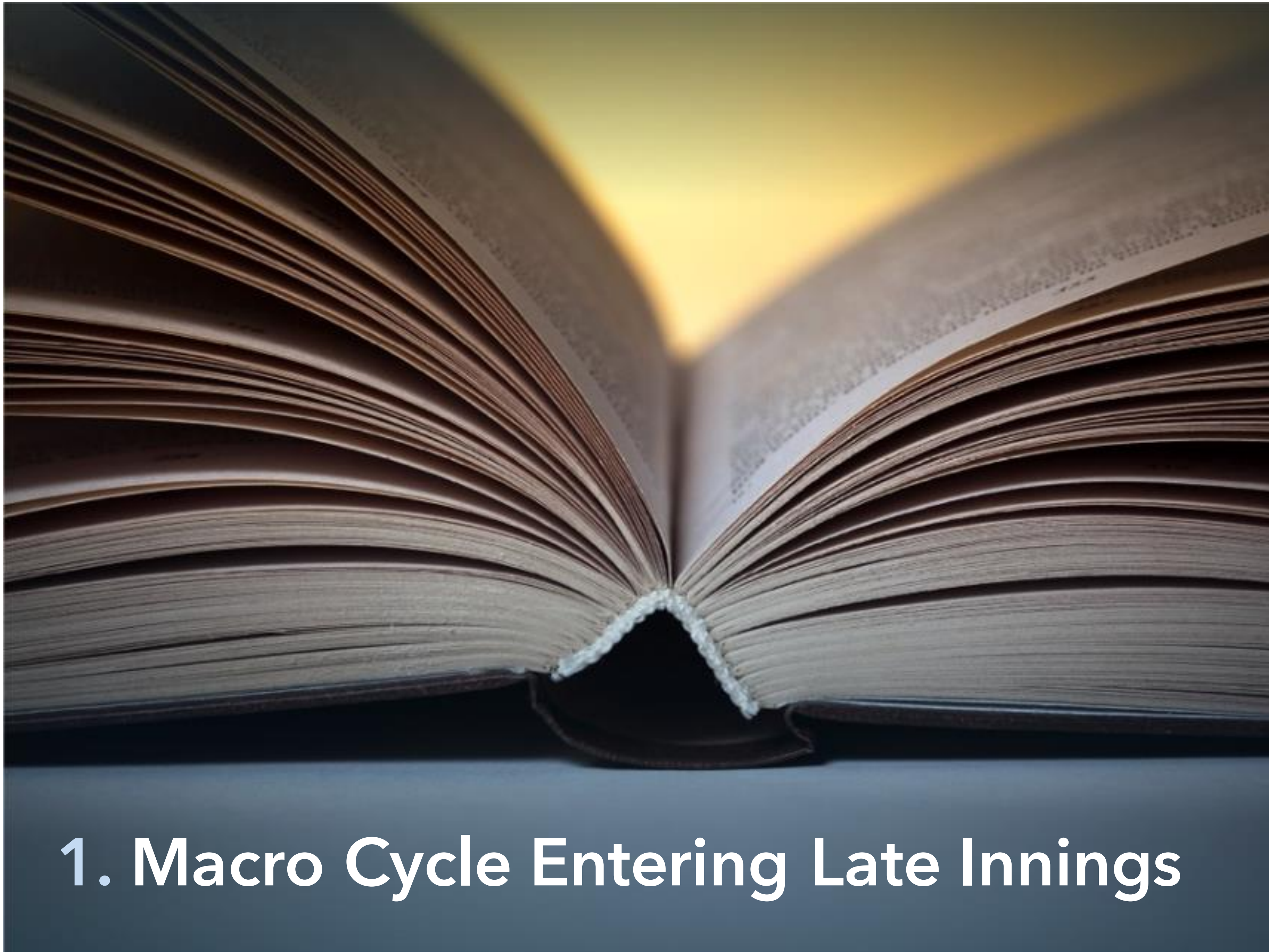

1. Macro Cycle Entering Late Innings

**“Although policy is restrictive, it may not be restrictive enough and it has not been restrictive for long enough.”**

Federal Reserve Chair Jerome Powell

# Resilient US Economy Extending Cycle

**COVID related structural imbalances extending the cycle**

## $10 trillion of fiscal and monetary stimulus

(Still working way through the economy)

## $2 trillion of "excess" US consumer COVID savings

(Approximately $500 - 800 billion remaining)

## Balance sheets strengthened during COVID

(Over $4 trillion USD IG & HY issuance in 2020 and 2021 combined)

## Structurally tight labor markets

(Numerous pre and post COVID multi-year drivers)

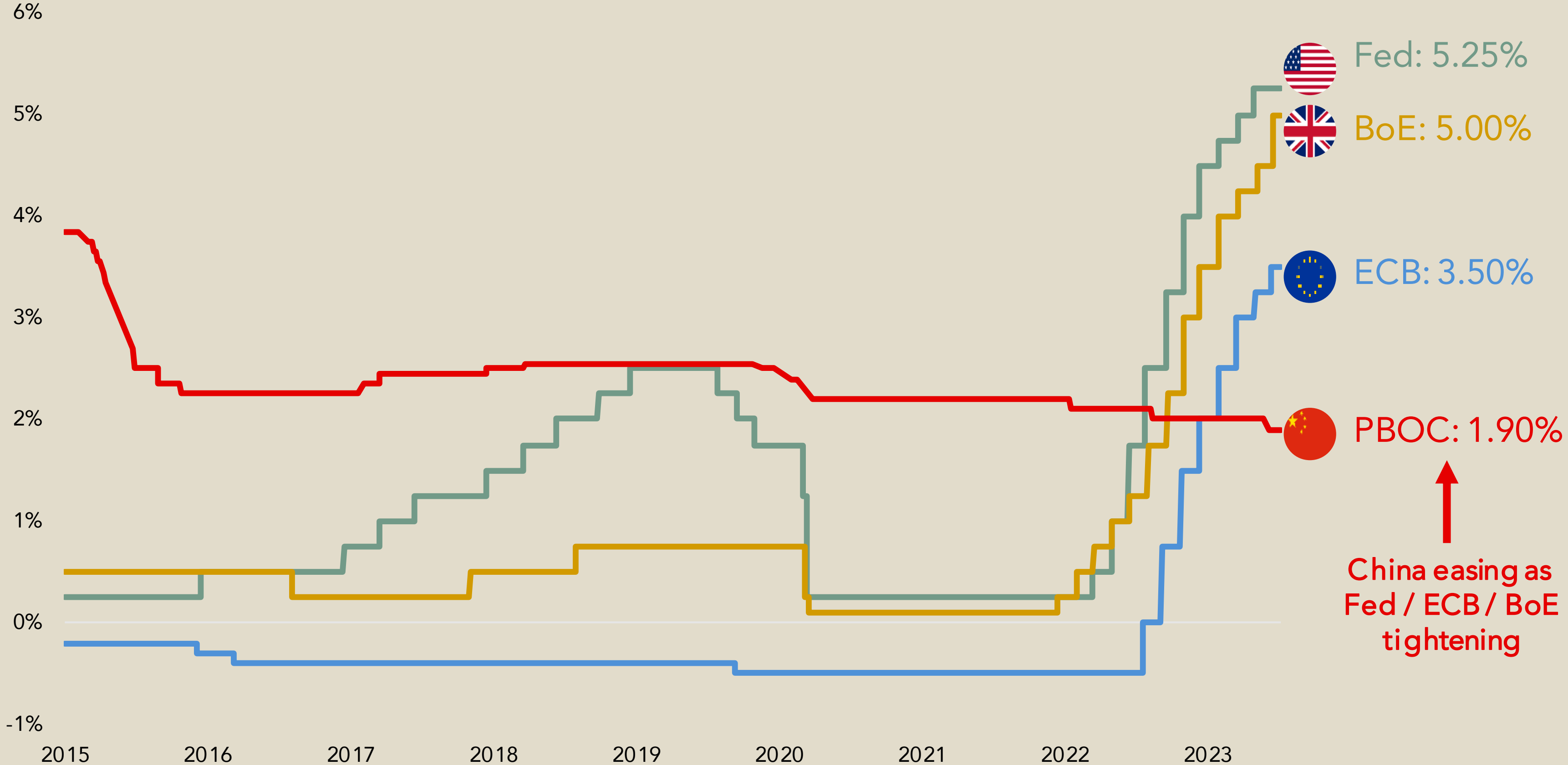
## Post COVID pent up consumer demand

(Demand for services remains high as consumer normalizes behavior)

# Hiking Into a Slowdown

The current Fed tightening cycle has been an unusual one by virtue of the speed and magnitude of its "double tightening" (500 bps of rate increases, $95 bn of QT per month). With core inflation still well above target at 4.8%, markets are assigning approximately 90% probability of a final rate hike at the July 26 meeting, even as dozens of economic and market metrics signal that an economic slowdown is well underway.

Central Bank policy rates

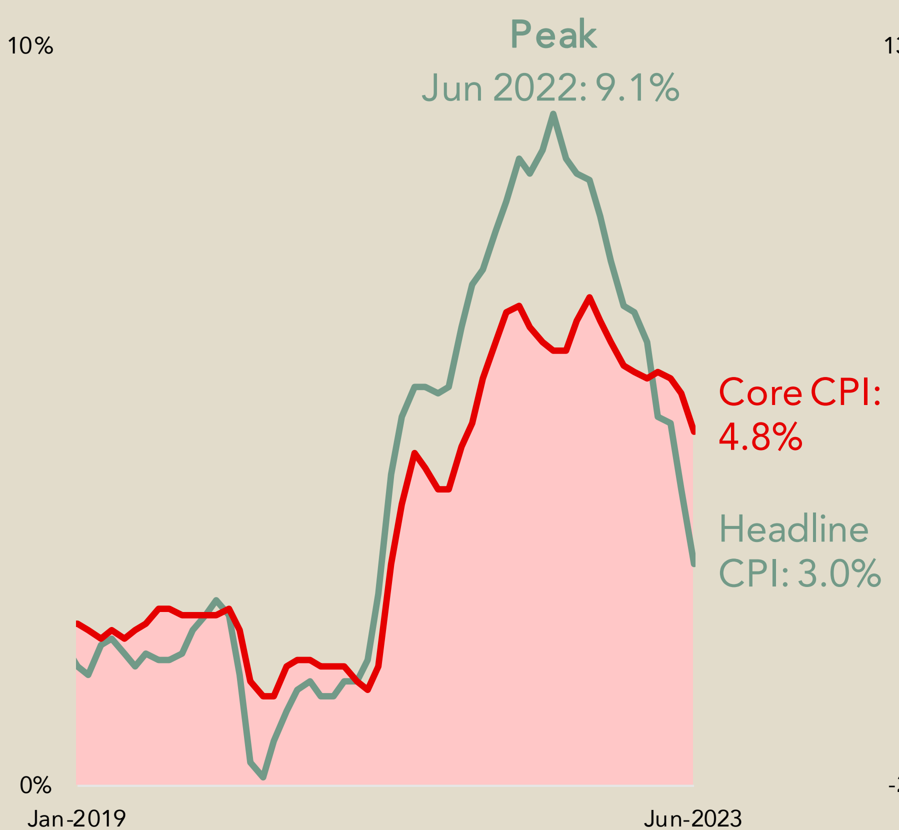



*Source: (1) Bloomberg. Data as of July 12, 2023. BoE is the bank rate. ECB is deposit rate. China is the 7-day reverse repo rate.*

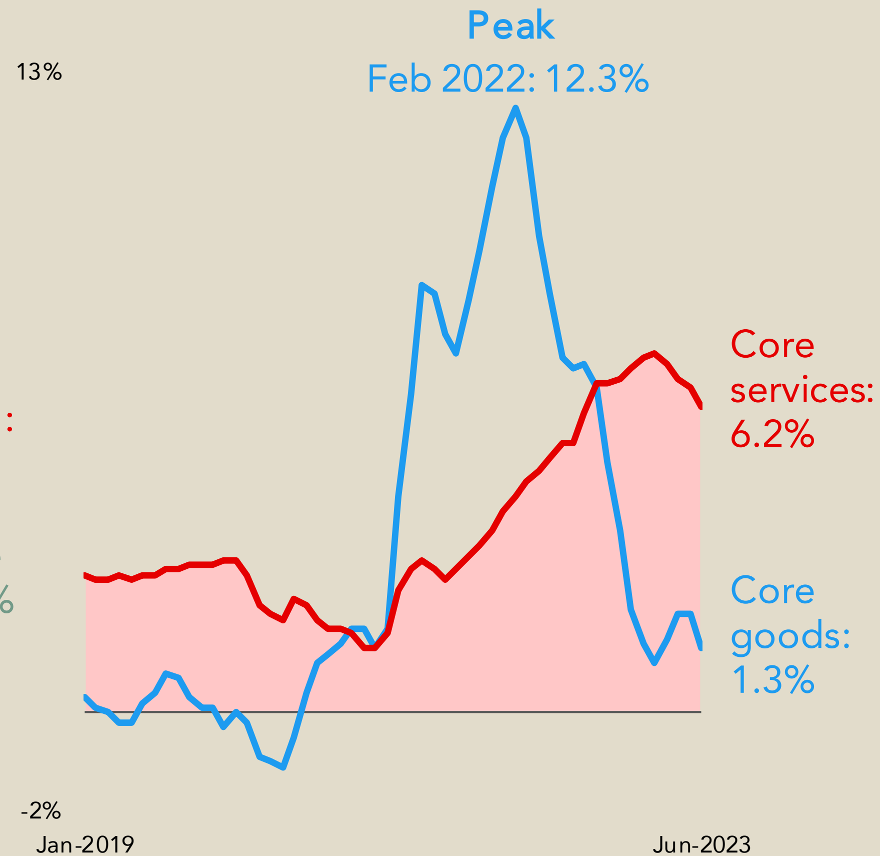
# "Core" & "Services" Inflation Declining More Slowly

While headline US inflation has declined from 9.1% to 3% over the last year, much of the recent progress has been due to lower energy prices and "base effects" (i.e., y/y comparisons). While Fed policy is close to sufficiently restrictive, core CPI and services inflation are still well above target.

**US core and headline inflation, y/y**

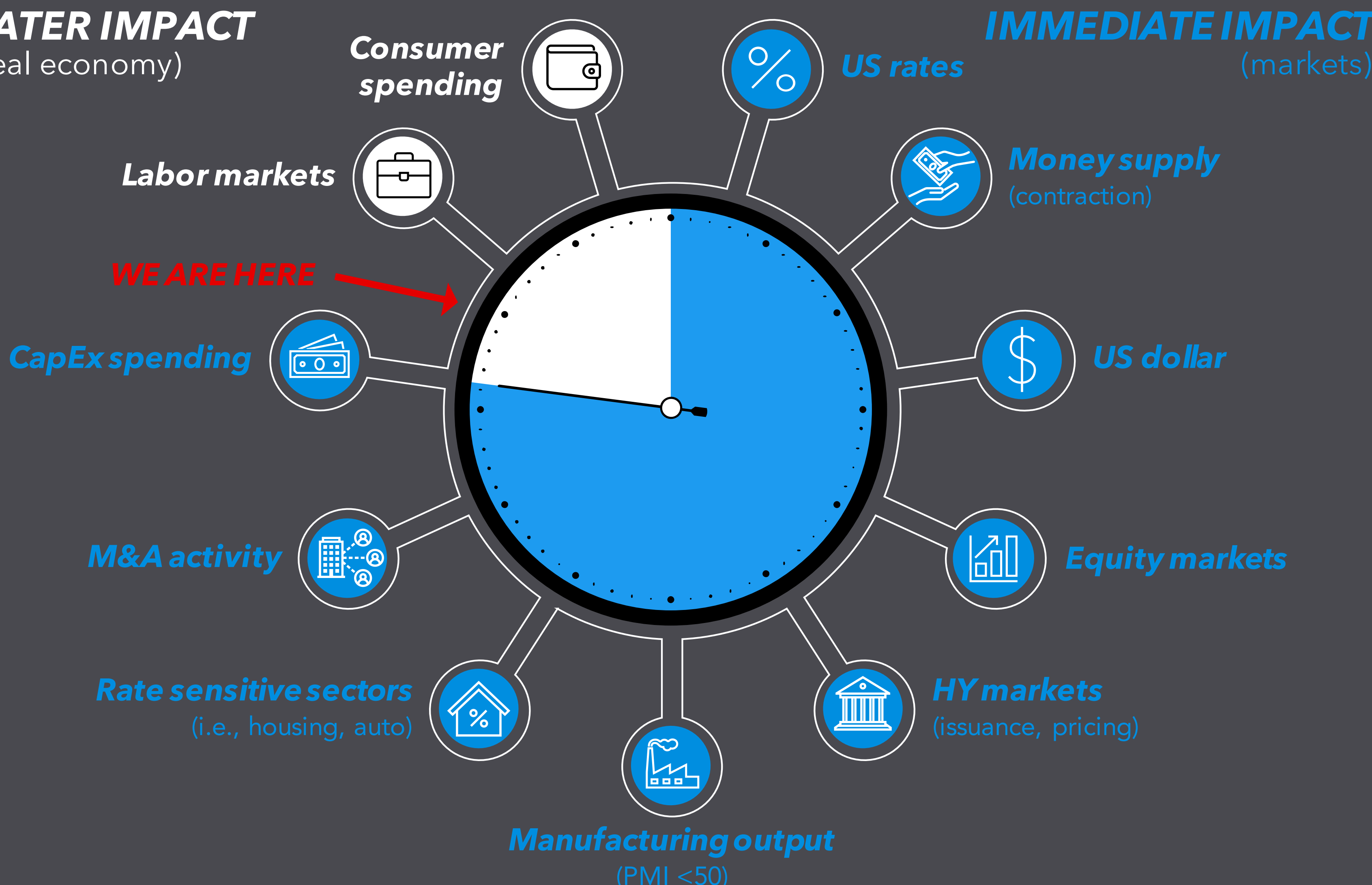



**US core goods and services inflation, y/y**



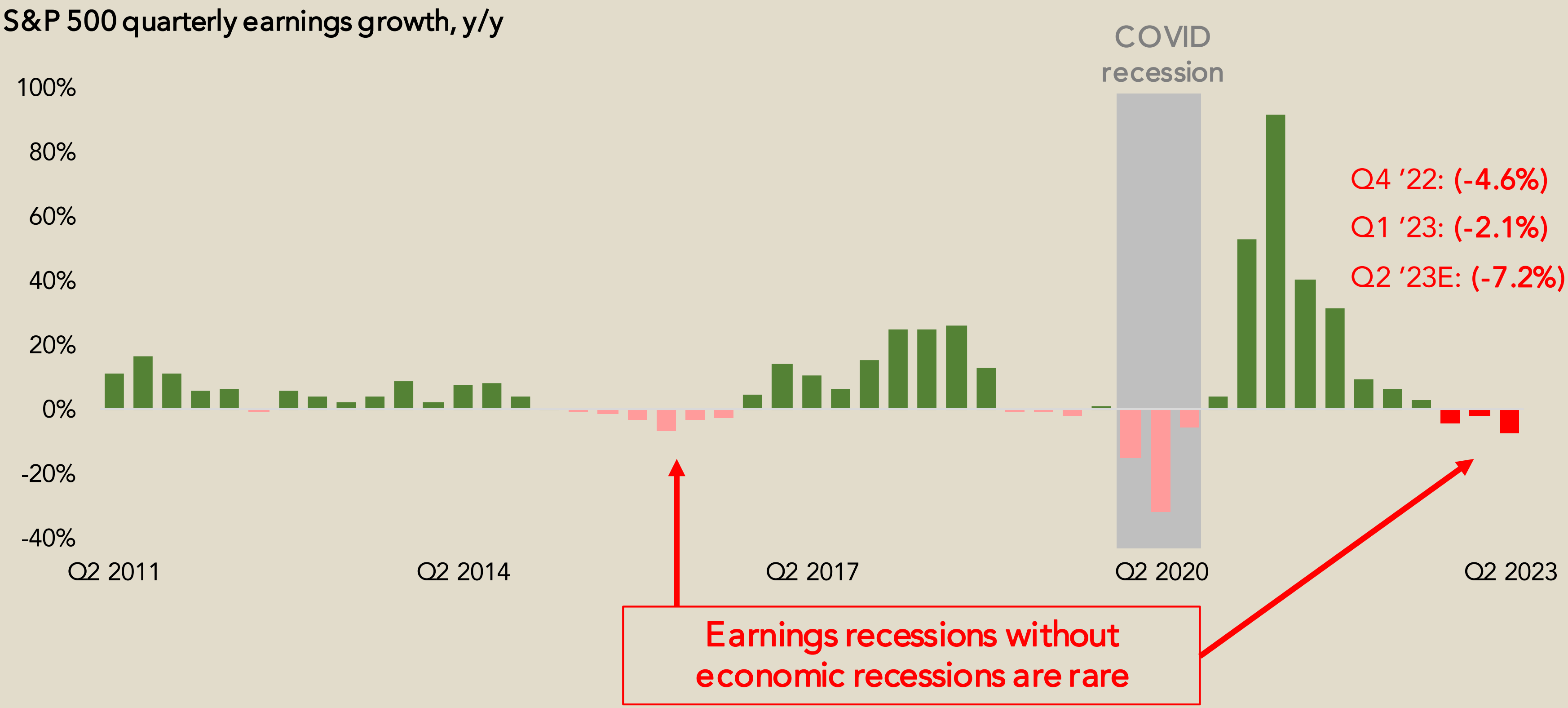

*Source: (1-2) Bloomberg. Data as of July 12, 2023. Goods is commodities less food and energy commodities. Services is less energy.*

# Monetary Policy Operates with a 12-18 Month Lag



# Earnings Recession Well Underway

S&P 500 corporate earnings recessions in the absence of economic recessions are reasonably rare events, with a strong US dollar and/or low oil prices the culprit on each such occasion. The two quarter contraction in corporate earnings from Q4 '22 to Q1 '23, in the absence of a US economic recession, was only the 5th such occasion over the last 50 years, going back to 1974. Looking to Q2 2023, higher funding costs, slowing consumer demand and margin pressure are expected to drive a third sequential quarterly contraction in US corporate earnings (and potential cycle trough), itself a likely signal of looming US recession risk.

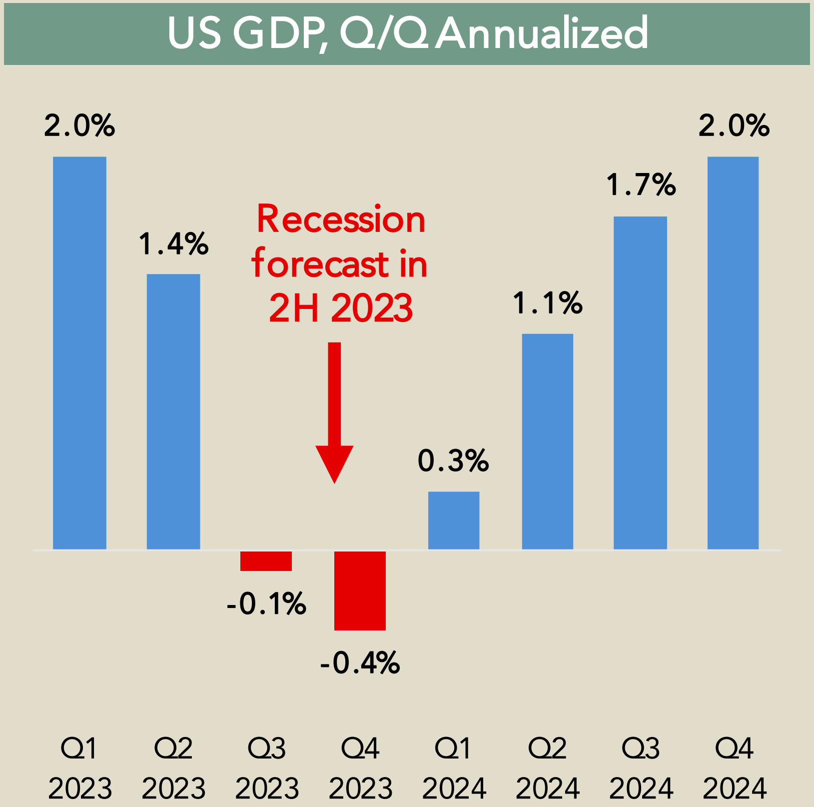


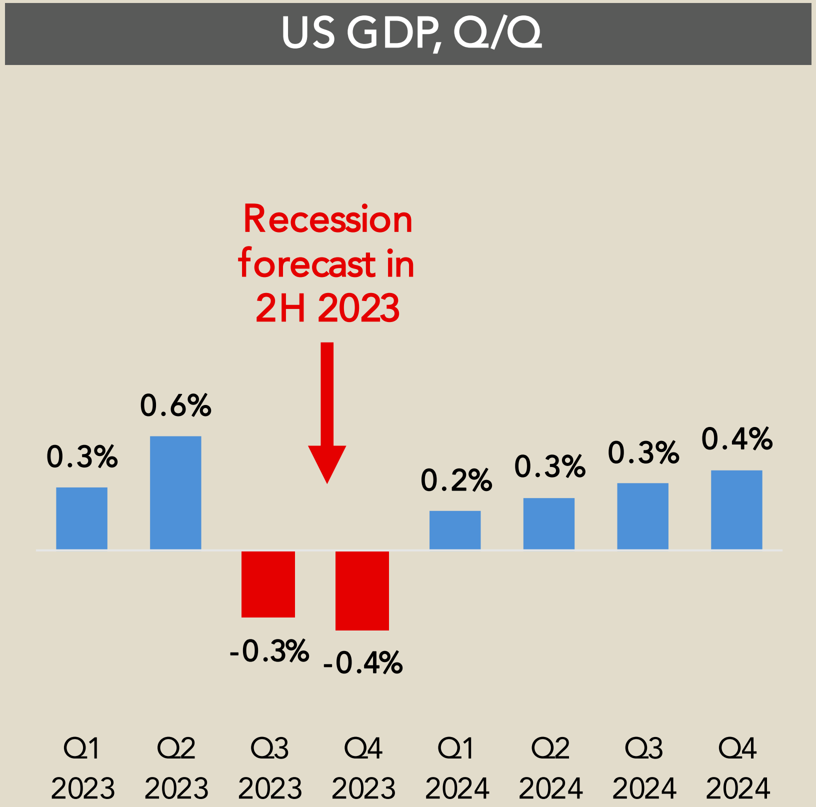

Source: (1) FactSet, Earnings Insight Report (July 7, 2023).

# Consensus Forecasting 2H 2023 Recession

While the US economy and consumer have been far more resilient than anticipated, dozens of economic and market metrics are pointing to a slowdown. Given the pace of Fed tightening, collapse in M2 money supply, yield curve inversion, impact of depleting savings and inflation on the consumer, and tighter bank lending standards, we believe near-term recession risk remains high. Less clear is whether the recession begins in the 2H 2023 or early 2024.

US quarterly GDP growth, q/q



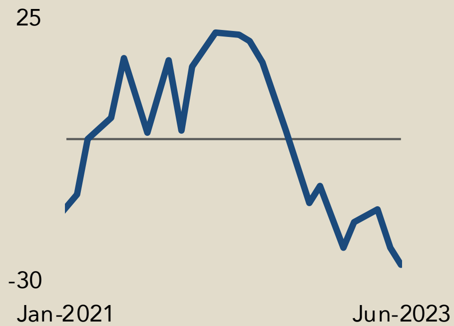

*Source: (1) Q/Q annualized forecasts are Bloomberg Consensus SAAR. US GDP Q/Q is Oxford Economics. Data as of July 13, 2023.*

# Banks Tightening Lending Standards

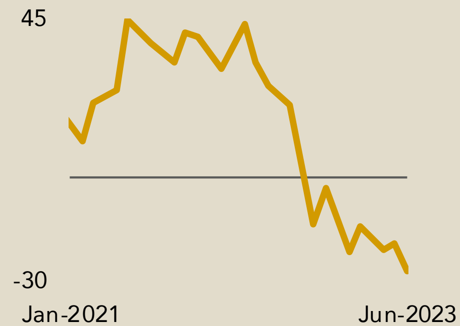
Bank loan volumes peaked in 2Q 2022 as the Federal Reserve began its most rapid tightening cycle since the 1980s and depositors began shifting deposits away from banks. Since the start of 2022, bank deposit outflows have topped $950 bn.

**Total bank loan volume index**

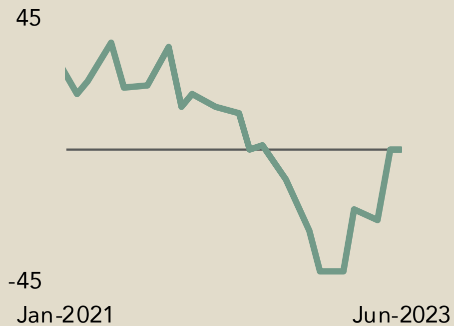

**Commercial & industrial loan volume index**



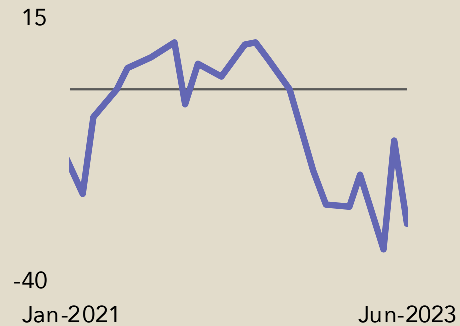

**Commercial real estate loan volume index**



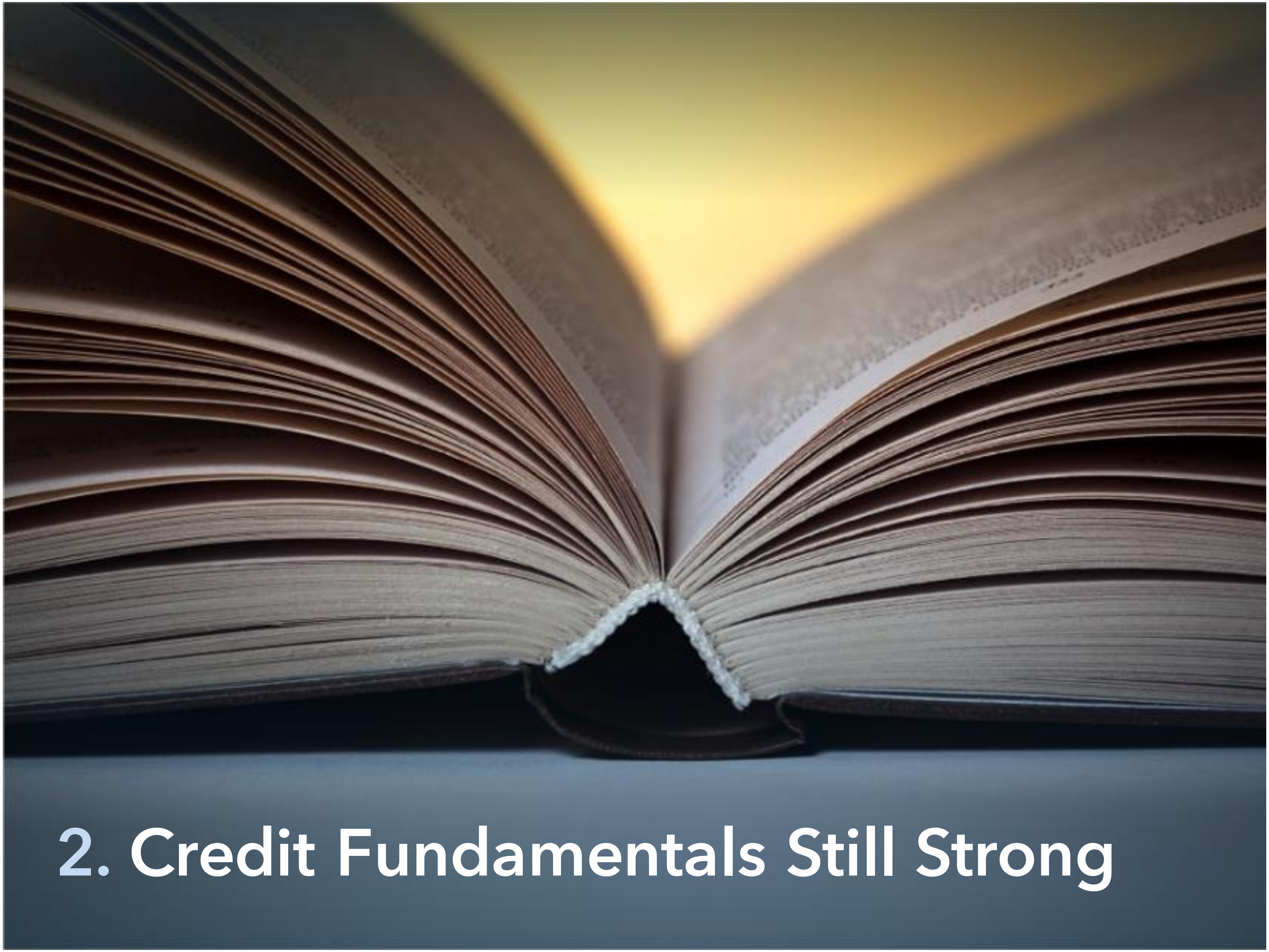

**Residential real estate loan volume**




**Consumer loan volume**




*Source: (1-5) Federal Reserve Bank of Dallas. Banking Conditions Survey June 2023. Data collected June 13-21, and 61 financial institutions responded to the survey.*



# 2. Credit Fundamentals Still Strong

**“Bliss was it in that dawn to be alive.”**

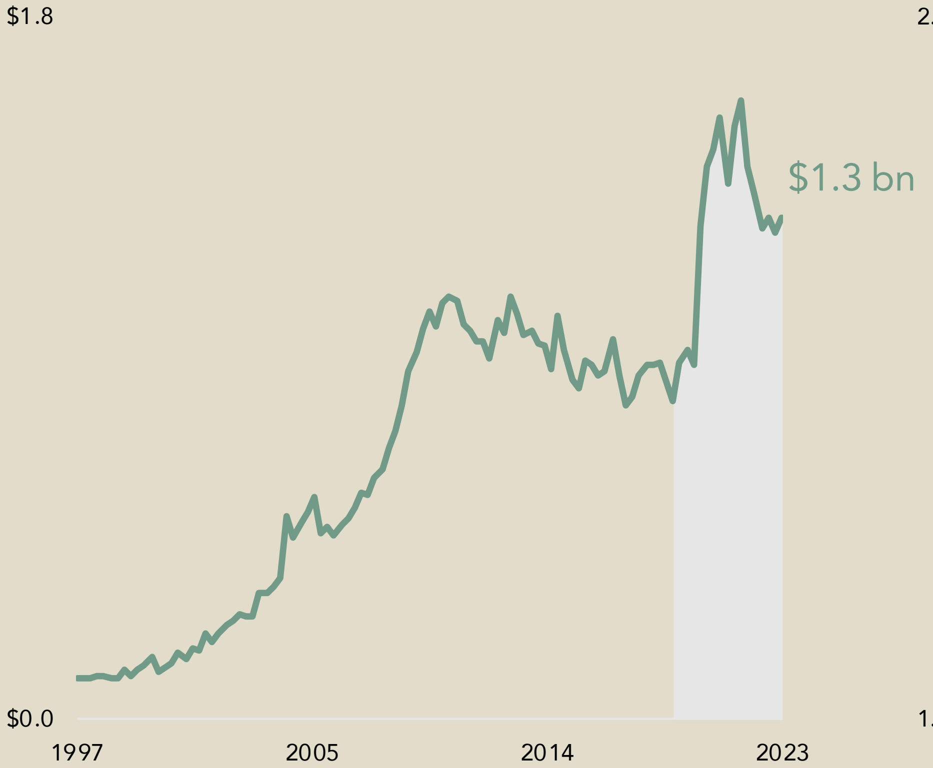
William Wordsworth, acclaimed English poet, at the dawn of the French Revolution (1789)

# Strong Corporate Balance Sheets

With record profits and robust capital markets issuance since the COVID crisis began 3 years ago, IG corporates have increased cash balances, reduced leverage and extended maturities.

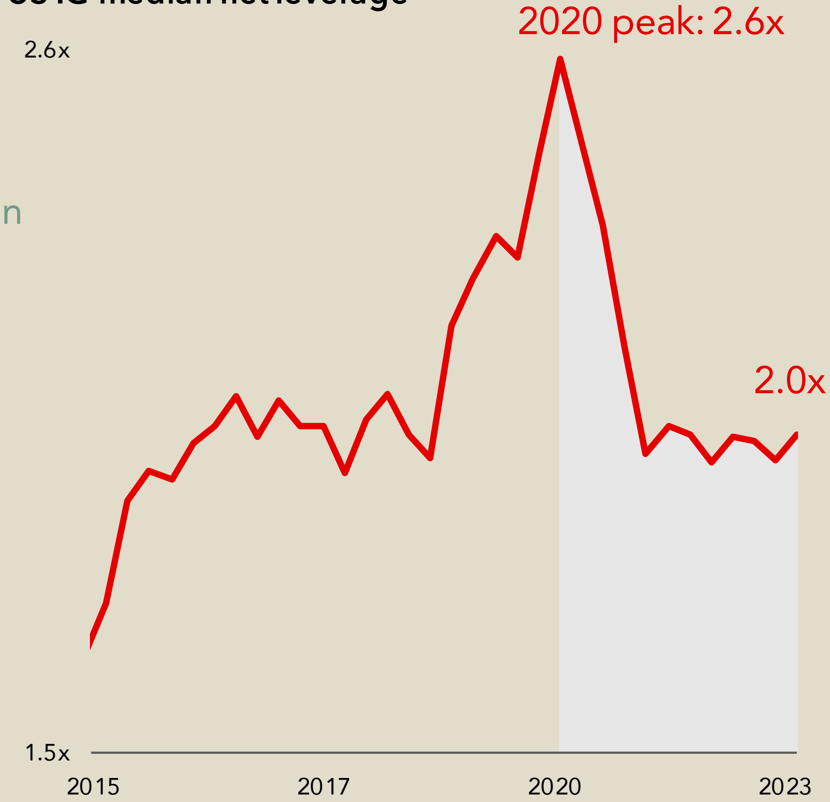
## IG Corporate Cash Balances

**Median IG corporate cash balances, USD bn**




## IG Corporate Leverage

**US IG median net leverage**

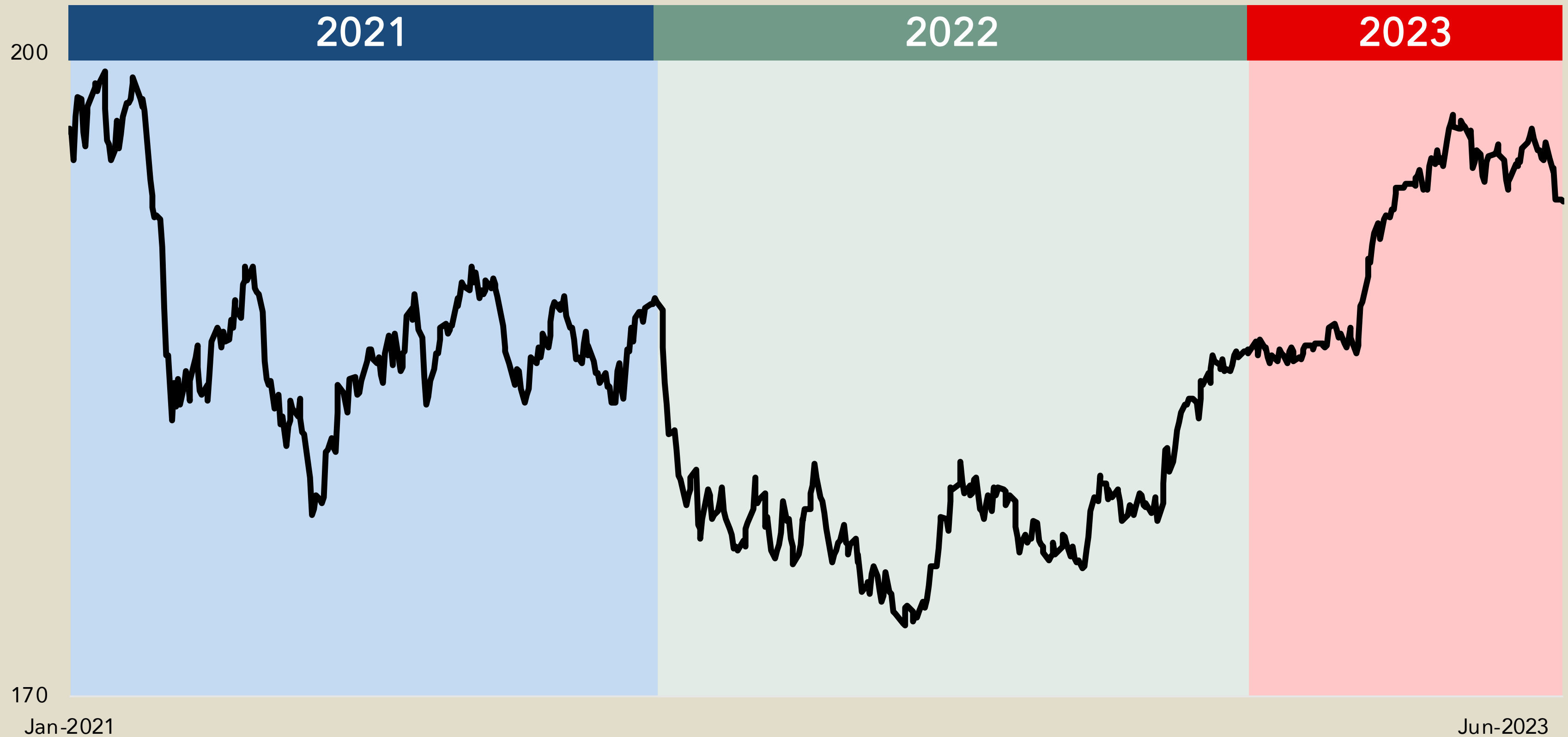



*Source: (1-2) CreditSights. BAML Index. Data through Q1 2023.*

# Investors More Discerning on Credit Differentiation

As the cycle matures, investors are increasingly differentiating on quality as tightening financial conditions begin to challenge markets. An index comparing the equity performance of US companies with the healthiest balance sheets vs. those with weaker balance sheets demonstrates the move into quality since the market rally began in 2022.

**Equity performance of strong vs. weak US corporate balance sheets**

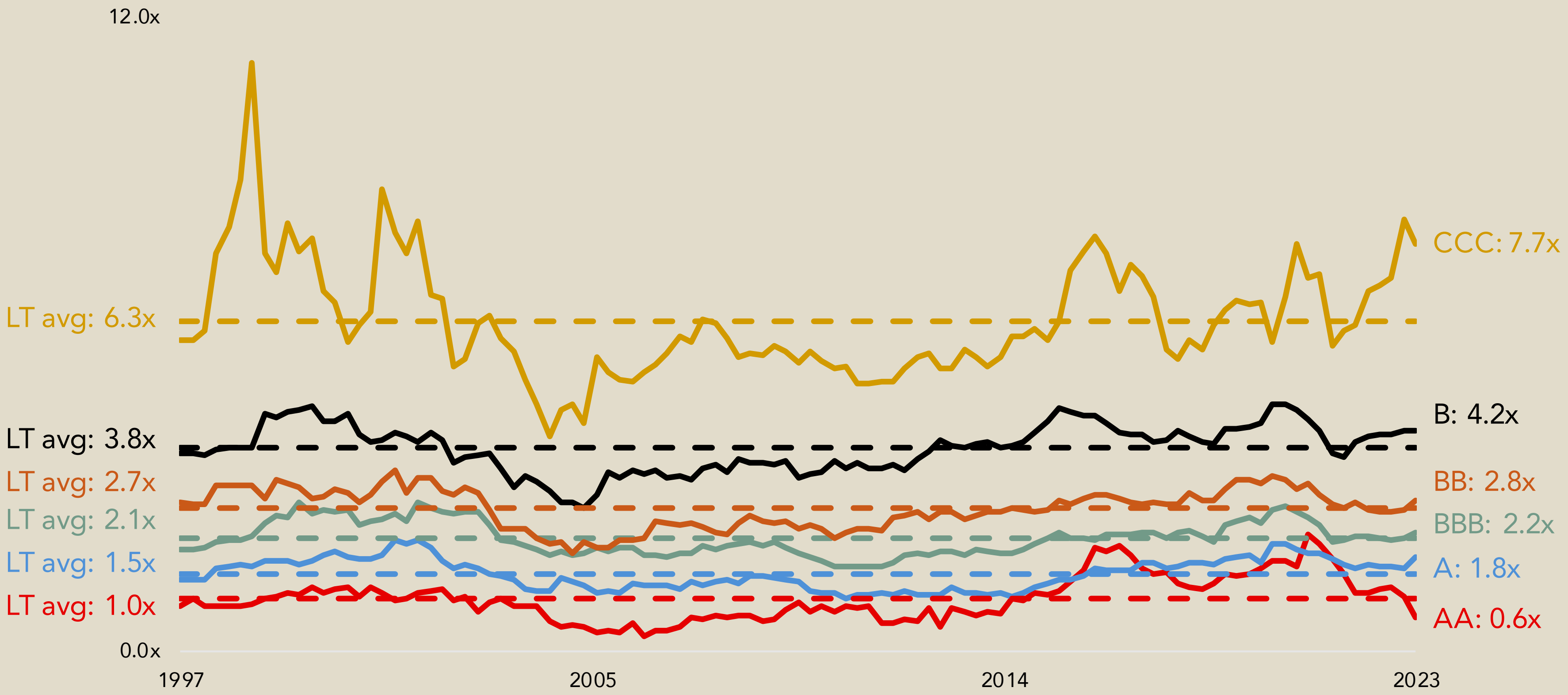



*Source: (1) Bloomberg. Data as of July 12, 2023. Index is SGEPSBSZ Index.*

# Strong Balance Sheets with Divergence by Rating

Corporate balance sheets in the multi-trillion USD bond markets have remained strong by historic standards, with variance by ratings category. Since Q2 2021, leverage has risen above LT averages for most ratings categories, though only modestly. At the low end, CCC leverage has diverged most sharply above LT averages, while in the strong AA rating category, leverage has sharply declined as cash balances increased by 67%.

USD net leverage by rating

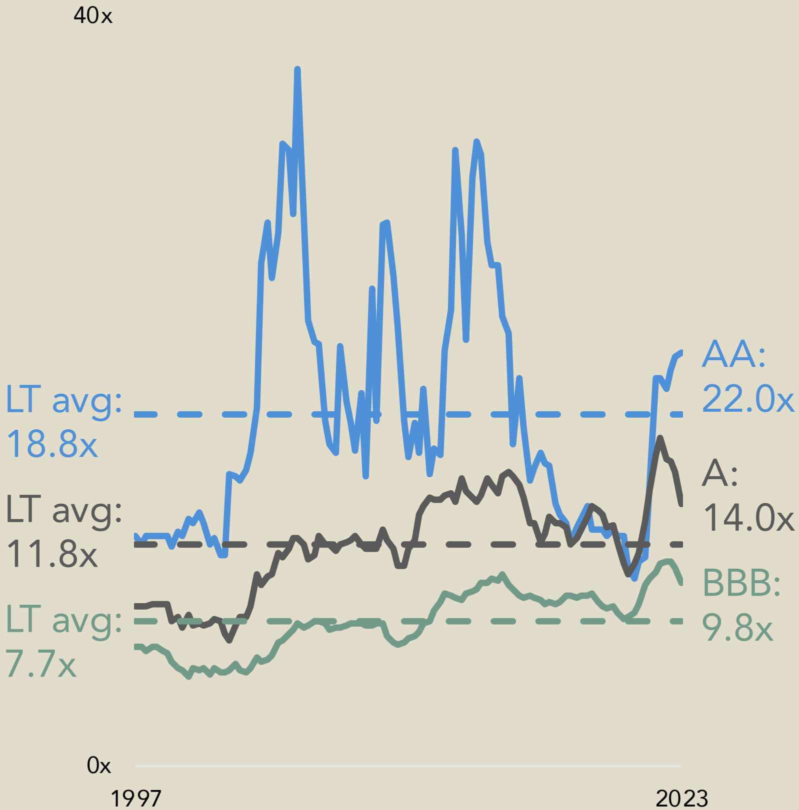



Source: (1) CreditSights, "US Strategy: IG leverage Report 1Q23."

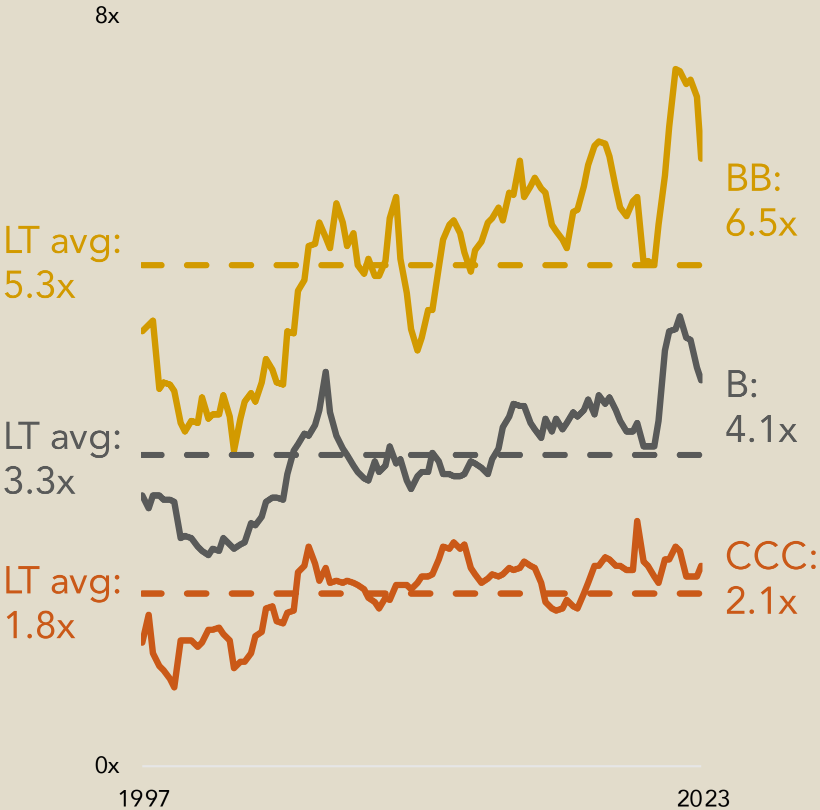
# Interest Coverage Ratios Above Historic Levels

Following a multi-year period of elevated earnings and margins, high cash balances and less leverage with extended maturities, corporates in the USD bond markets, in aggregate, have stronger interest coverage ratios than historic levels, as often occurs late in an economic expansion.

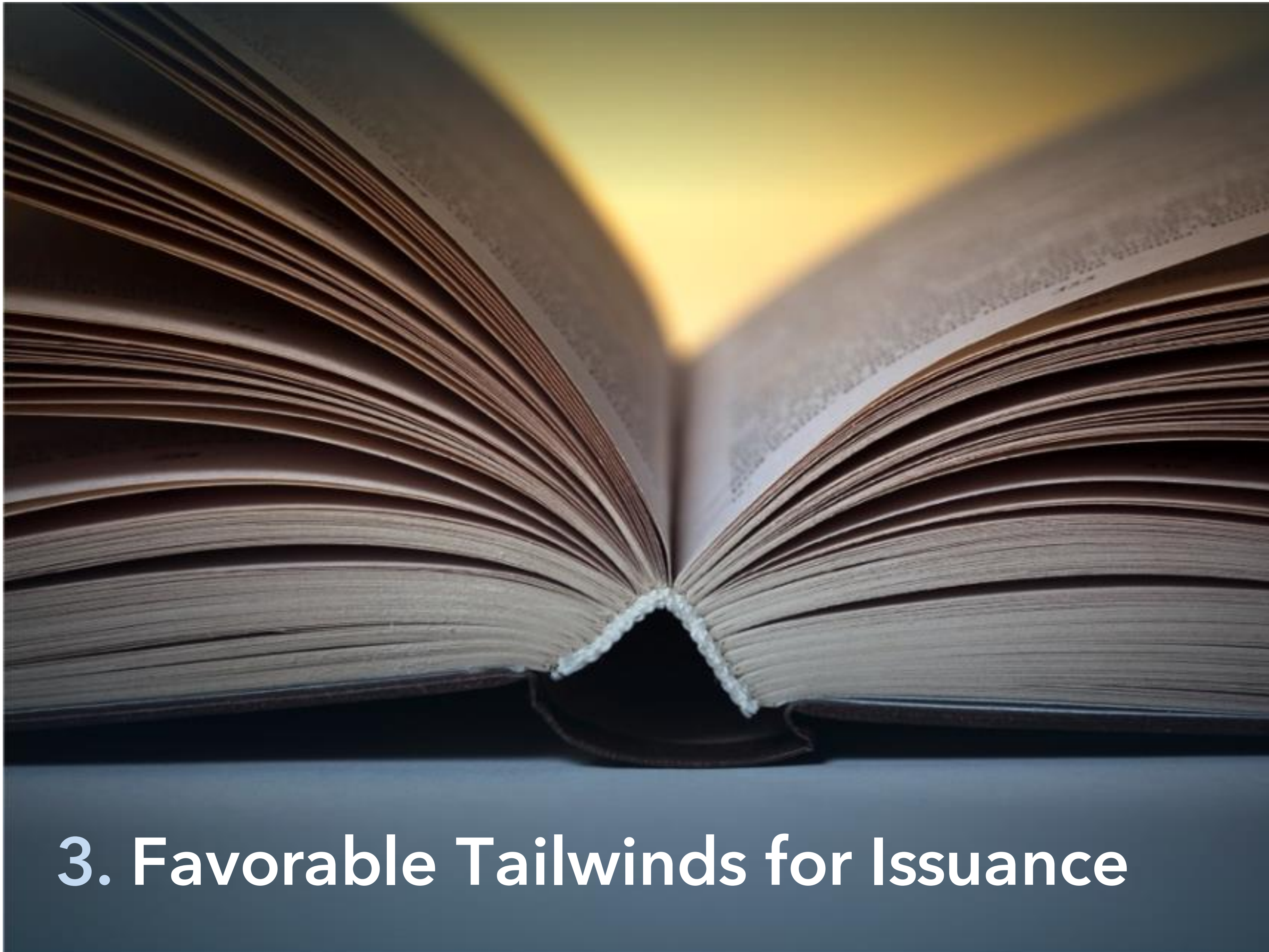
**USD IG interest coverage ratio, by rating**




**USD HY interest coverage ratio, by rating**




*Source: (1-2) CreditSights. Data through Q1 2023.*


3. Favorable Tailwinds for Issuance

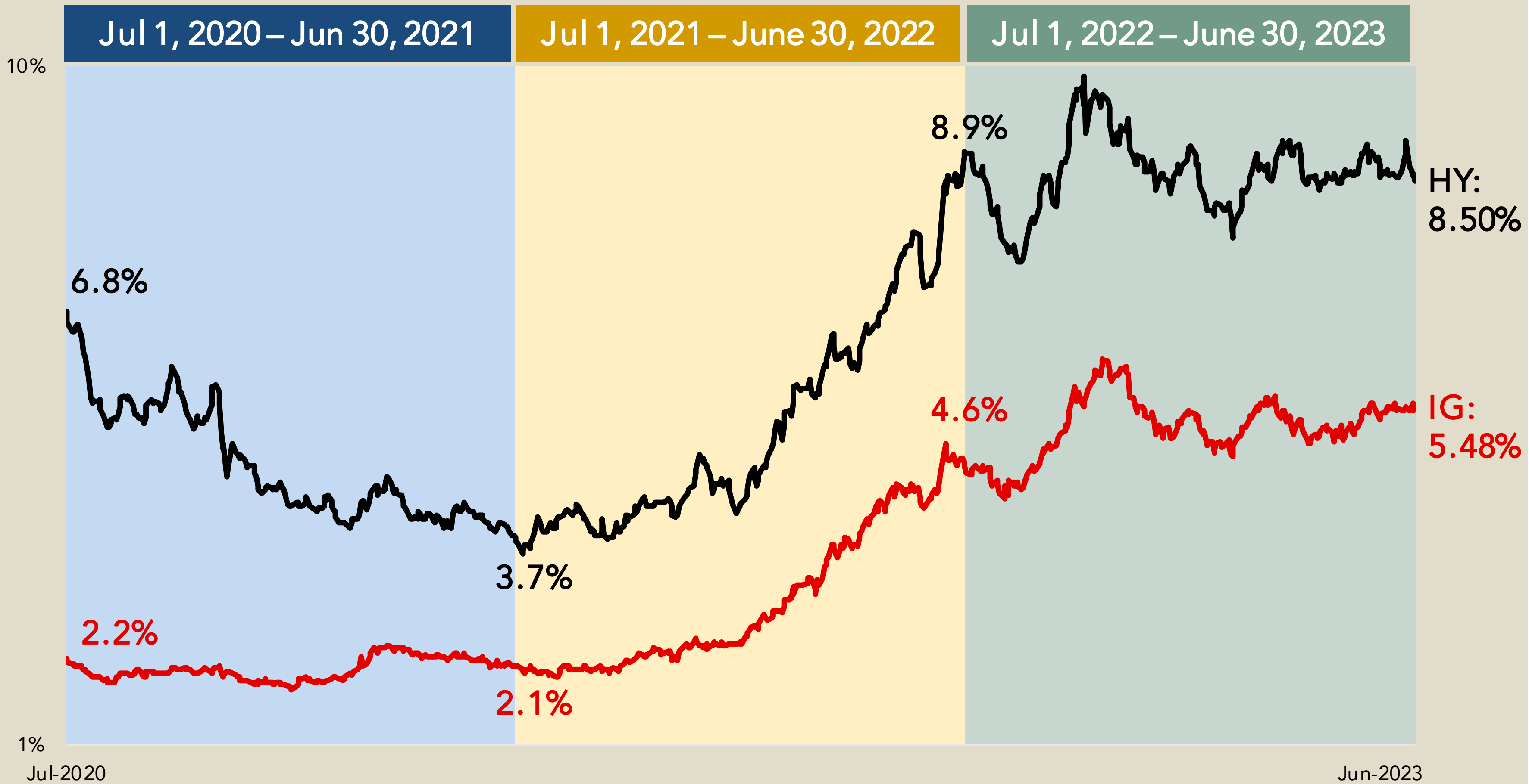
**“Difficulties are just things to overcome, after all”**

Sir Ernest Shackleton, acclaimed Antarctic Explorer (1874-1922)
in *Endurance* by Alfred Lansing

# Attractive Entry Point for High Quality Credit

With yields consistently above 5% for the first time since the GFC, high quality corporate bonds offer investors significant cushion to weather volatility and recession risk.

USD IG & HY index yield to worst

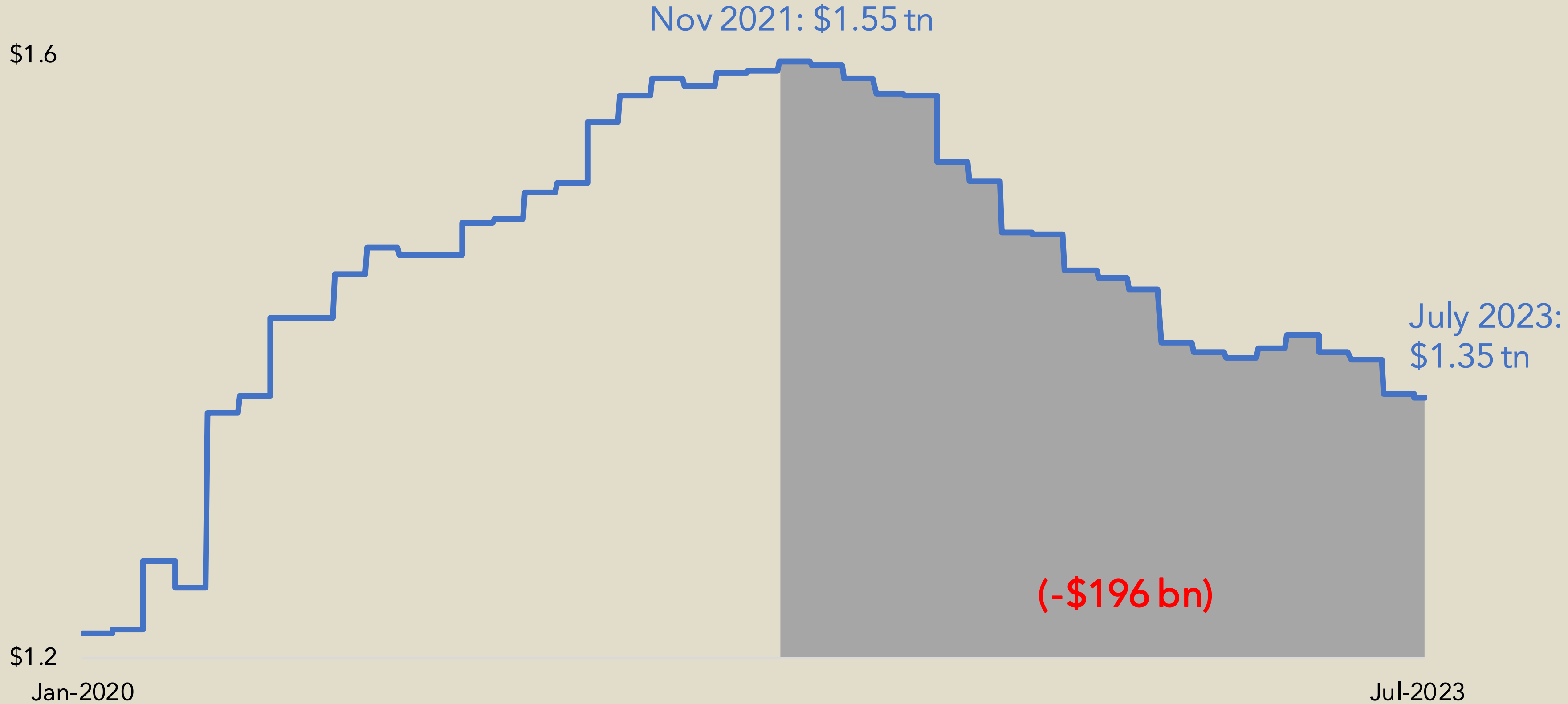



Source: (1) Bloomberg. Data through June 30, 2023.

# Favorable HY Market Technicals

Even as new issue volumes rebound, technical demand remains strong given the lower issuance since the Fed tightening cycle accelerated one year ago. With more than 2/3 of new issuance directed toward refinancing, less than 1/3 of 2023 YTD activity has been net new issuance. The total face value of outstanding high yield bonds has declined $200 bn since its peak in November 2021.

**HY index face value outstanding, USD tn**

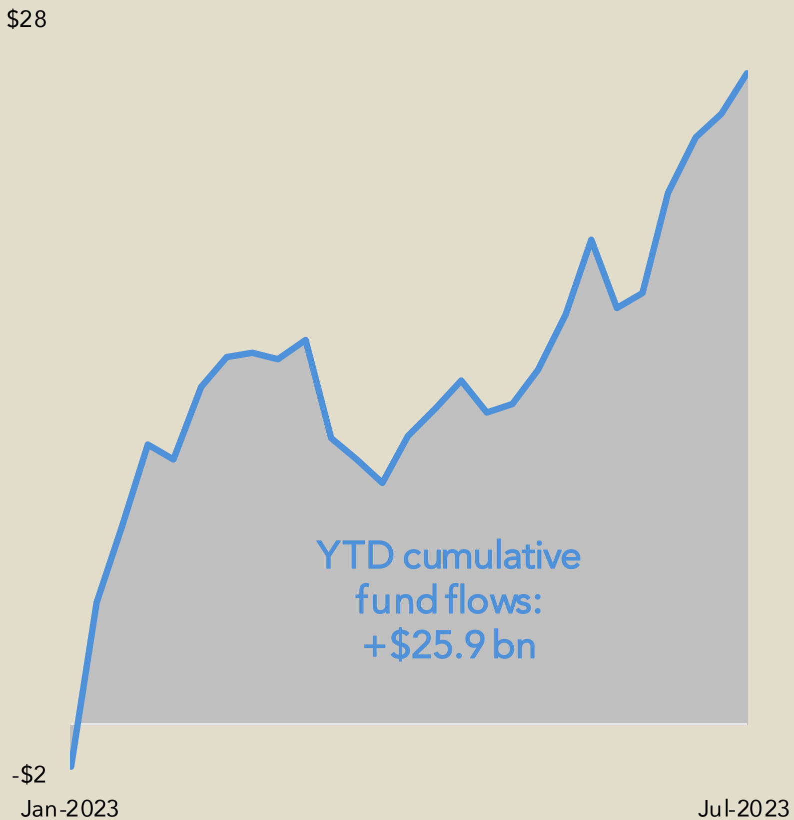



*Source: (1) Bloomberg. Data as of July 11, 2023. ICE BofA index.*

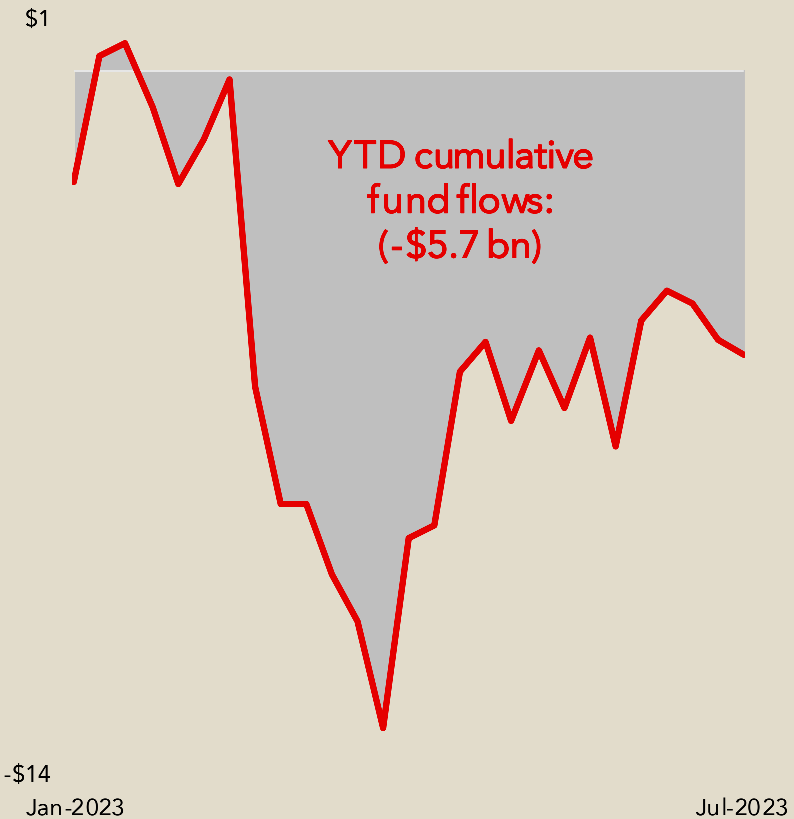
# Strong IG Inflows Accelerated in June

June was a particularly strong month for flows into both investment grade and high yield bond funds. In June, IG inflows were nearly double May's flows. In the high yield space, where flows have been negative year to date, fund flows were positive for just the second month this year.

**IG fund flows, USD bn**




**HY fund flows, USD bn**

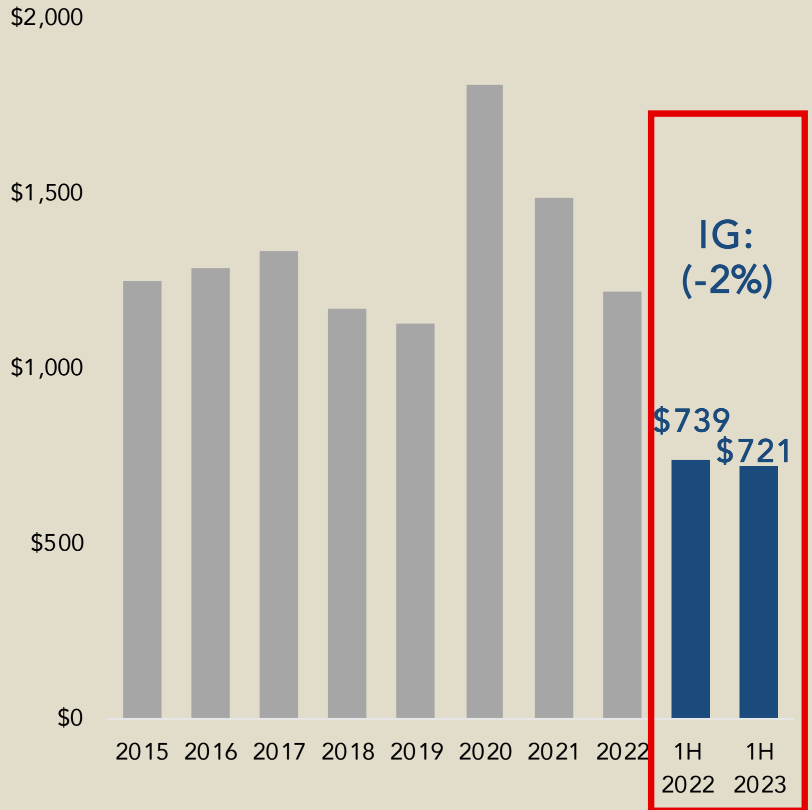



*Source: (1-2) IFR. CreditSights. Data through week ending July 5, 2023.*

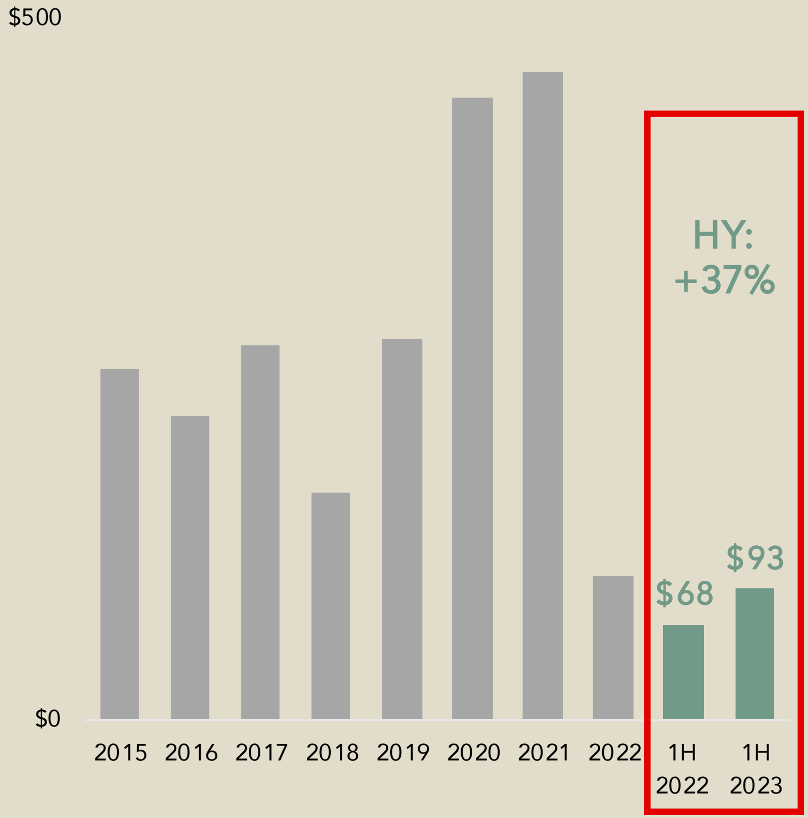
# USD New Issue Market in 1H 2023

After a strong start in Jan-Feb, IG new issue volumes declined sharply with bank sector stress in March-April, down as much as 20% Y/Y after the first 4 months of the year. However, stronger performance in May and June has brought the gap to just 2% below last year's 1H levels. High Yield issuance, on the other hand, was much stronger in 1H 2023 vs. 1H 2022. USD HY issuance volumes are up 37% year-on-year and are just 9% short of 2022's full year volume.

**USD IG new issue, bn**



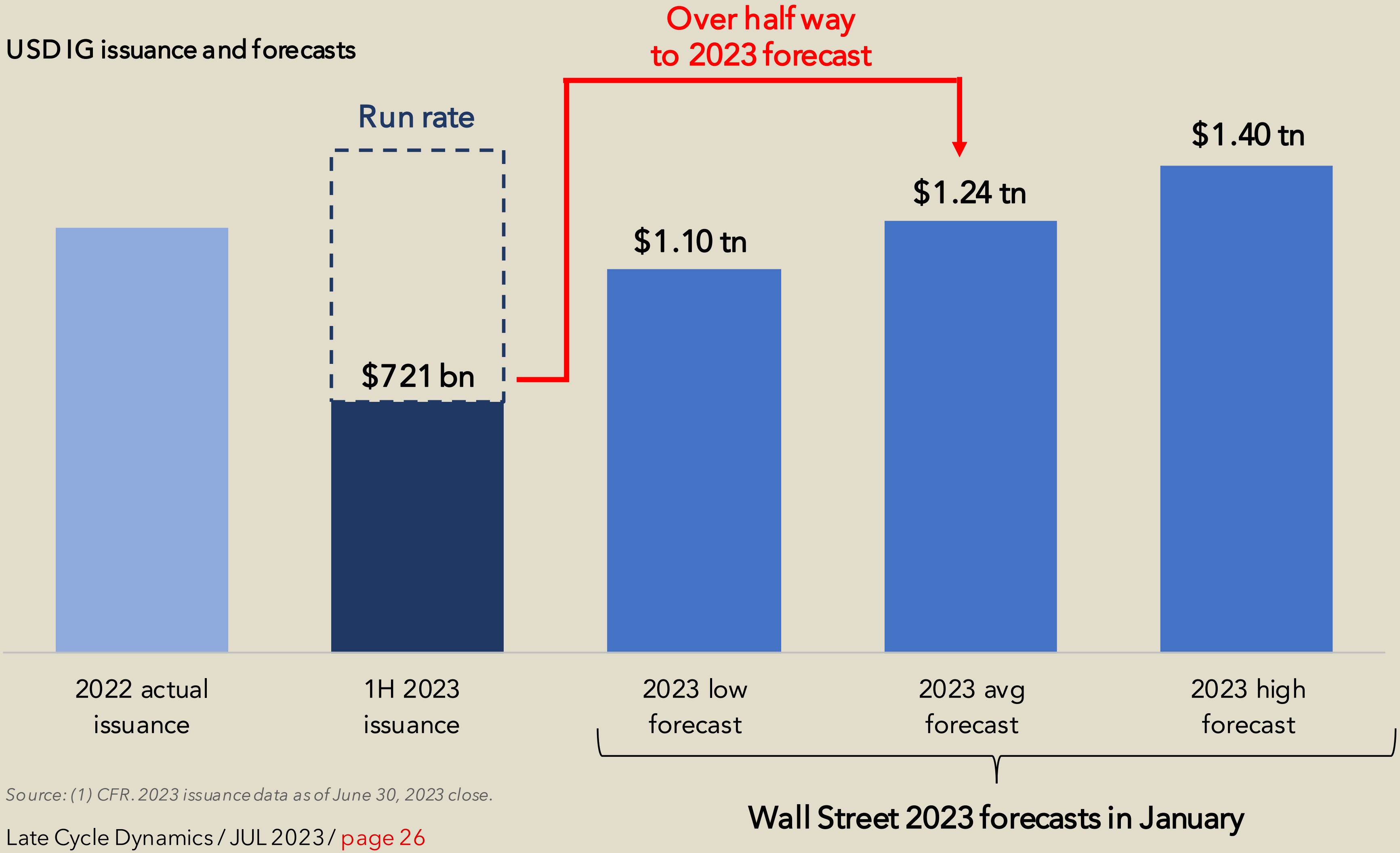

**USD HY new issue, bn**




*Source: (1-2) CFR. Data as of June 30, 2023.*

# Robust USD IG Issuance in 1H 2023

USD IG issuance volumes of $721 bn in the 1H 2023 are nearly 60% toward full year forecasts, and on track for one of the strongest issuance years on record. M&A accounted for ~15% of 1H issuance, above the 5 year average of 11%.

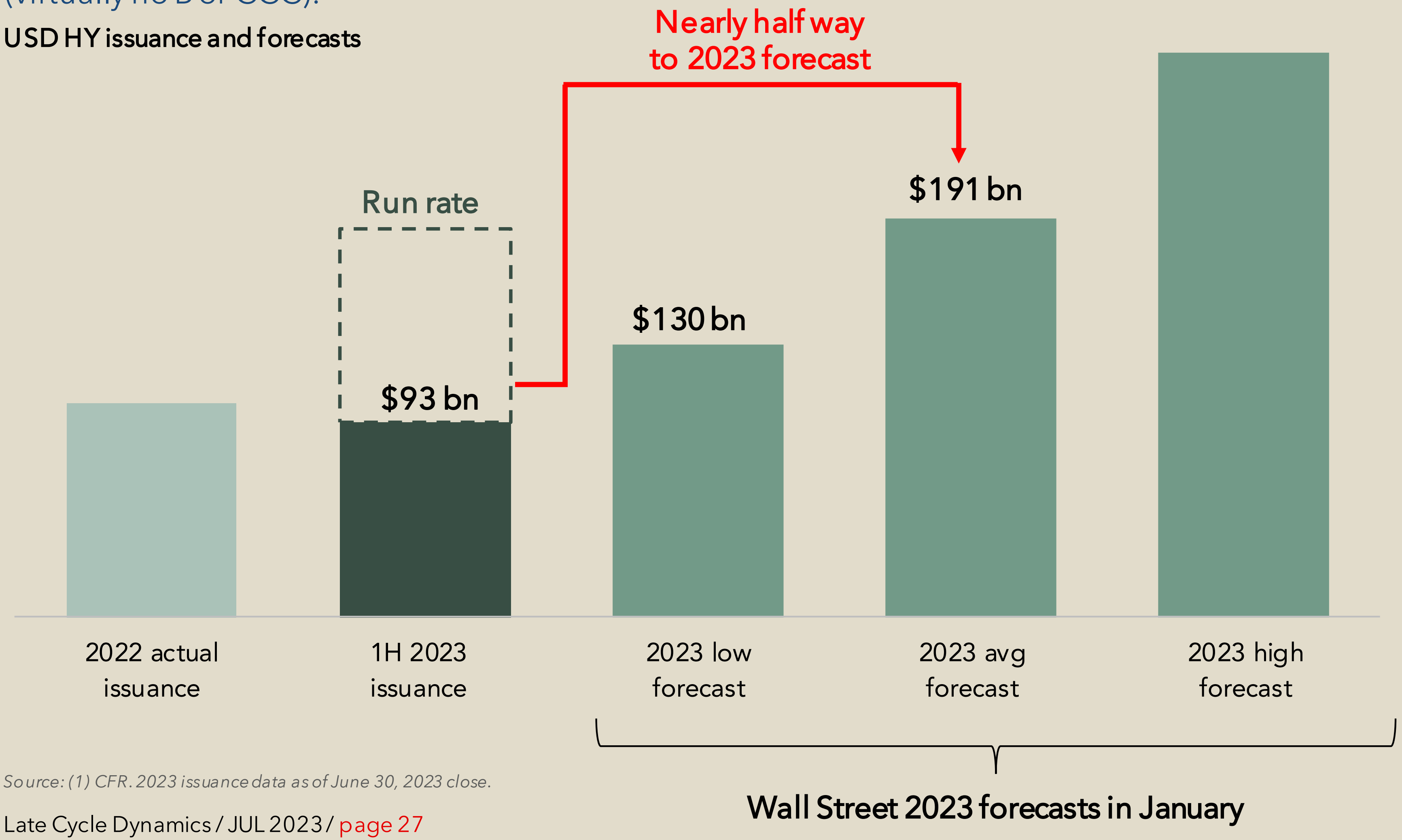



*Source: (1) CFR. 2023 issuance data as of June 30, 2023 close.*

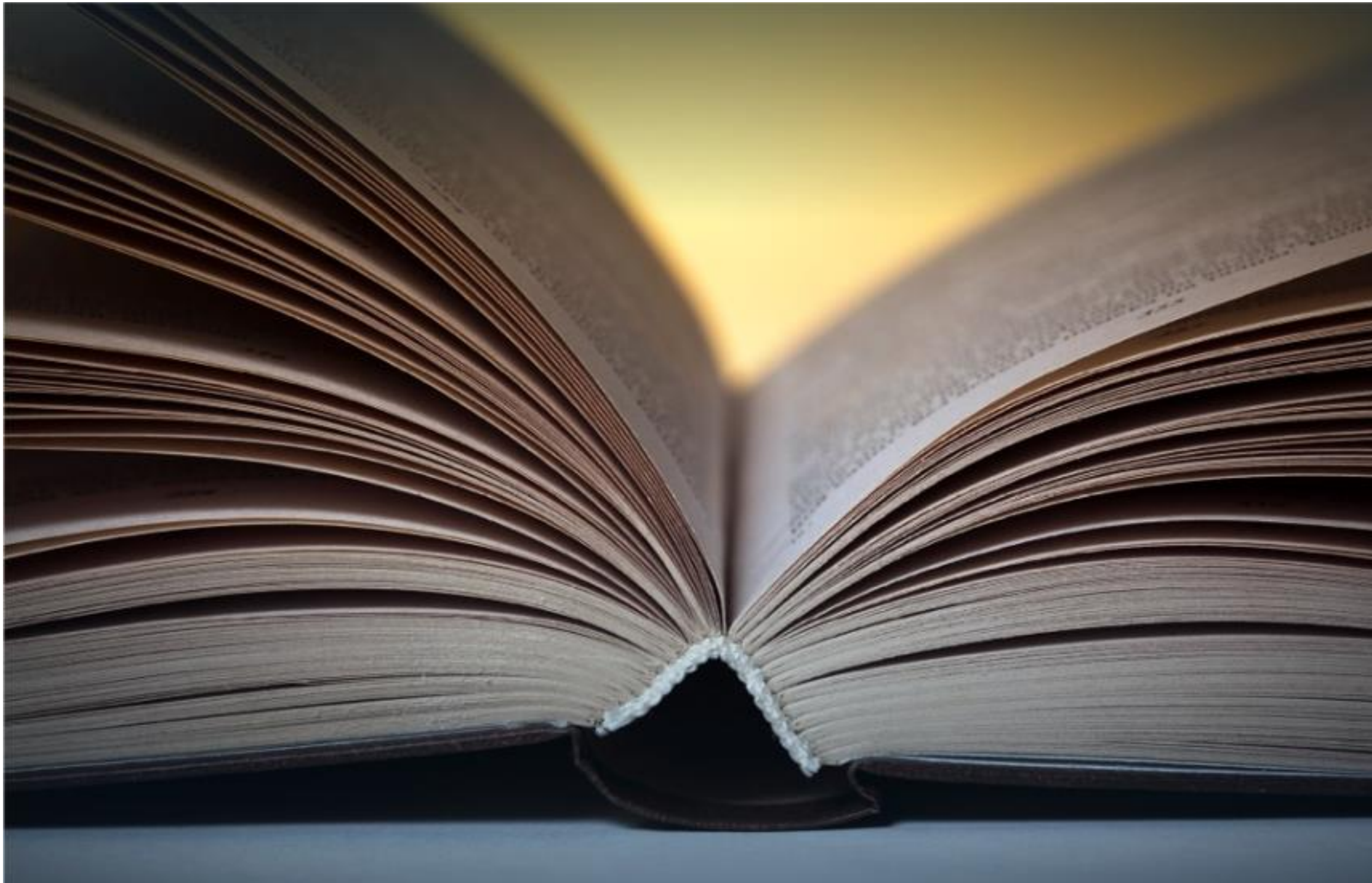
# USD HY Issuance Rebounds from 2022 Lows

Up 37% Y/Y, USD HY issuance volumes of $93bn in the 1H 2023 are on track to meet full year projections and nearly as high as the entire year of HY issuance in 2022. HY Investors have become more selective, with nearly all of 1H 2023 HY issuance from the BB rating category (virtually no B or CCC).

USD HY issuance and forecasts




*Source: (1) CFR. 2023 issuance data as of June 30, 2023 close.*



# 4. Credit Spreads Vulnerable to Widening

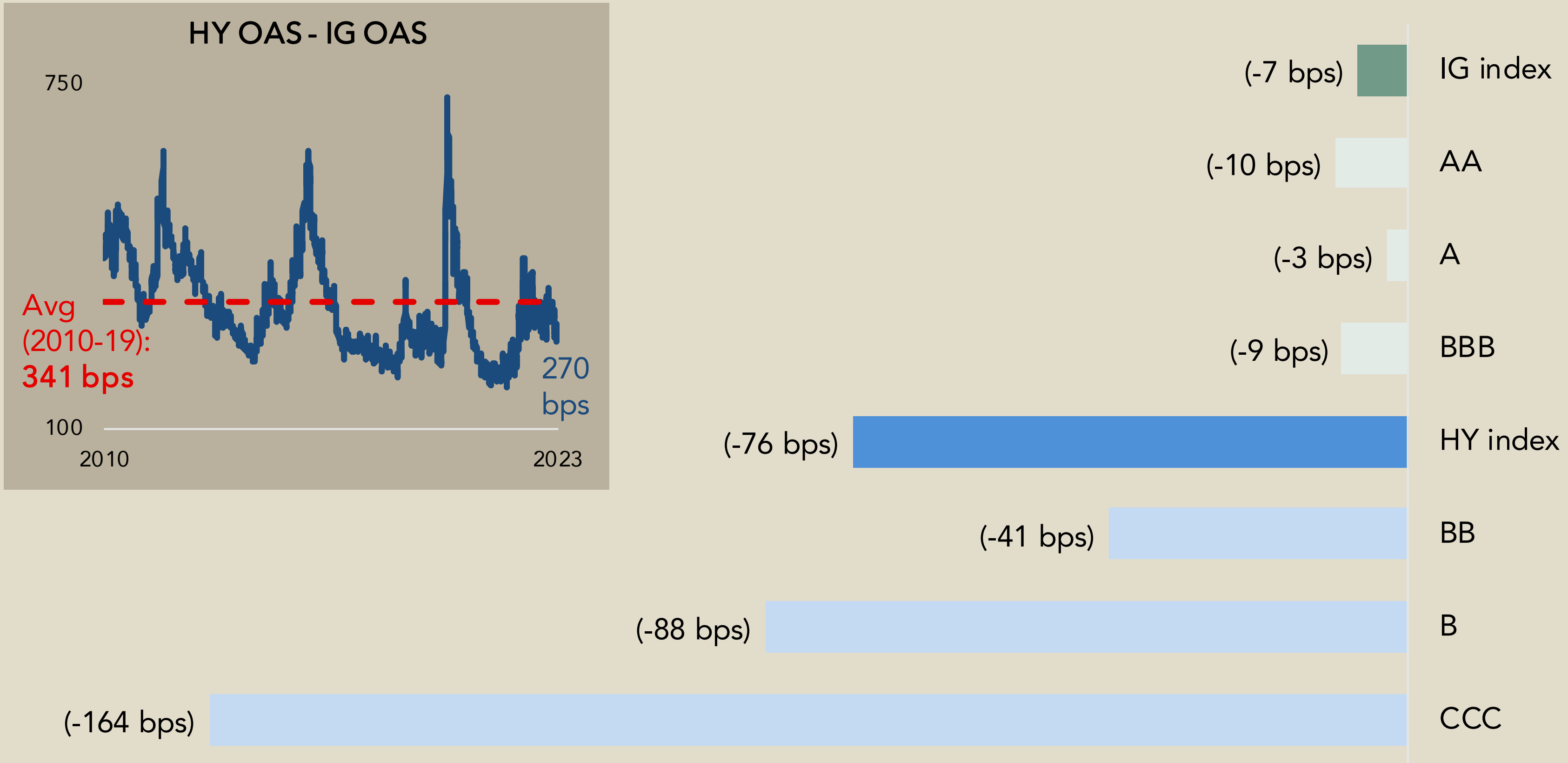
**“History never looks like history when you are living through it”**

John W. Gardner, US Secretary of Health & Education (1965-68),
& only Republican in President Lyndon Johnson’s Cabinet

# USD Credit Spreads Not Pricing Recession

IG and HY spreads are not pricing in near term recession or an imminent spike in credit default risk. Despite higher volatility since mid-2022, credit spreads tightened across the rating spectrum in 1H 2023. The tightening in the lower rated CCC market has been particularly pronounced.

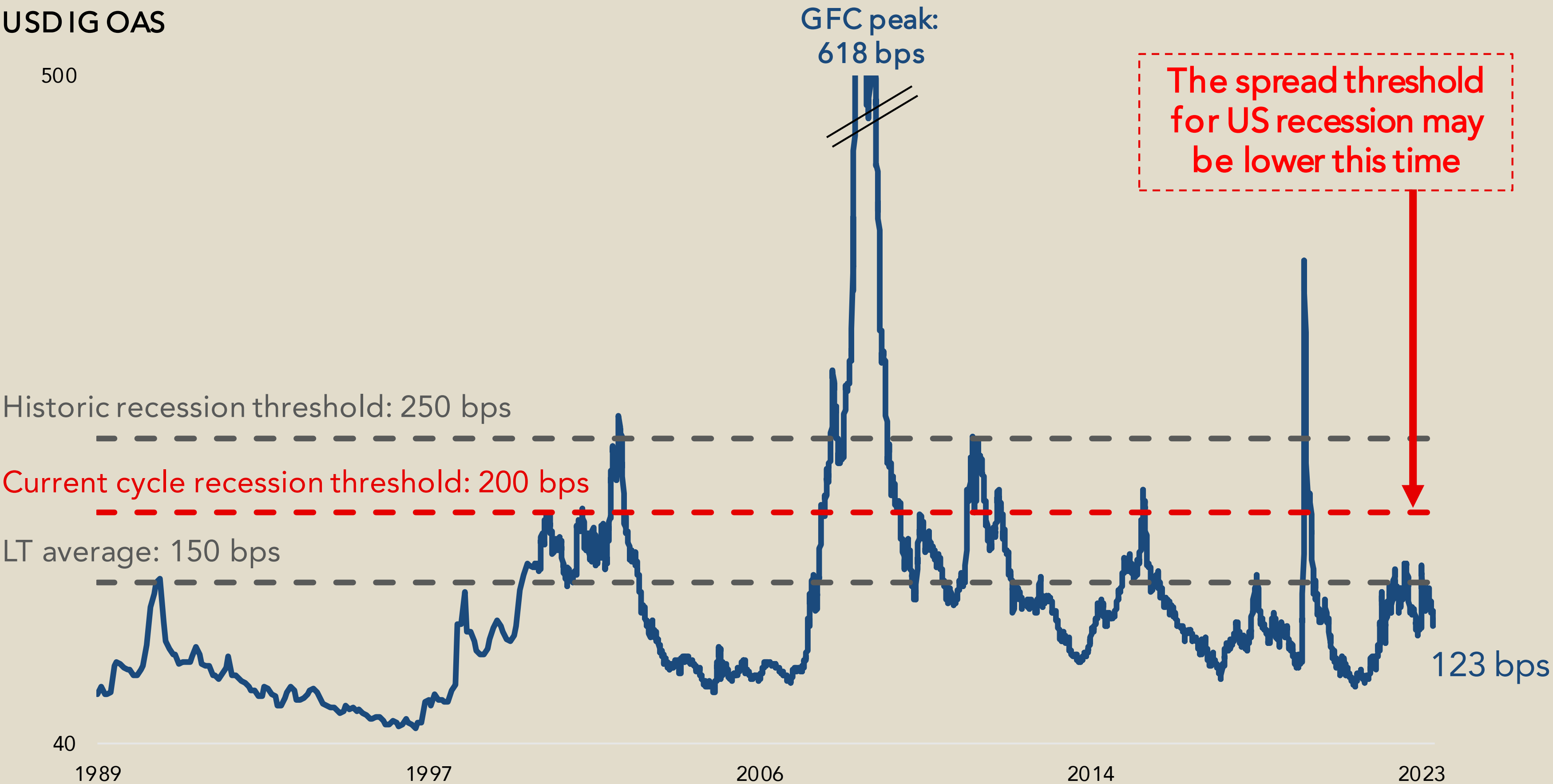
**Change in spreads (1H 2023)**




*Source: (1-2) Bloomberg. Data as of July 12, 2023.*

# IG Credit Spreads Below LT Average

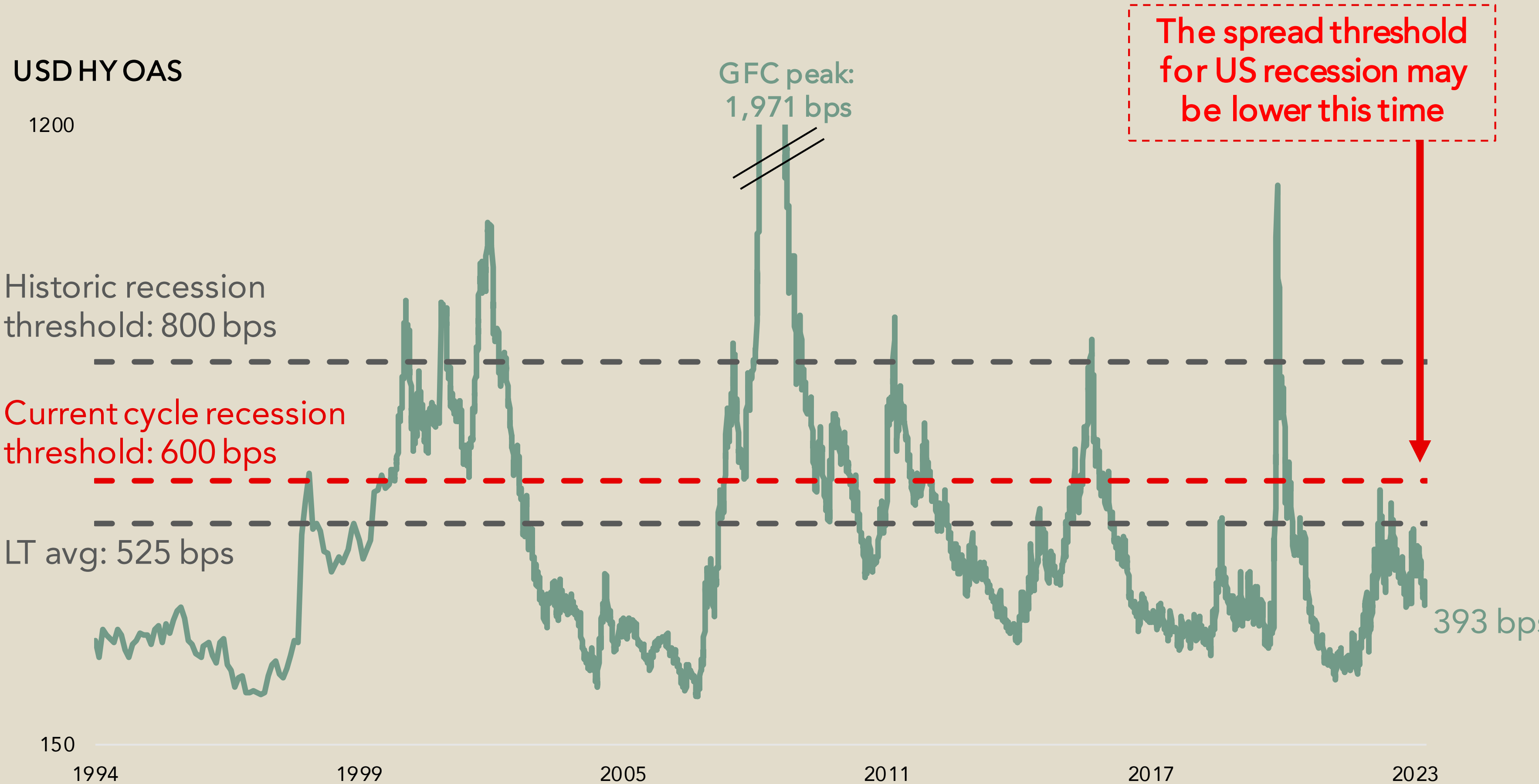
Based on data going back more than three decades, IG & HY credit spreads are trading below their long-term averages and well below recession threshold levels. While IG spreads historically widen above 250 bps during US recessions, the strength of corporate balance sheets and a potentially "mild" recession suggest that 200 bps may be the more likely threshold for the next US recession




*Source: (1) Bloomberg. Data as of July 12, 2023.*

# HY Credit Spreads Also Below LT Average

HY spreads traded remarkably tight in the 1H 2023 despite bank sector stress and Fed tightening. While HY spreads historically widen above 800 bps during US recessions, the strength of corporate balance sheets and a potentially "mild" recession suggest that 600 bps may be the more likely threshold for the next US recession.

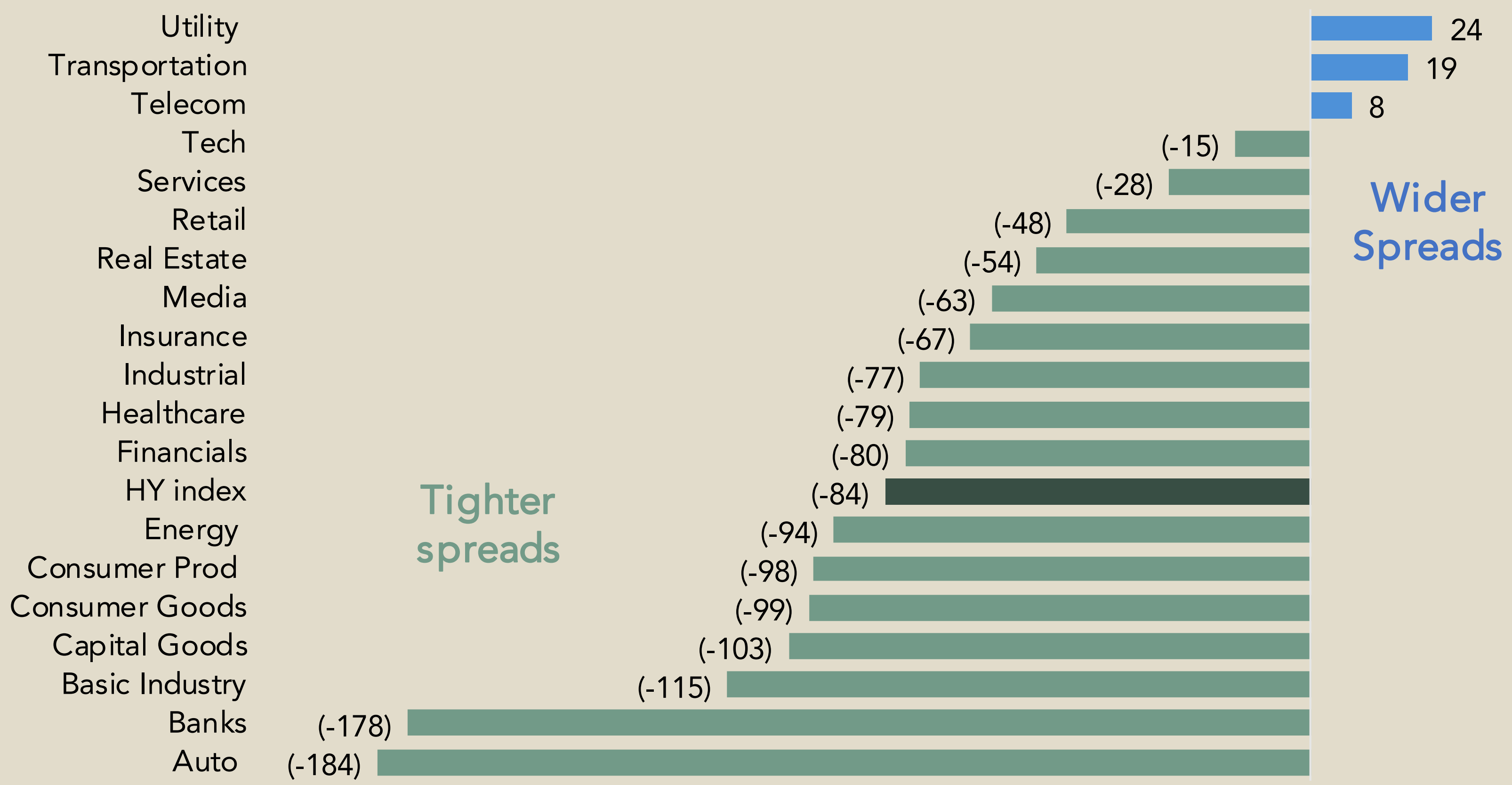



*Source: (1-2) Bloomberg. Data as of July 12, 2023.*

# HY Spreads Tightened Across Most Industries

Despite volatility in 1H 2023, spread performance was relatively strong across industry segments. In the high yield market, spreads have tightened this year in 16 sectors and widened in only three.

**USD HY change in spread, by sector, bps (YTD)**

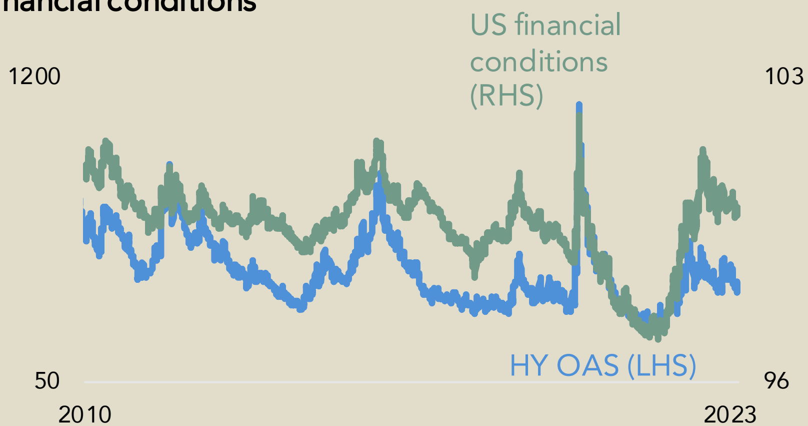



*Source: (1) Bloomberg. Data as of July 7, 2023.*

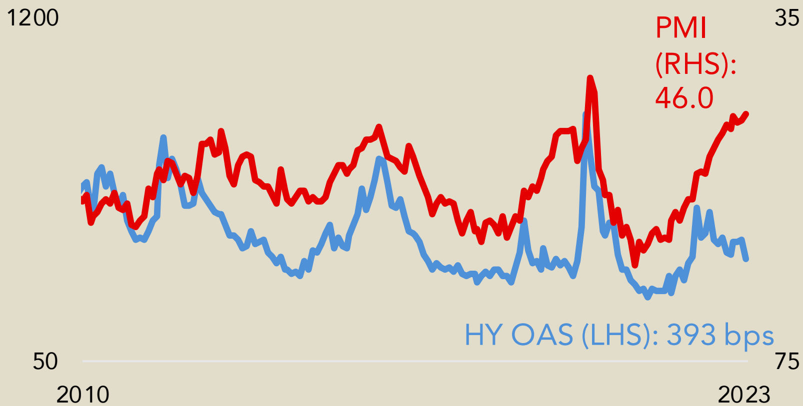
# HY Spreads Vulnerable to Widening

Economic and market metrics suggest that HY spreads are vulnerable to widening as US recession comes closer into view

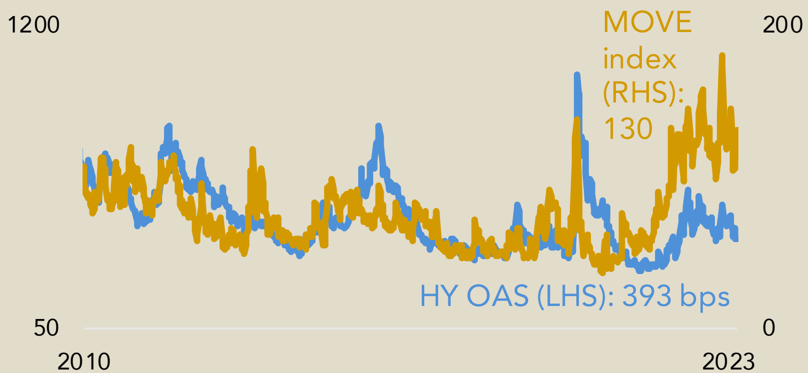
### HY spreads currently disconnected from tighter financial conditions



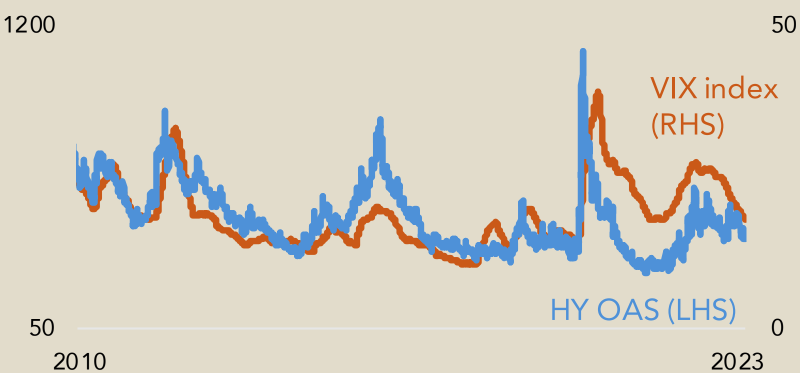

### HY spreads currently disconnected from weaker PMI data




### HY spreads currently disconnected from US rate volatility




### HY spreads and equity volatility currently more aligned

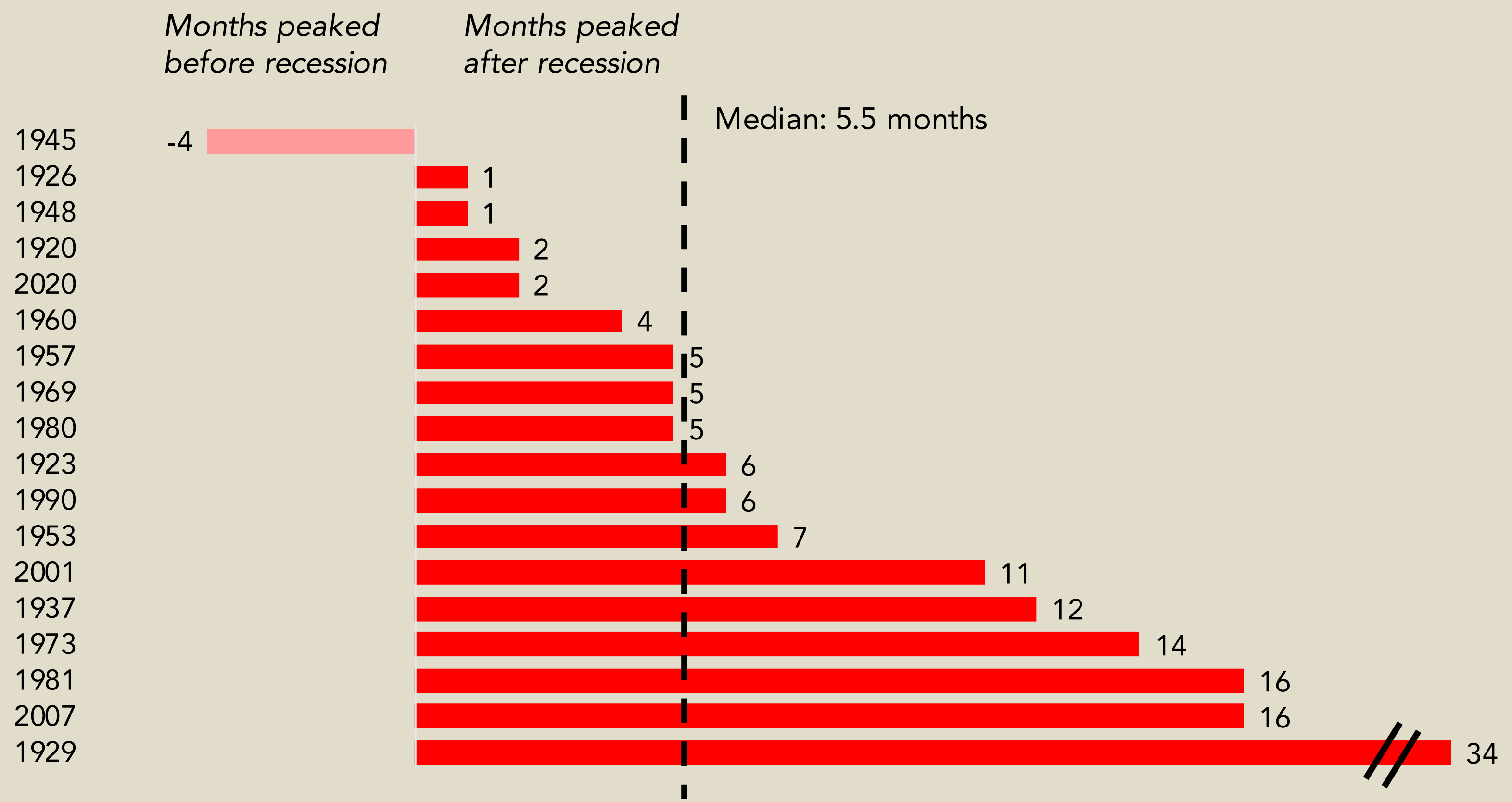



*Source: (1-4) Bloomberg. Data as of July 12, 2023. PMI is manufacturing PMI. VIX is 100 day moving average.*

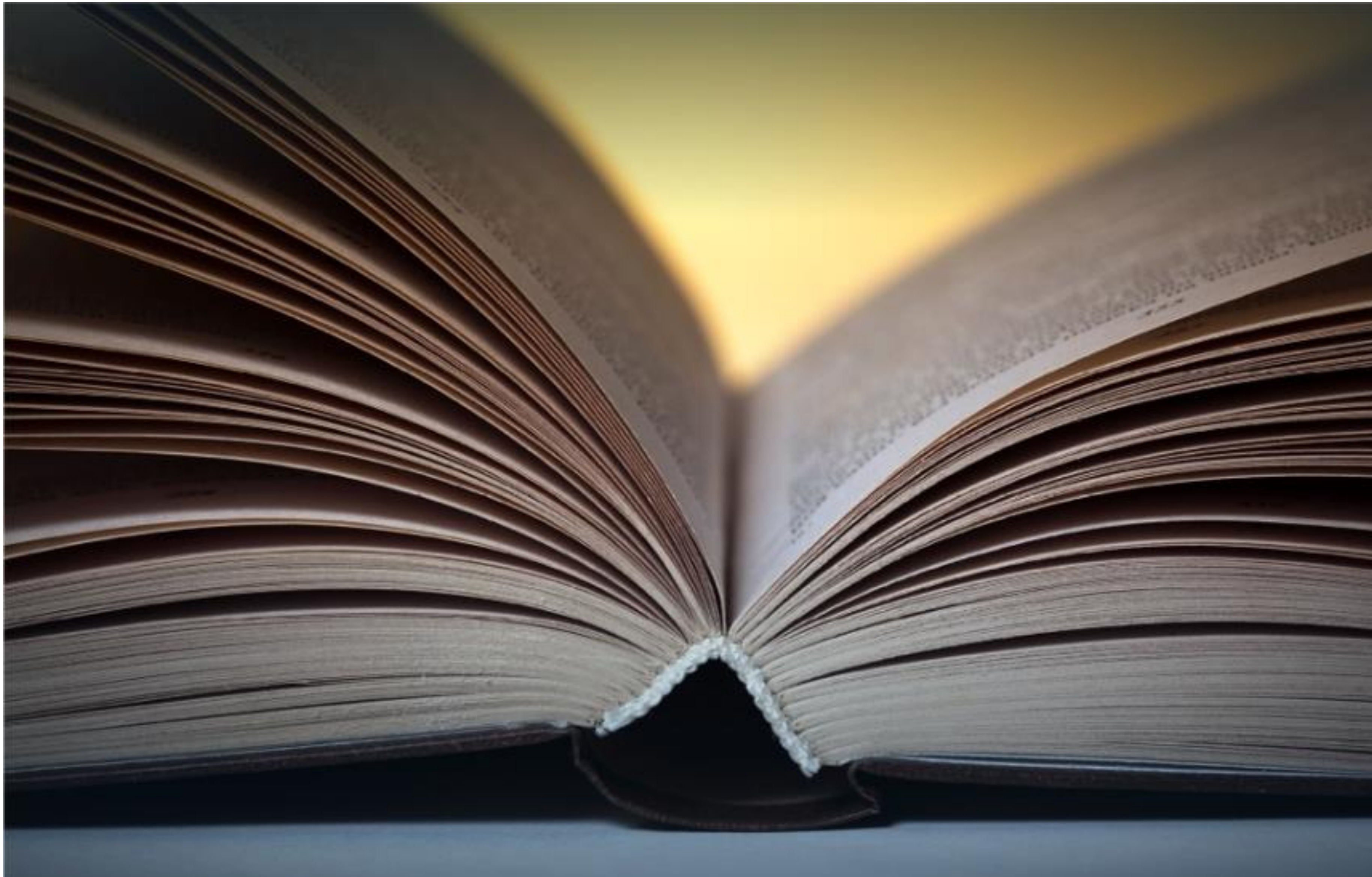
# Spreads Typically Peak After Recessions Start

In nearly 20 US recessions over the last 100 years, USD corporate credit spreads peaked BEFORE the recession on only one occasion. As such, we see high risk that spreads move wider late in 2024.

**# of months after recession starts to spread peak**




*Source: (1) Capital Economics, "We Think US Corporate Bond Spreads Will Widen Again" (December 12, 2022). Shiller, NBER, Bloomberg, Refinitiv. Spreads are derived using the OAS of ICE BofA (2000-today) or Moody's seasoned Baa-rated US corporate bond yield (1962-1999) or the NBER US yields on lowest rating corporate bonds (1920-1961).*



# 5. Late Cycle Dynamics in Credit Markets

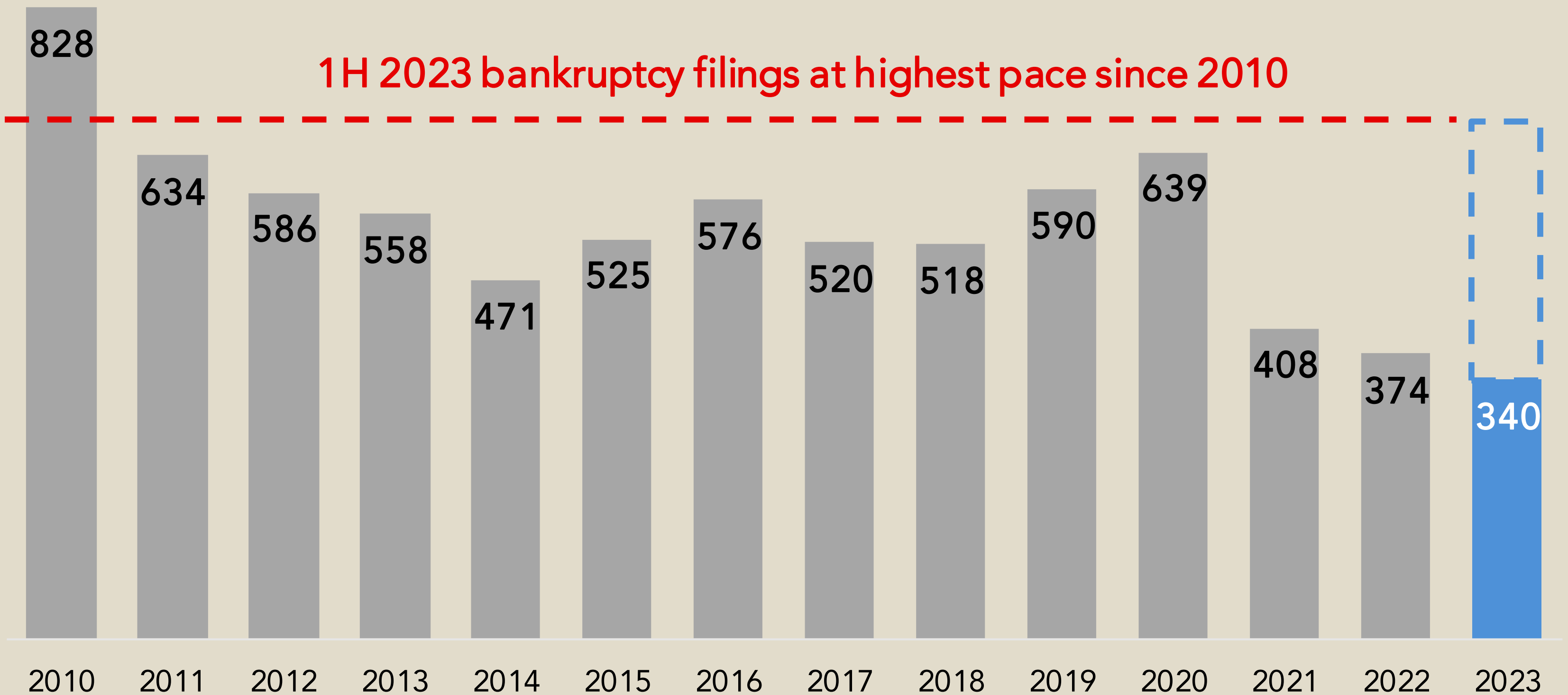
**“A revolution is not a dinner party.”**

Mao Zedong, Founder of the
People’s Republic of China (1893-1976)

# US Bankruptcies Rising

Currently tighter than historical averages, corporate credit spreads are not reflective of pressures in the real economy (weakening demand, higher inflation, higher borrowing costs), as evidenced by a surge in US bankruptcies in 1H 2023 to the highest levels since 2010. Consumer companies have accounted for 25% of filings, followed by healthcare (15%) and financials (11%).

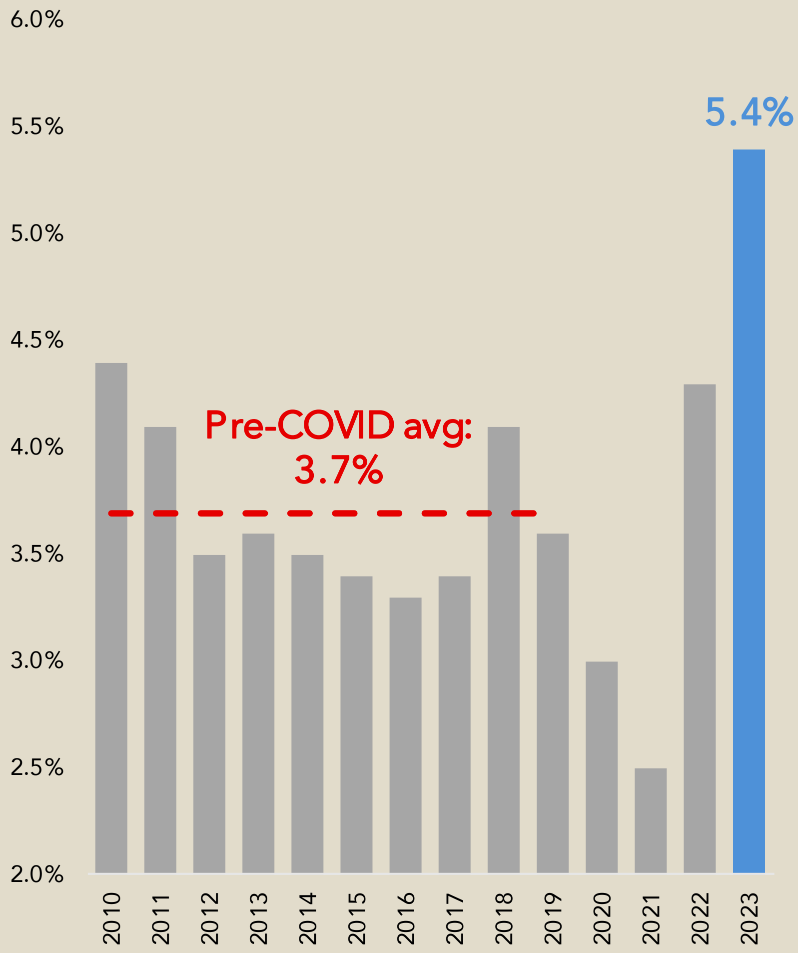
US bankruptcy filings by year



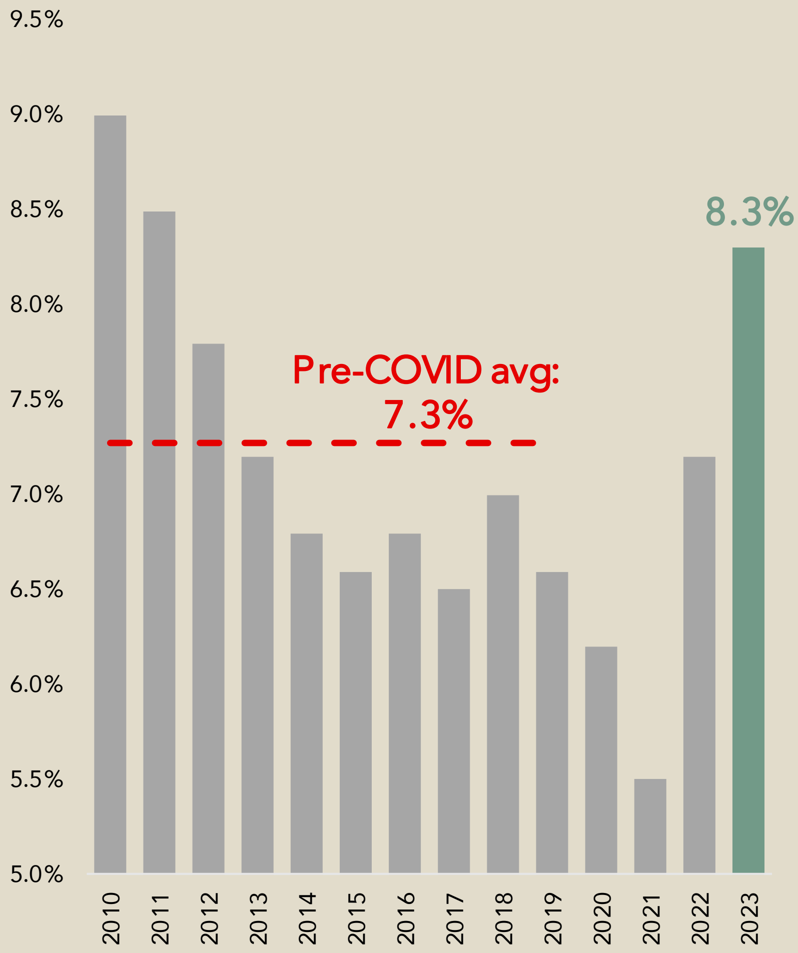

*Source: (1) S&P Global Market Intelligence – covered US companies that announced bankruptcies between January 2010 and June 30, 2023.*

# Higher Rates Keep Persistent Pressure on Borrowing Costs

## US IG new issue coupons




## US HY new issue coupons

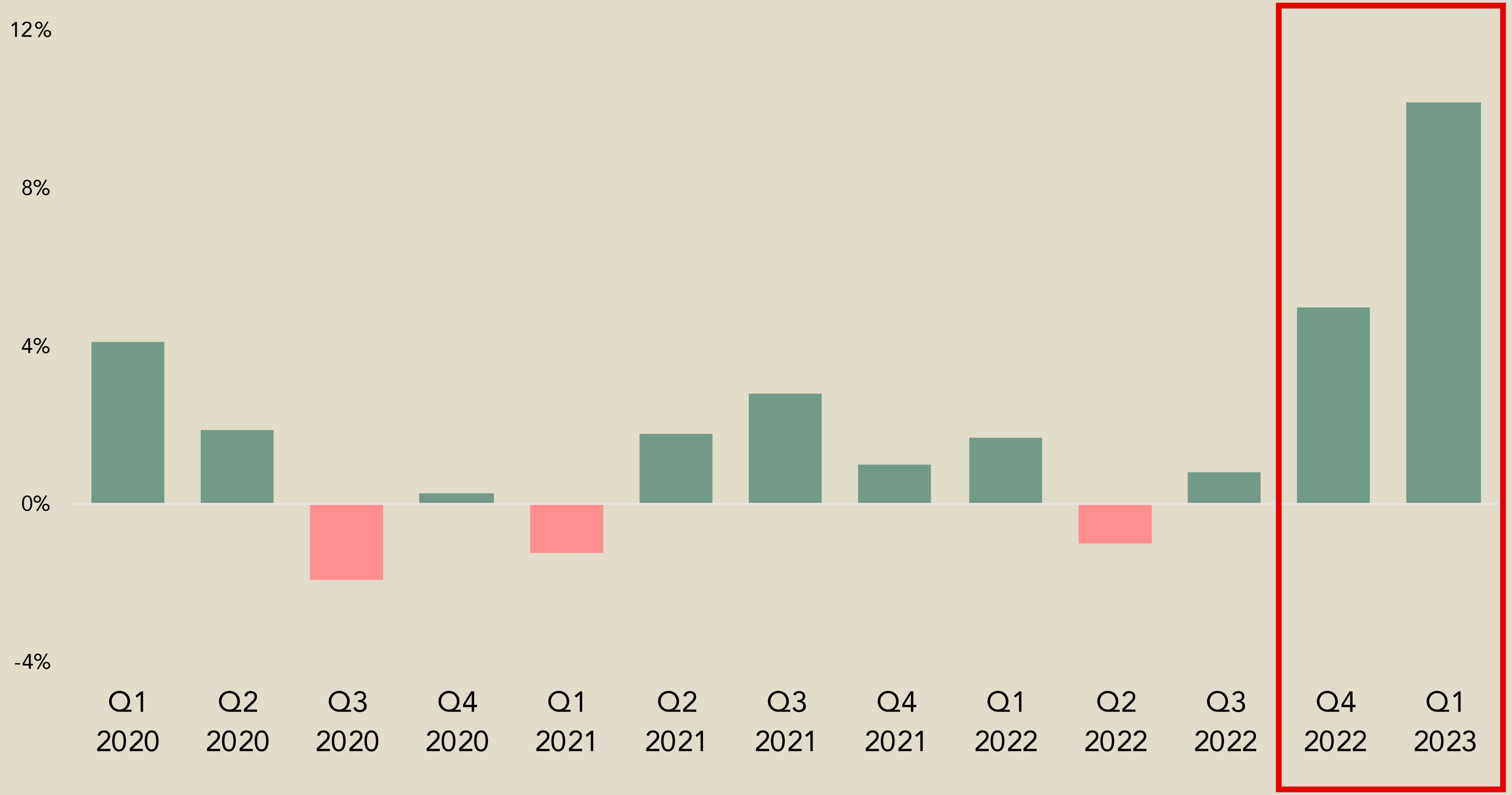



*Source: (1-2) CreditSights. FactSet. ICE Data Indices. Data as of June 30, 2023.*

# Cash Interest Expense Obligations Rising

According to analysis from S&P, cash interest payments from corporates rose sharply in late 2022 and Q1 2023. As rates remain high, and rate hedges roll off, the trend is likely to continue. For the most speculative grade companies with floating rate debt, interest rate expense can as much as double.

**Percentage change in cash interest paid**

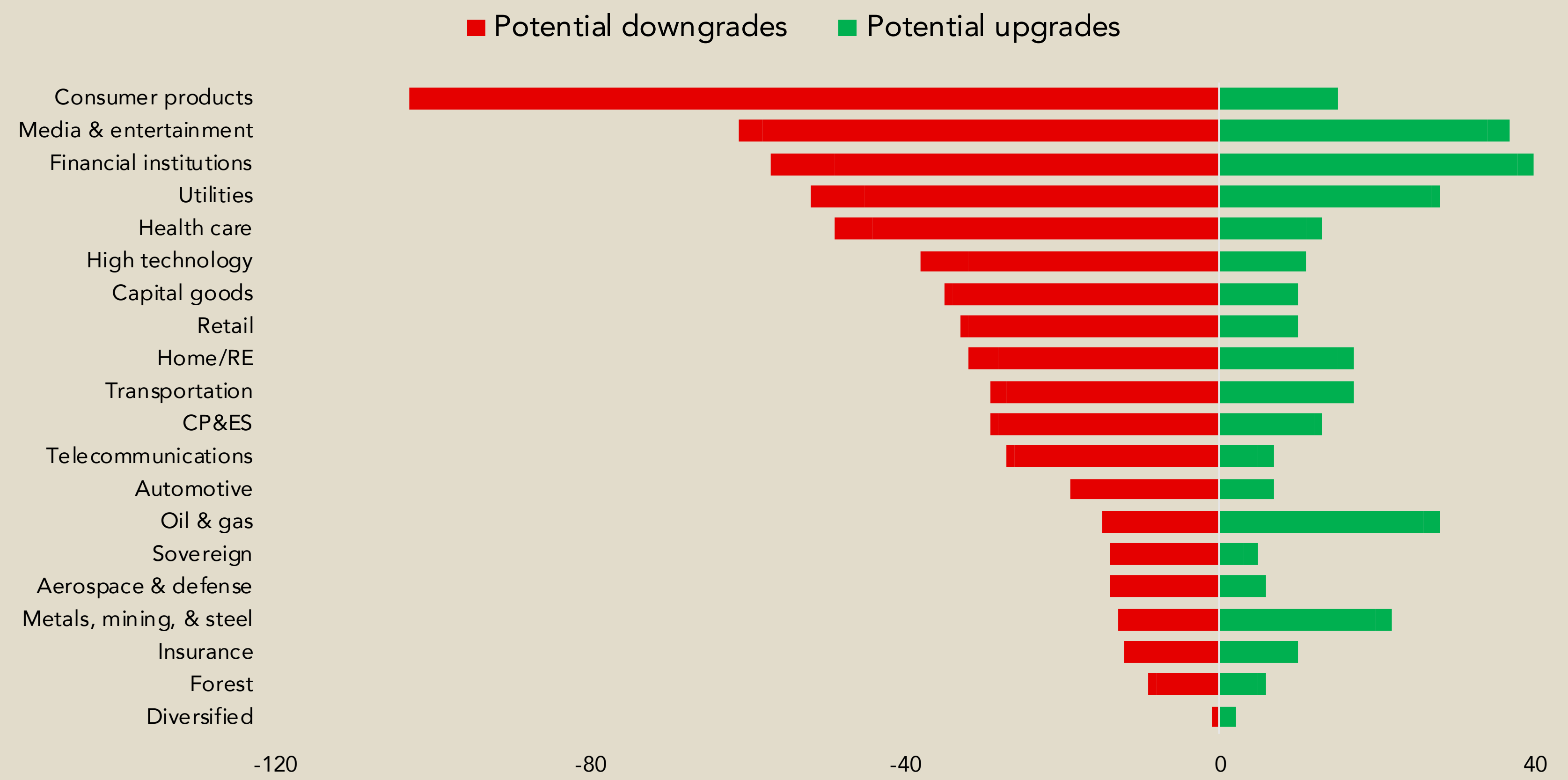



*Source: (1) S&P, "Credit Conditions North America Q3 2023: Risks vs. Resilience" (June 27, 2023).*

# Ratings Downgrades Outpacing Upgrades

Rating Agency S&P has potential ratings downgrades outpacing potential upgrades at a 2-year high, with consumer products, media and financial institutions most vulnerable.

### Global potential downgrades and upgrades

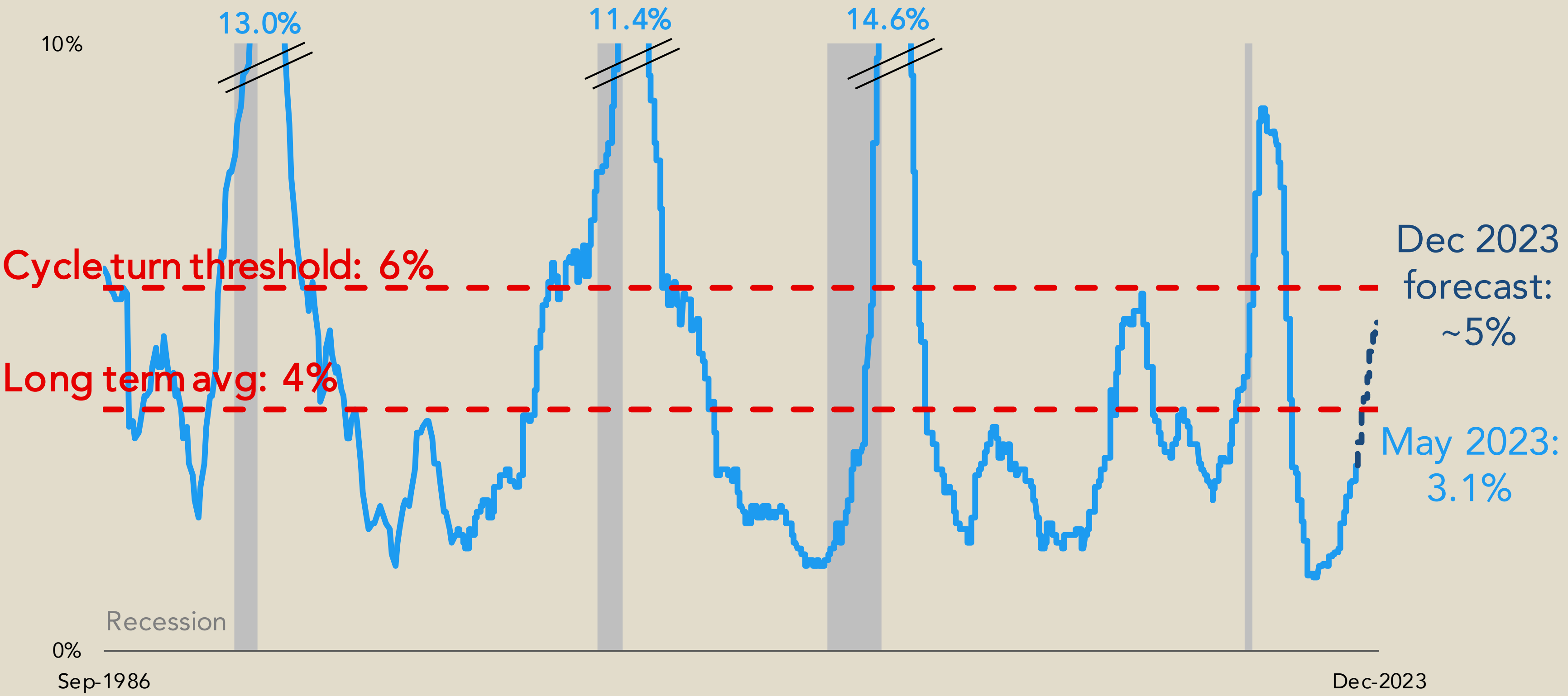



*Source: (1) S&P, "Credit Conditions North America Q3 2023: Risks vs. Resilience" (June 27, 2023).*

# The Credit Default Cycle Has Begun to Turn

After reaching historically low levels in early 2022, default rates have begun to move higher. Over the last 12 months, 20 USD HY Issuers defaulted on $34bn of bonds. As default rates typically "lag" the economic cycle, default rates may not peak until late 2024 or early 2025. Consumer facing businesses, many of which are rated CCC, are notably vulnerable with close to 30% of the sector on negative outlook or Credit Watch negative.

**US speculative grade default rate**
(includes HY & lev loans)

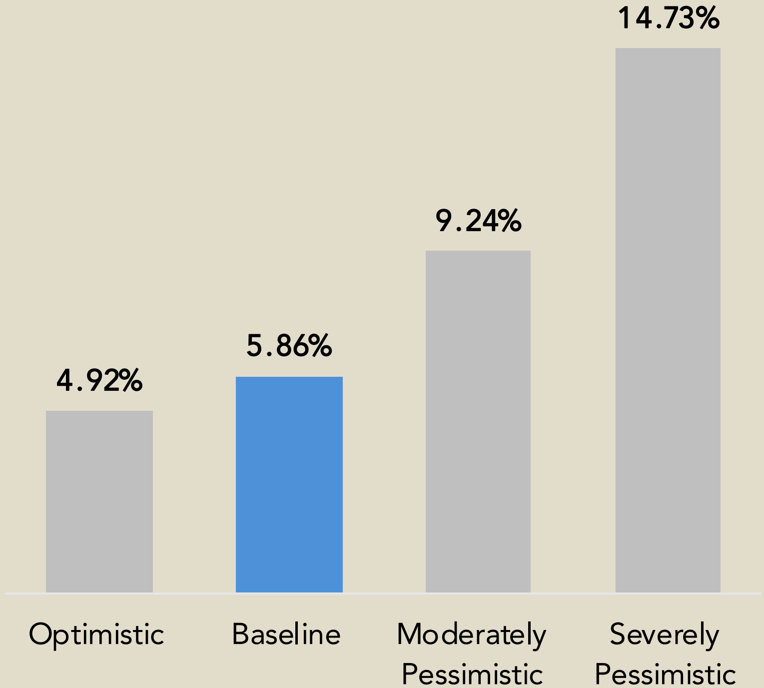



*Source: (1) Moody's, "Default Trends – Global May 2023 Default Report." Default rate is trailing 12 months US speculative grade default rate.*

# Peak Defaults May Be Lower This Cycle

For the market in aggregate, we expect lower peak defaults in the current cycle given the strength of post COVID balance sheets following several years of high profits, significant pre-funding and prevalence of covenant-lite bonds. Vulnerable sectors will include those with unsustainable capital structures, high leverage, exposure to floating rate debt, less recession proof sectors and capital intensive businesses with greater competition and margin pressure. Private debt markets with stricter covenant regimes are likely to experience higher default rates.

**Moody's speculative grade peak default rate forecast scenarios**




## Drivers of Lower Peak Defaults in Current Cycle

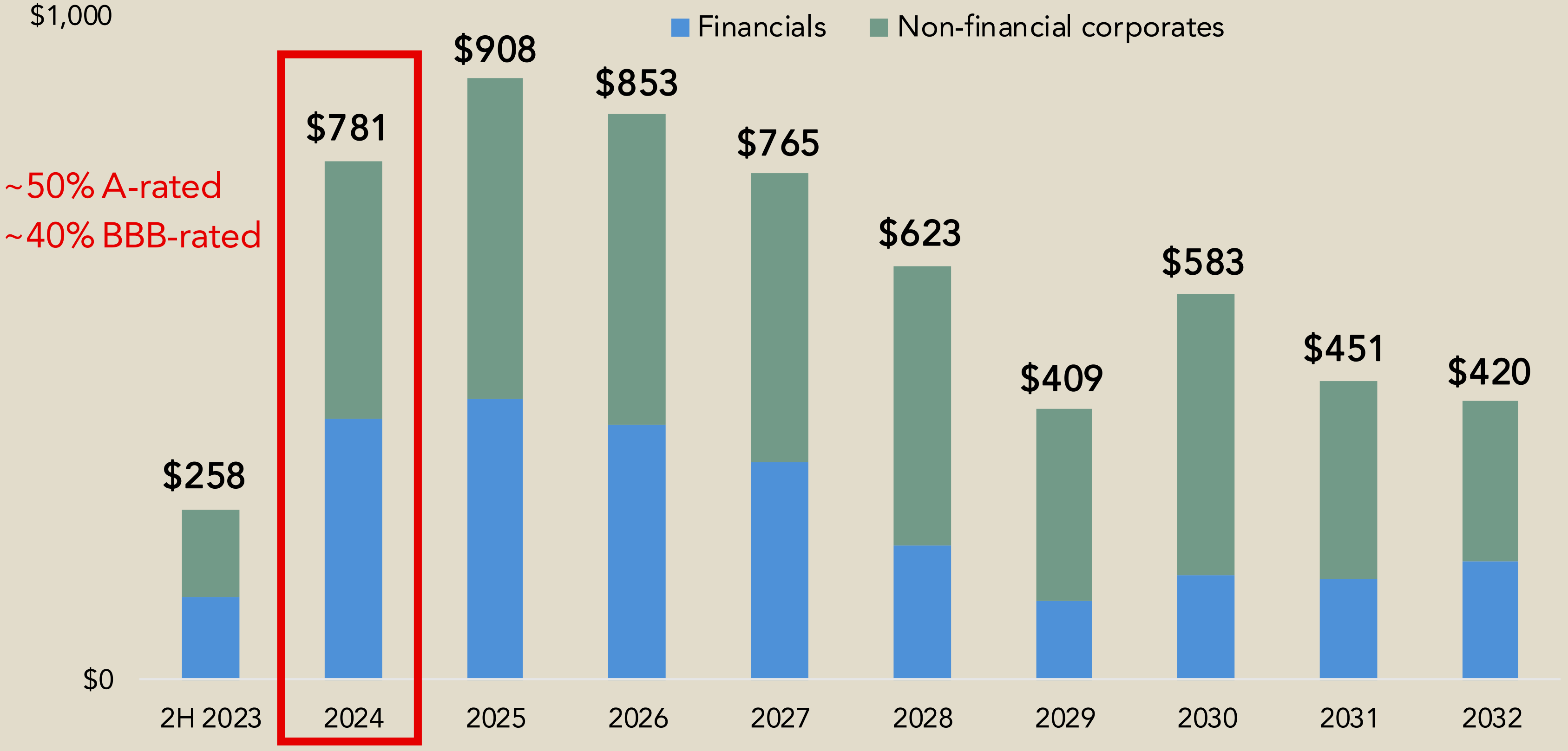
- Potentially mild recession
- Prevalence of covenant-light (fewer triggers)
- Low 2023-24 maturity walls
- Significant pre-funding
- High cash balances, strong interest coverage ratios
- Strong, well capitalized banking system

*Source: (1) Moody, "Default Trends Global Report – May 2023." Peak default rate for Baseline and Optimistic scenarios is April 2024, for Pessimistic scenarios is May 2024.*

# IG Maturity Walls Elevated in 2024 & 2025

Refinancing is typically the largest share of annual USD investment grade issuance. At the start of 2023, estimated maturities for the year were roughly $600 bn. Today, approximately $250 bn of maturities remain for 2H 2023 and a significantly larger $750 bn in 2024. Just over half of these near-term maturities are higher rated, shorter-dated financial sector bonds.

**IG maturity profile, USD bn**

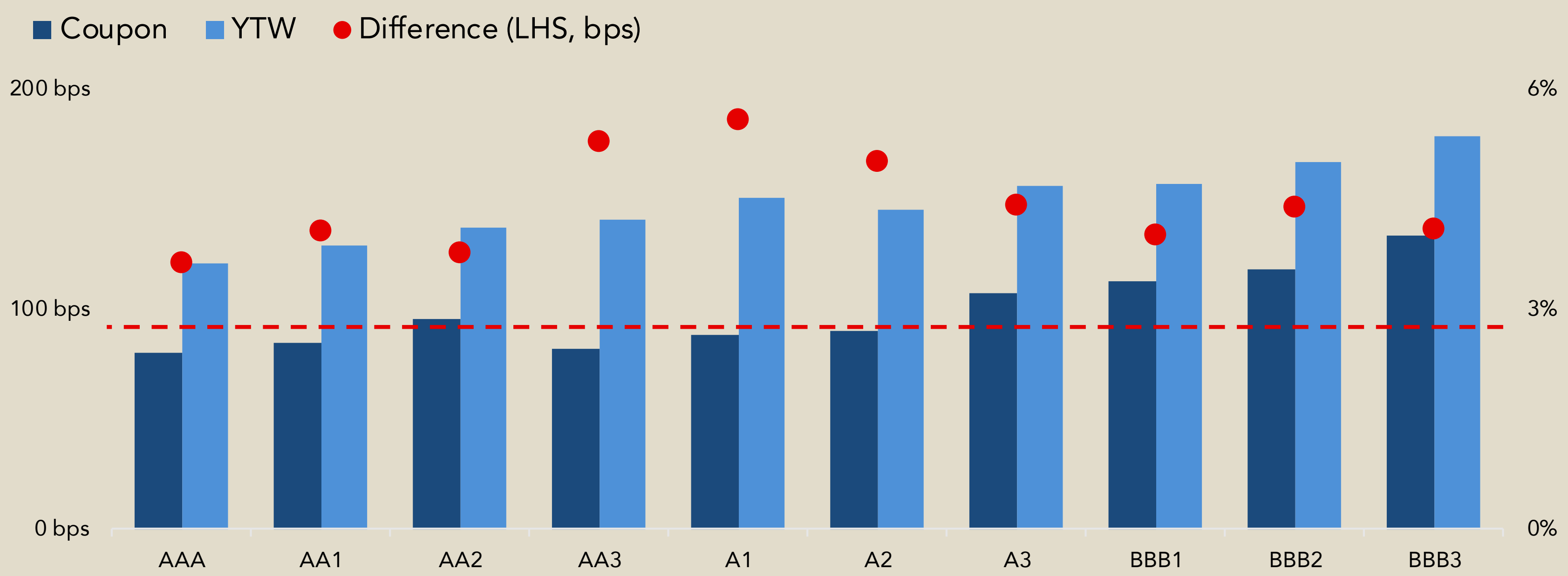



*Source: (1) CreditSights, "US IG New Issues for '23 and a First Look at '24."*

# Higher IG Refinancing Costs

In the USD investment grade market, current yields imply refinancing costs roughly 150 bps higher than current coupons for debt maturing between 2H 2023 and 1H 2025. Just over half of near-term maturities are in the financial sector where valuations are still recovering from the regional-bank driven sell-off earlier in the year. With the market repricing for a "higher for longer" rate environment, investment grade companies may be facing higher funding costs at the same time that maturity walls loom larger.

**Coupon vs. current YTW by rating for near term maturities (2H 2023 – 1H 2025)**



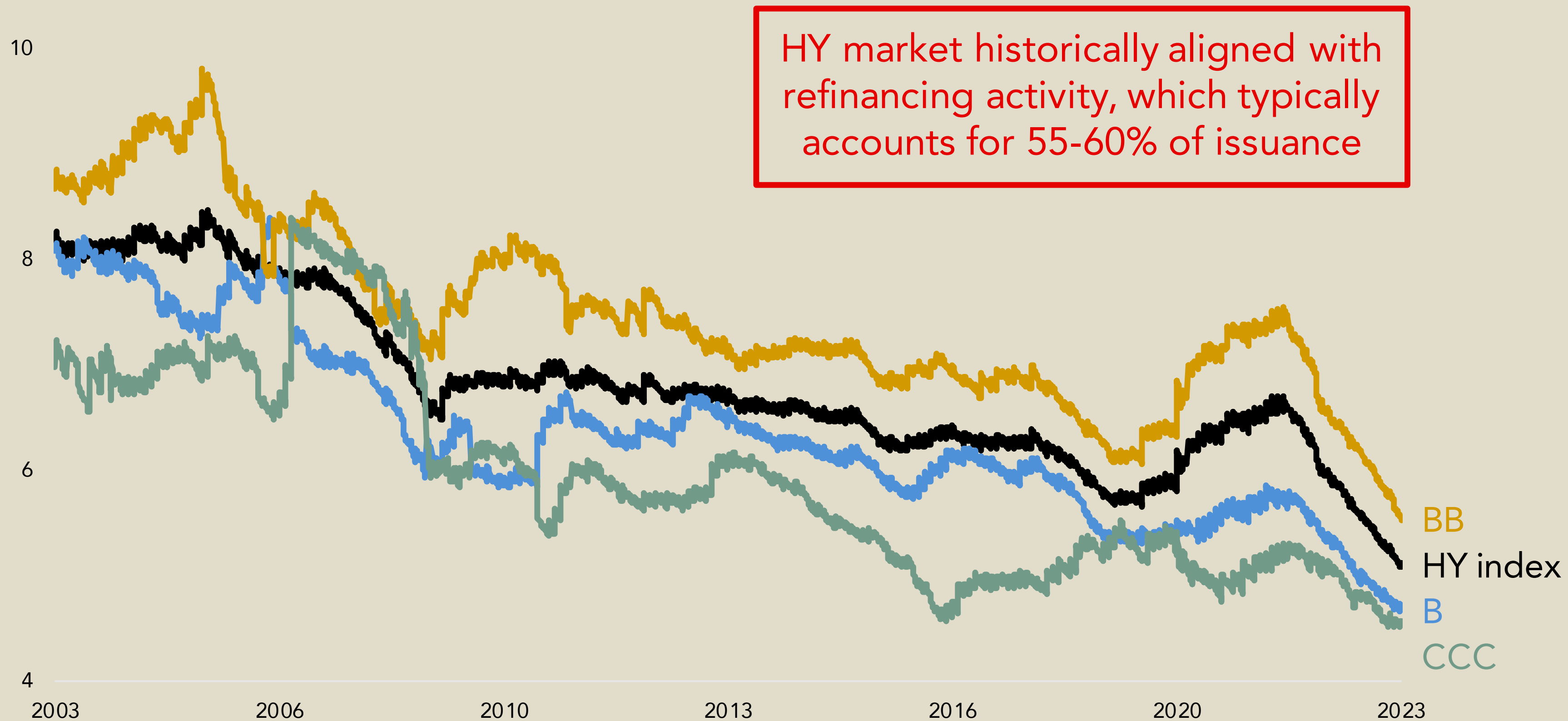

IG refinancing costs ~150bp higher than existing coupons

*Source: (1) CreditSights, "US IG New Issues for '23 and a First Look at '24."*

# High Yield Maturity Profile at Historic Lows

By historic standards, the average debt maturity profile for the USD high yield market has been trending lower on a multi-year bases at a time when the credit cycle is increasingly mature.  As credit progresses further toward late cycle, pressure on earnings, margins and credit metrics will weigh more heavily on refinancing obligations.

**Years to final maturity, by rating**




*Source: (1) Oxford Economics. "Fixed Income – Conditions Ripen for a Rotation to US IG Credit." Bloomberg. Data as of July 12, 2023. ICE BofA data.*

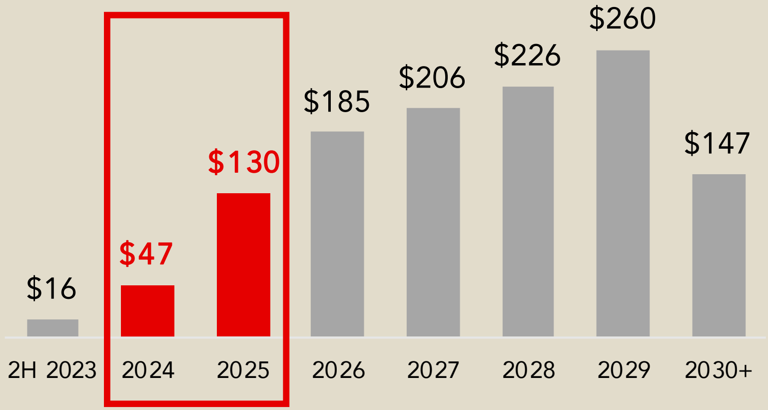
# HY Maturity Wall Looms Large in 2025

Over 2024 and 2025, the high yield and leverage loan markets face a maturity wall of approximately $175 and $300 billion, respectively. In the months ahead, look for companies to take advantage of resilient credit markets to opportunistically pre-fund their maturities before large debt burdens become current on corporate balance sheets. As the cycle progresses, corporates will have to navigate a more complicated economic and financing environment.

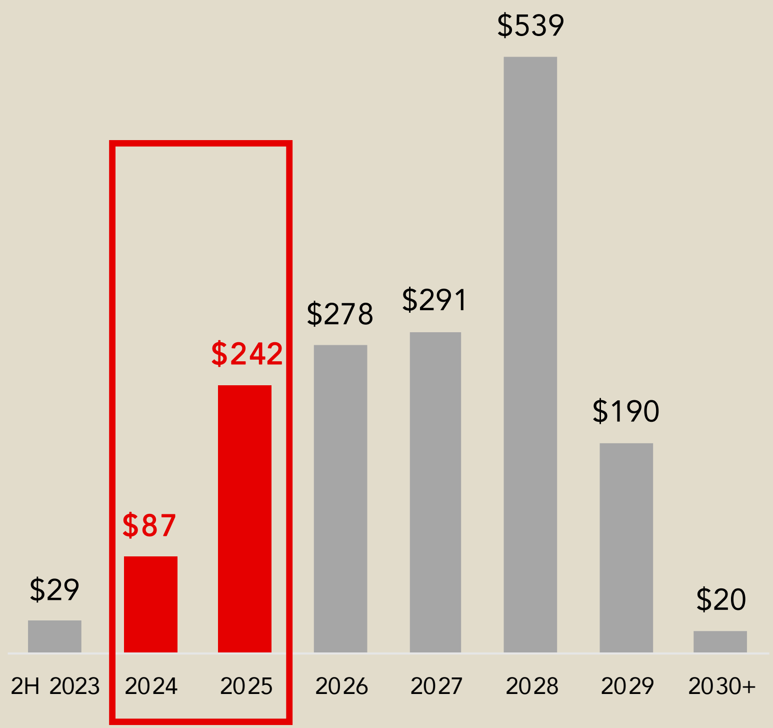
**HY maturity profile, USD bn**

2023-24: Mostly BB issuers

2025-26: Sharp uptick in B and CCC issuers




**Leveraged loan maturity profile, USD bn**




*Source: (1-2) CreditSights, "US HY New Issues for '23 and a First Look at '24."*


6. Leverage Loans
Structurally Vulnerable

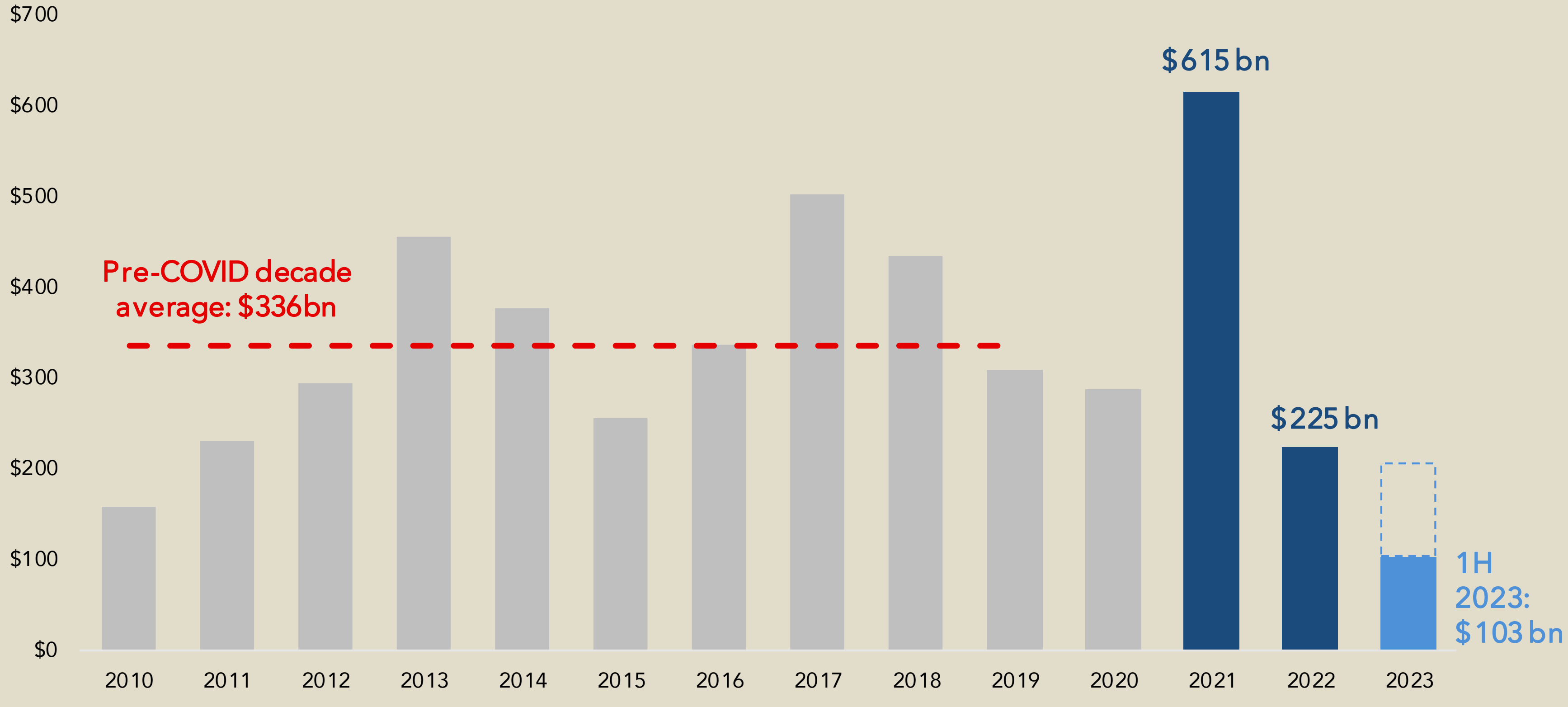
**“Be not afraid of greatness. Some are born great, some achieve greatness, and others have greatness thrust upon them.”**

William Shakespeare, in his romantic comedy, “Twelfth Night” (1601)

# Leveraged Loan Issuance Still Tepid

Issuance in the floating rate leverage loan market is on track for another tepid year, following a nearly two-thirds decline in 2022. Investors in the $1.4 trillion leveraged loan market have also shifted focus to higher quality with virtually all 2023 issuance in the BB and B-rated space. Two thirds of issuance this year has been refinancing activity. Higher rates impact both issuers (floating rate market) and the cost of funding for the largest investors (CLOs) in the leverage loan market.

US leveraged loan issuance, USD bn

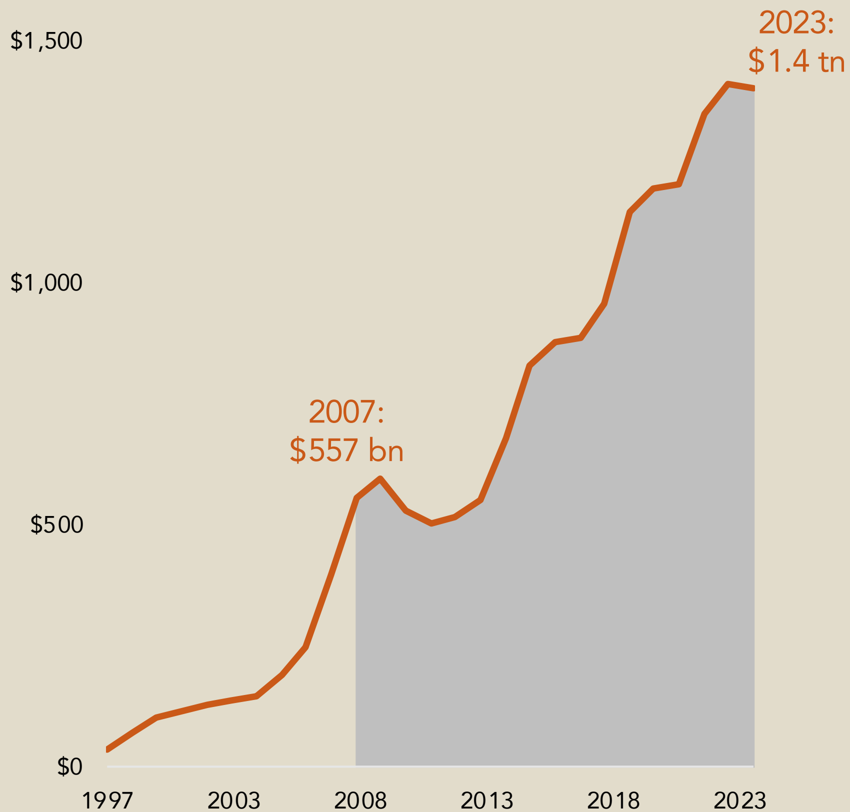



*Source: (1) MUFG LCM. LCD. 2023 data through June 30, 2023.*

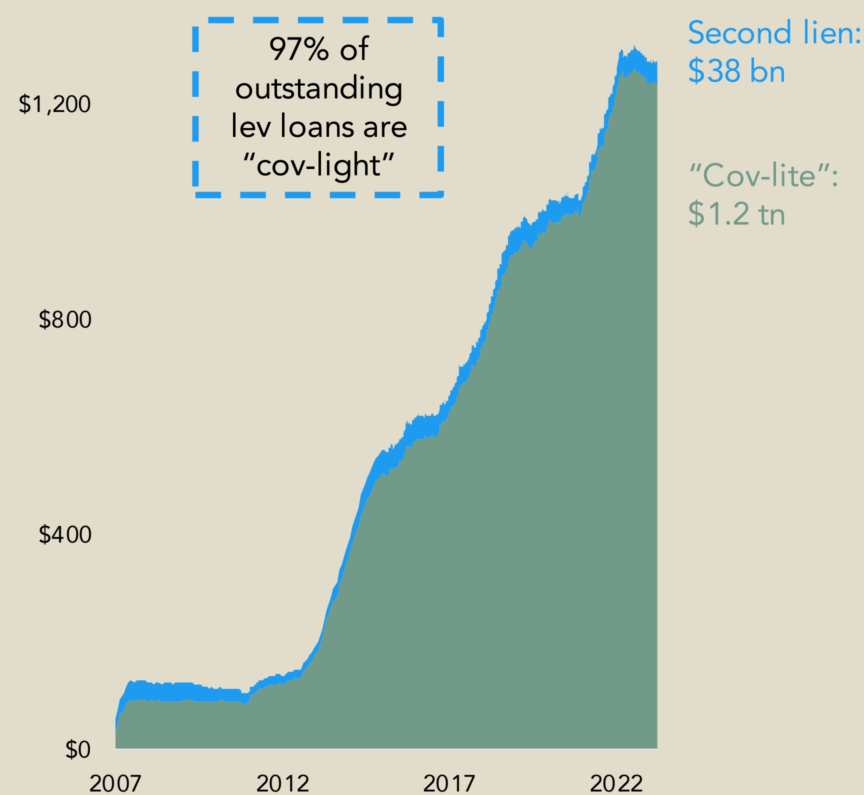
# Leverage Loan Market Now Larger & Cov-Lite

The USD Leveraged Loan market has nearly tripled since 2007, just before the onset of the financial crisis. Further, with a decade of low interest rates and high investor demand, the proportion of "cov-lite" loans is significantly higher today than it was prior to the financial crisis.

**USD leveraged loans, amount outstanding, USD bn**



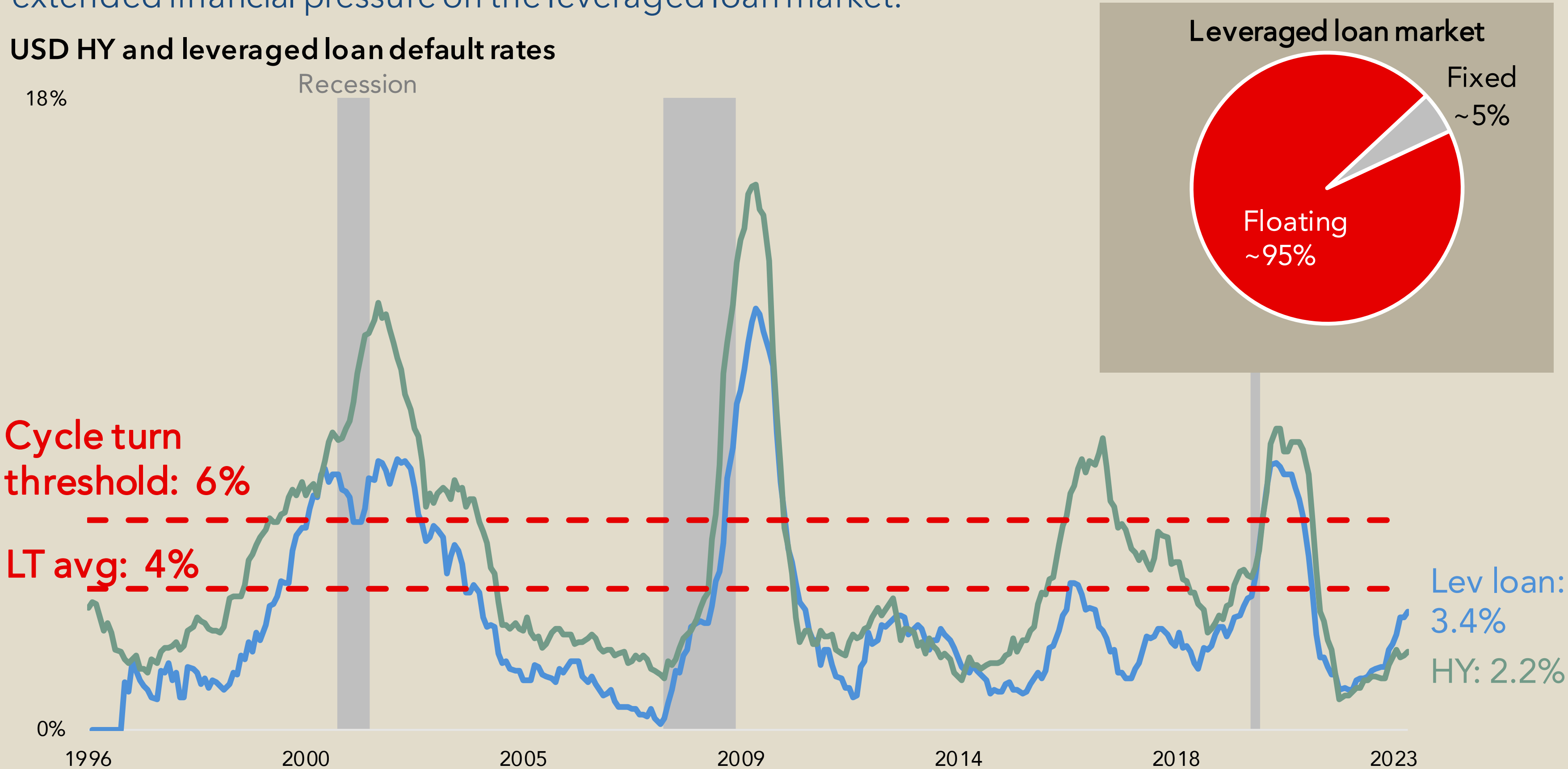

**Cov-lite & second-lien amount outstanding, USD bn**




*Source: (1-2) Source: Pitchbook, "LoanStats Weekly - July 6, 2023." 2023 data is through June 30, 2023.*

# Leverage Loan Defaults > Than High Yield

High yield bond default rates typically outpace leveraged loan rates. However, in the current cycle, leveraged loan defaults (which are more exposed to floating rate debt) are outpacing high yield bond defaults. As the Fed approaches the end of its tightening cycle, "how long" rates stay elevated is likely to matter more than "how high" rates ultimately reach as a higher for longer environment will put extended financial pressure on the leveraged loan market.

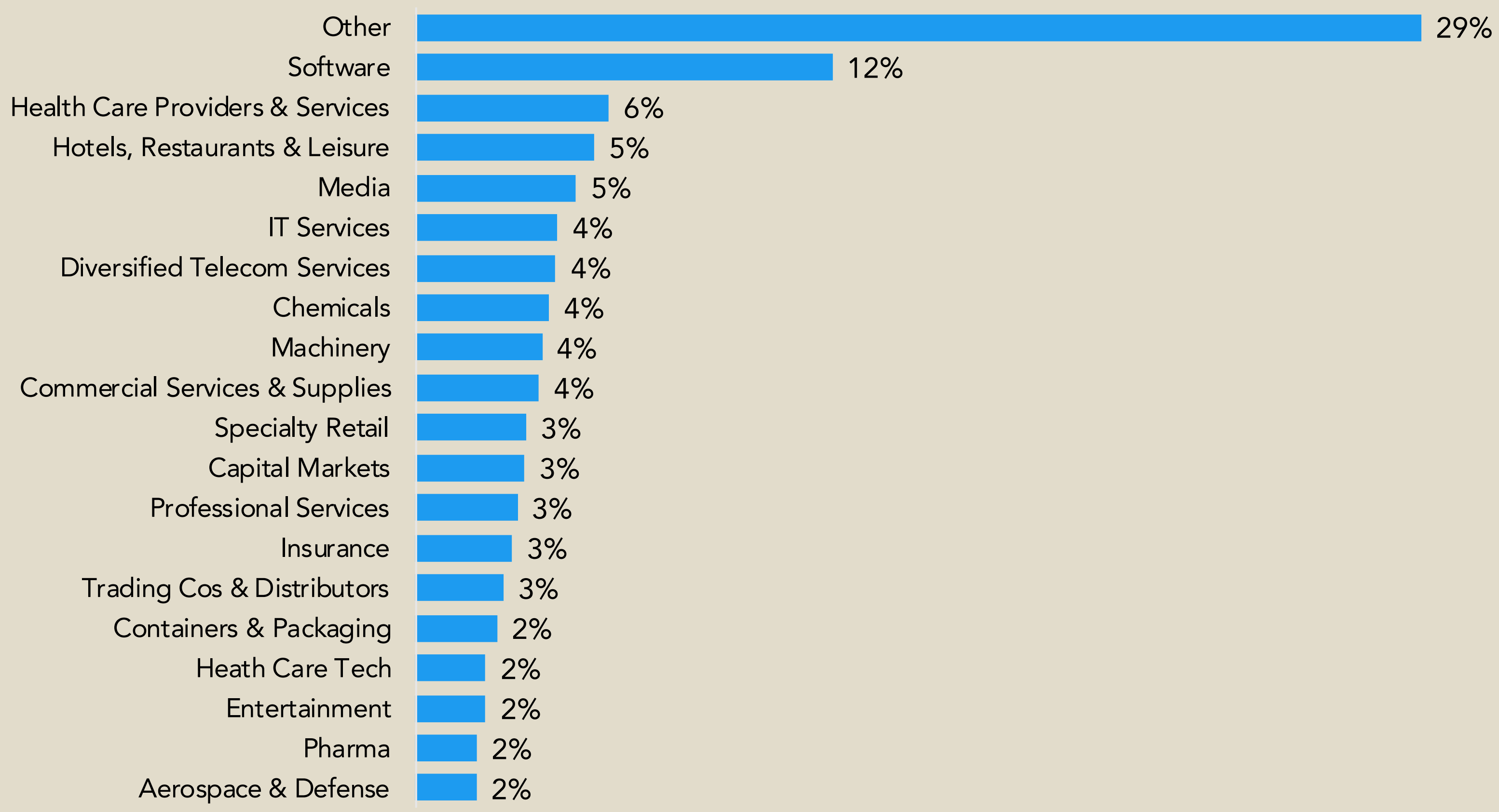



*Source: (1) Moody's, "Default Trends – Global May 2023 Default Report." Default rate is trailing 12 months US speculative grade default rate.*

# Leverage Loan Market More Structurally Vulnerable

Many industries with the most lev loan exposure faced challenges in 2022-23 (software, healthcare) or are highly exposed to recession risk in 2024 (hotels / restaurants / leisure).

**Par amount of outstanding loans by industry**

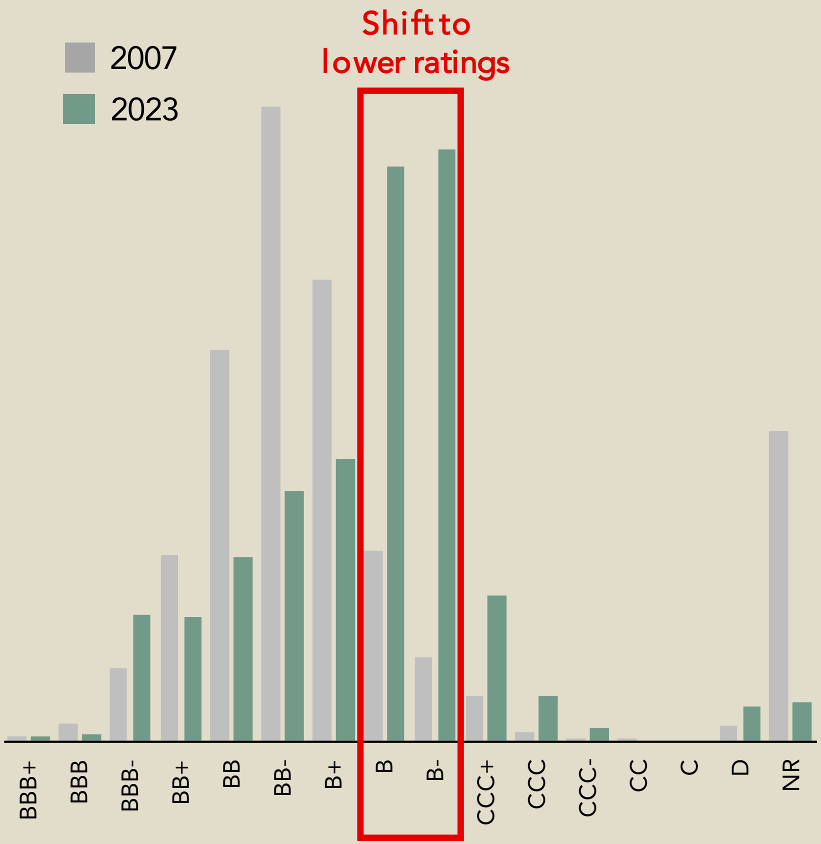



*Source: (1) Source: Pitchbook, "LoanStats Weekly - July 6, 2022." 2023 data is through June 30, 2023.*

# Leverage Loan Market More Structurally Vulnerable

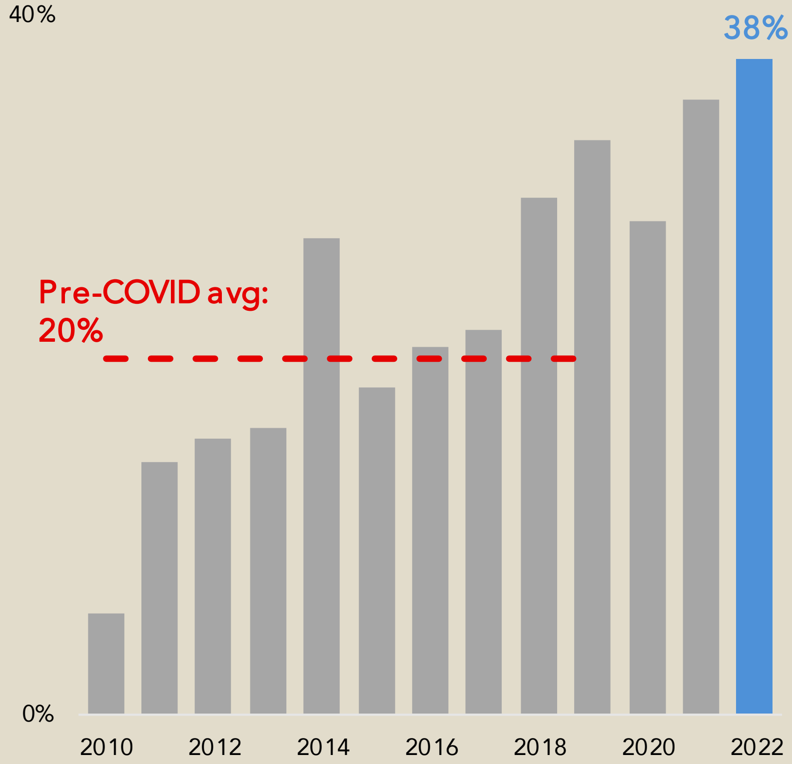
Relative to 2007, the leverage loan market is skewed more heavily to the low single B rating today vs. the low BB rating just before the GFC.

**Par amount of outstanding loans by rating**




Within the leveraged loan sector, the share of very highly leveraged loans has expanded in the post-COVID period. In 2021-2022, 36% of issued loans in the US and Europe had a debt / EBITDA ratio above 6, nearly double the share in 2015-2016.

**Share of issuance with debt / EBITDA >6**

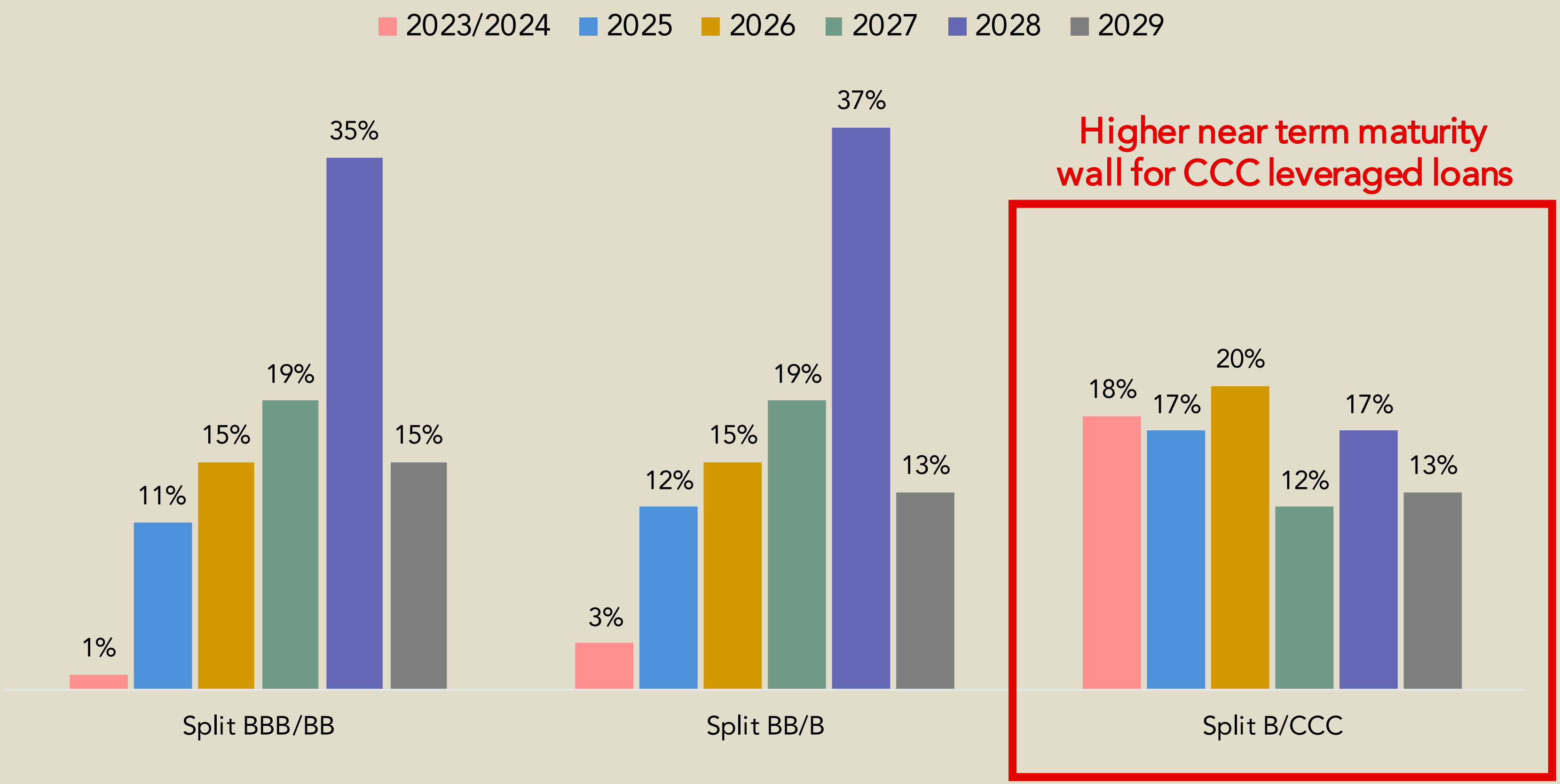



*Source: (1) Source: Pitchbook, "LoanStats Weekly – July 6, 2023." 2023 data is through June 30, 2023. (2) Oxford Economics, "Banking Woes – What we Know and What we Don't Know?." IMF*

# Challenging Maturity Profile in CCC Loans

In 2023, the leveraged loan market has been dominated by BB and B-rated refinancing activity as investors increasingly differentiate by credit quality. The CCC segment of the market, however, has been less active and the maturity profile is, therefore, more challenging. Nearly 20% of CCC loans in the index mature before 2025.

**Share of debt coming due by scheduled maturity year and rating**




Source: (1) Guggenheim, "Fixed-Income Sector Views – Second Quarter 2023."

# 7. A Closer Look at US Commercial Real Estate

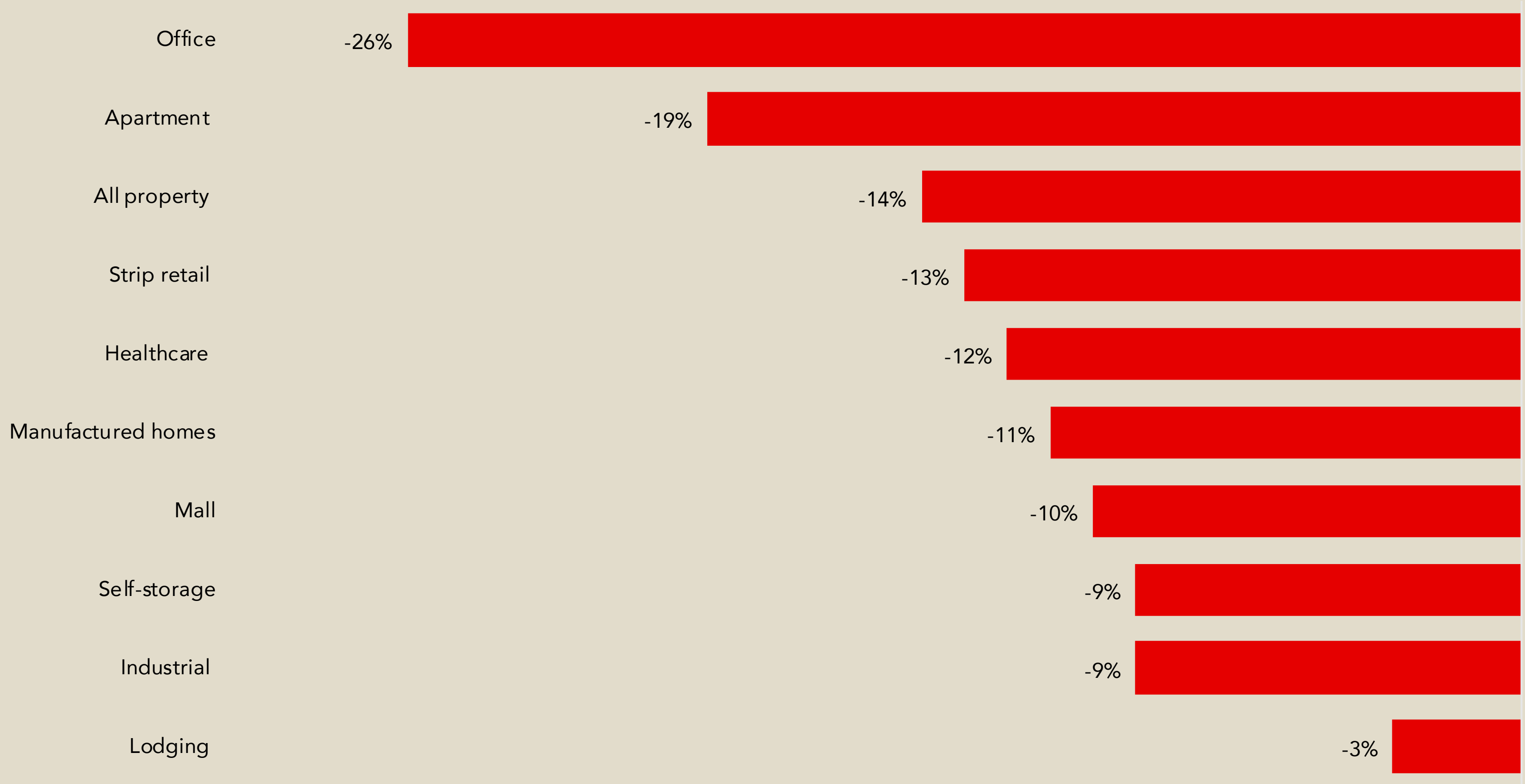
**“Buy land, they are not making it anymore”**

Mark Twain, the “Father” of
American Literature (1835-1910)

# Low Return-to-Office Rates

## With post-COVID return-to-office rates at 40-60% across US cities, office property valuations have declined more sharply than other CRE sub-categories.

**Change in commercial property values, past 12 months**

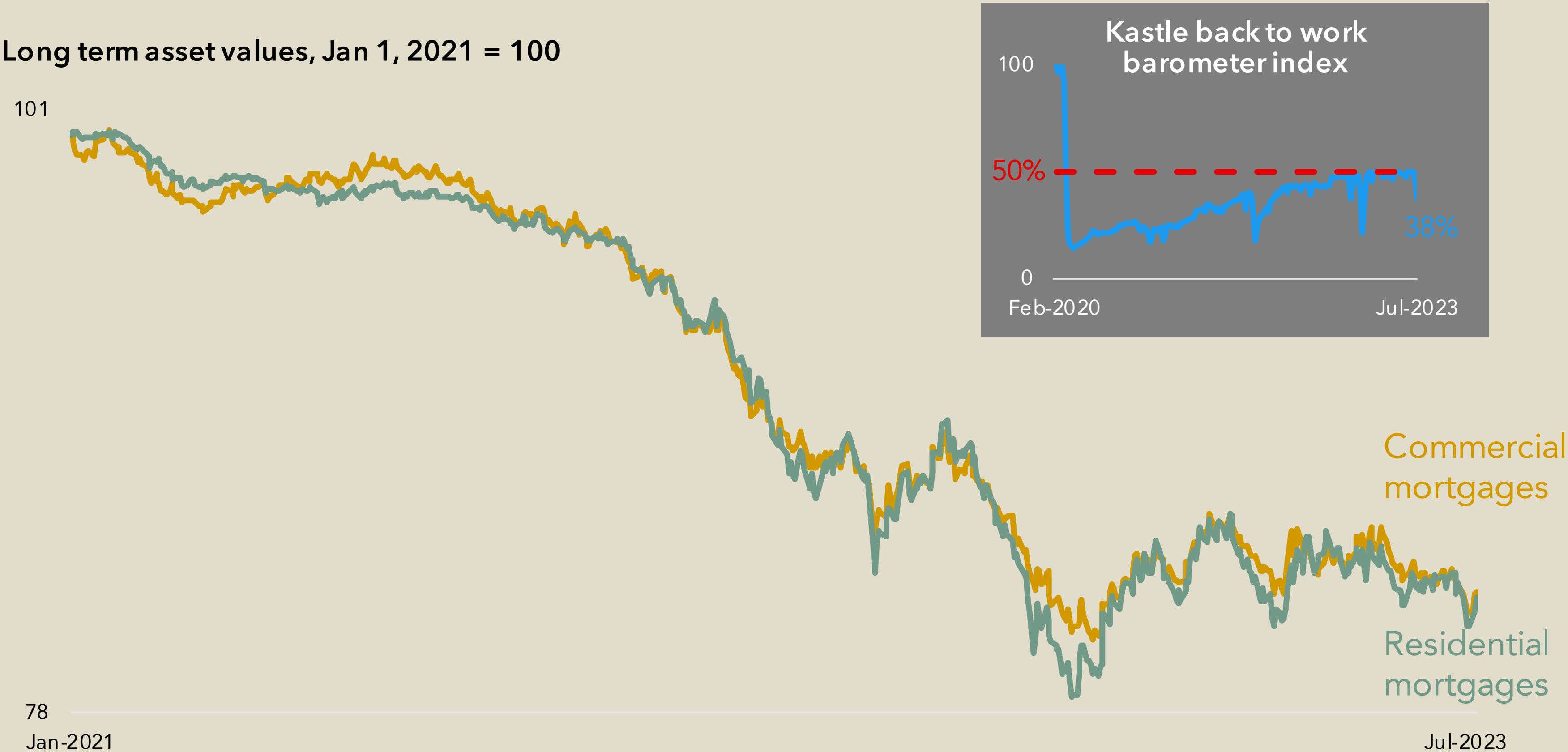



*Source: (1) Green Street Commercial Property Price Index. Data as of June 6, 2023.*

# Declining Property Valuations

Rising interest rates and slowing economic growth have undermined the value of underlying property assets held on banks' balance sheets. The peak to trough fall in asset values is expected to reach as high as 30% from today's 15%. Further, office occupancy rates remain well below pre-COVID levels creating further pressure on property valuations. Data from Kastle security shows "swipes" at offices in large cities are roughly 40% of their pre-pandemic levels.

**Long term asset values, Jan 1, 2021 = 100**

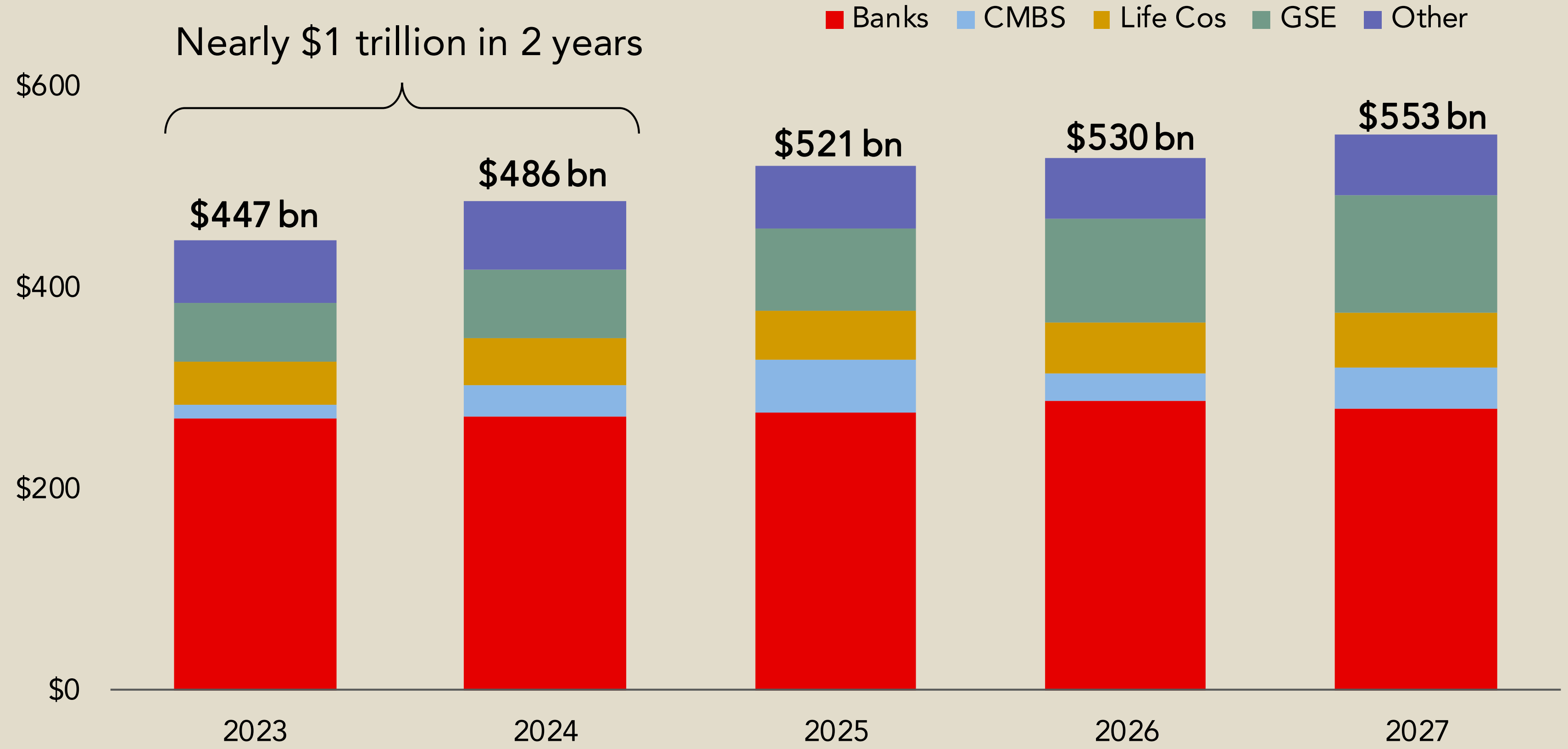



*Source: (1) Oxford Economics. "Banking woes – what we know and what we don't know" (March 29, 2023) Commercial mortgages is iShares CMBS ETF. Residential mortgages is SPDR Portfolio Mortgage Backed Bond ETF. (2) Bloomberg. Data as of July 12, 2023.*

# CRE Maturity Wall Nearly $1 Trillion

Regional banks are among the largest lenders to the commercial real estate sector. Over the next 18 months, the commercial real estate (CRE) maturity wall is close to $1 trillion in size. Refinancing risk has thus become a formidable issue in light of higher rates, a more discriminating late cycle investor base, return-to-office rates running at 40-60% nationally and peak to trough CRE price decline estimates approaching 20-30%.

**Maturing loans by lender type, USD bn**

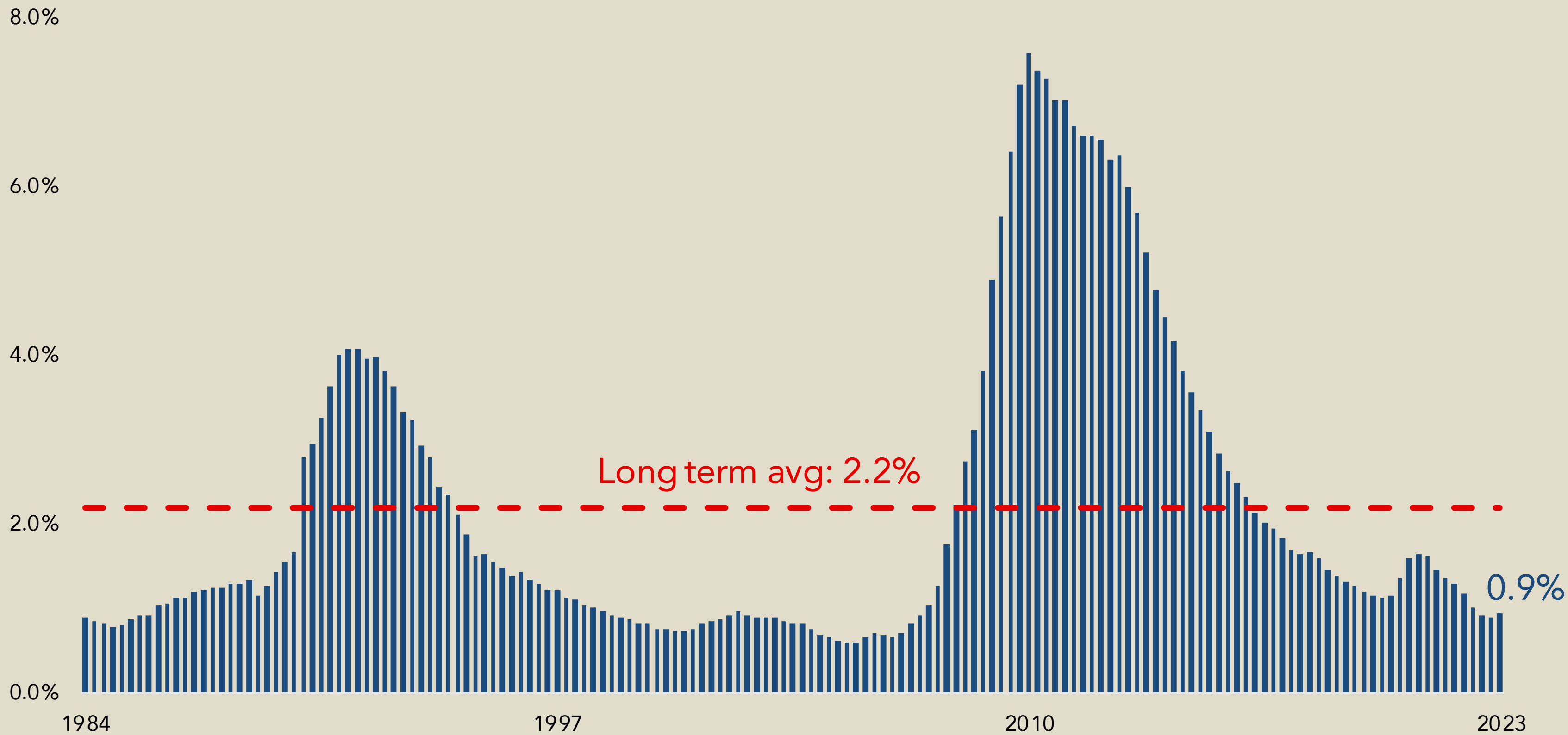



*Source: (1) Trepp, "Commercial Mortgage Universe Grows 9.4% in Q3 2022; Multifamily Universe Tops $2 Trillion" (December 2022).*

# CRE Noncurrent Loan Rates Still Historically Low

Banks hold roughly 60% of CRE mortgage debt, the largest holders across the financial sector, with much of that concentrated in regional banks. While the March bank sector stress shined a spotlight on CRE vulnerabilities in a higher rate environment, the CRE noncurrent loan rate remains at historically low levels.

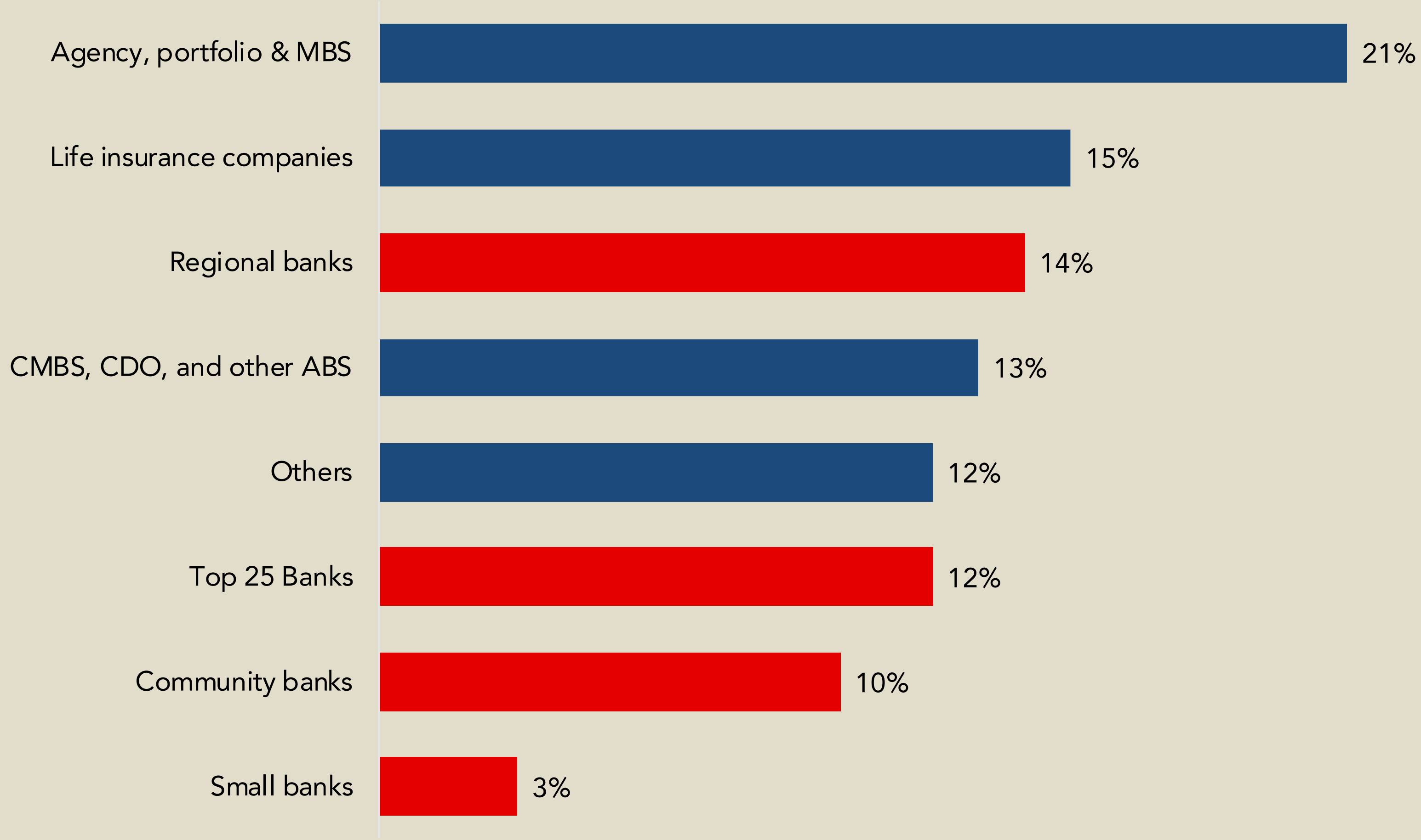
**CRE noncurrent rate**




*Source: (1) FDIC Bank Data Guide. Data retrieved June 14, 2023. FactSet, "Assessing CRE Exposure Across the Financial Sector" (April 2023).*

# Ownership Structure of CRE Loan Market

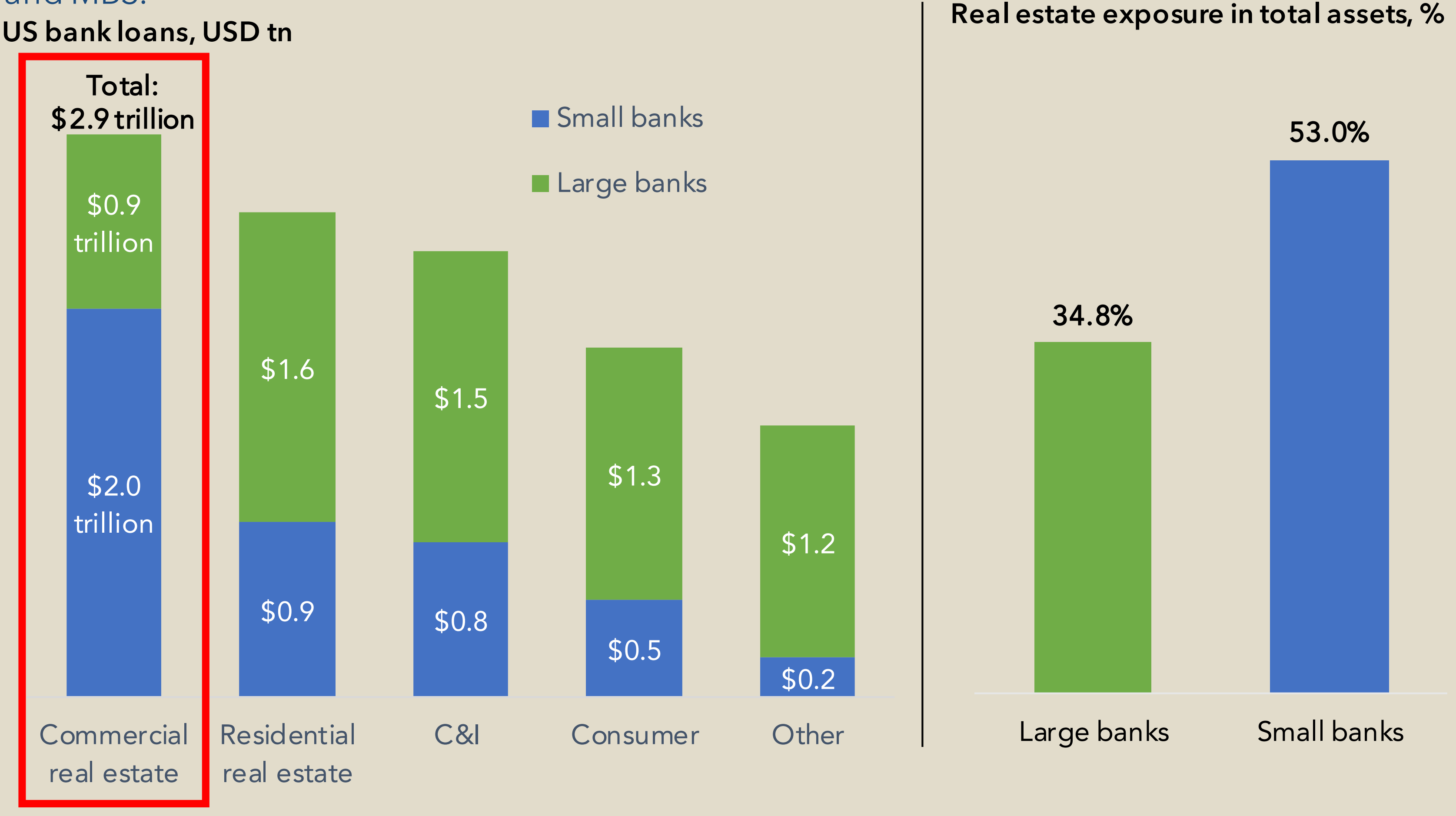
Share of $4.5 tn US CRE loans, by lender type




*Source: (1) Moody's Analytics. Axios Visuals. 3,726 small banks, 829 community banks and 135 regional banks.*

# Banks' Outsized Exposure to Real Estate

Of the $4.5 trillion of loans on small banks' balance sheets, commercial real estate loans are by far the largest component, accounting for nearly $2 trillion, or 40%. Further, in the US, roughly 35% of large bank assets and 53% of small bank assets are exposed to the broader real estate sector via lending and MBS.



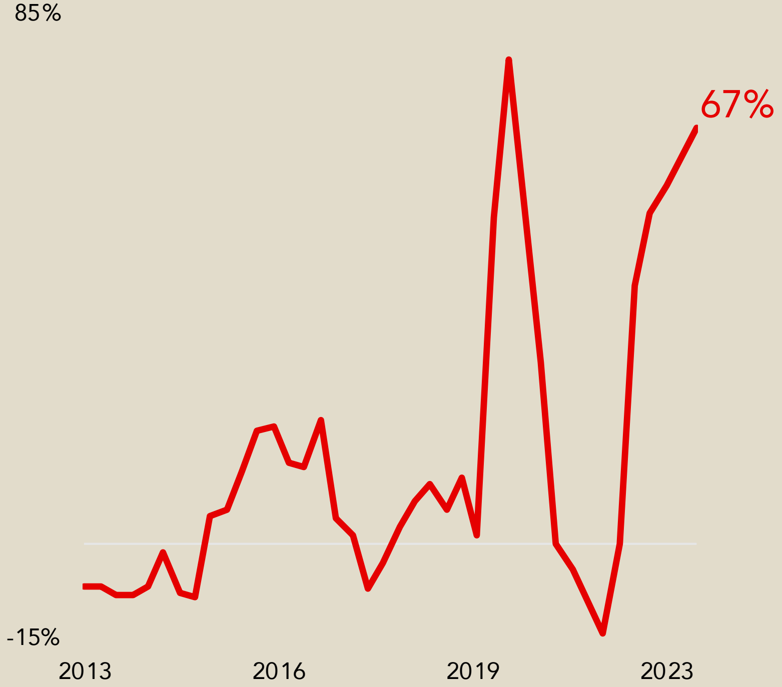

Source: (1) Oxford, "Economic cost of banking stress still to come" (March 21, 2023). (2) Oxford Economics. "Banking woes – what we know and what we don't know" (March 29, 2023).

# Tighter Bank Lending Standards

Banks have been tightening lending standards to the commercial real estate sector since January 2022. As banks continue to work through the ramifications of banking sector turmoil, expect even tighter lending standards, particularly from small to mid sized banks.

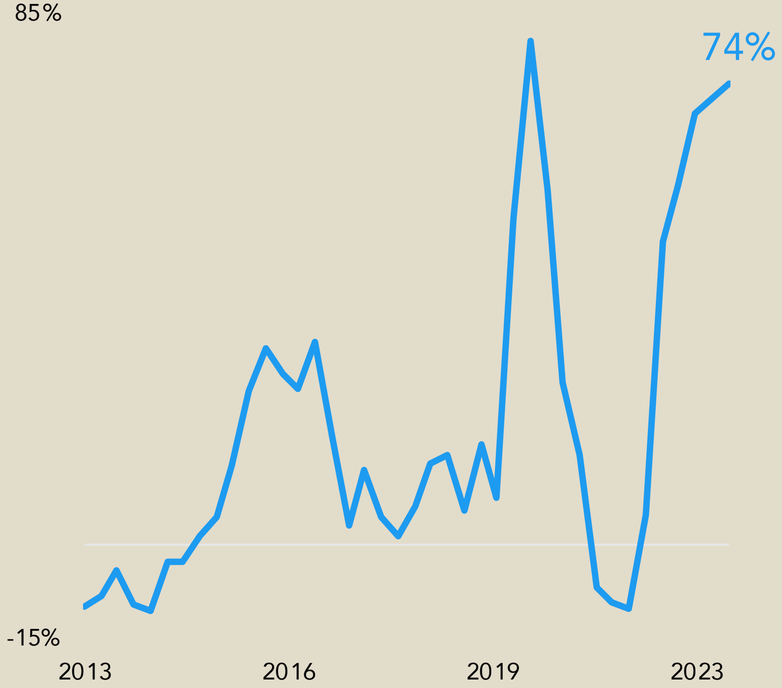
## Non-Farm Non-Resi CRE Loans

**Net percentage of domestic banks tightening standards for commercial real estate loans secured by nonfarm nonresidential structures**




## C&L Development CRE Loans

**Net percentage of domestic banks tightening standards for commercial real estate loans with construction and land development purposes**




*Source: (1-2) Federal Reserve. Data through Q2 2023.*

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## Tom Joyce

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### Role

Tom Joyce is a Managing Director and Capital Markets Strategist within MUFG's global capital markets and investment banking business. Based in New York, Tom heads a team that creates customized analytical content for multi-national S&P 500 companies. His team provides in depth analysis on the impact of economic, political, public policy and regulatory dynamics on the US credit, foreign exchange, rates and commodities markets.

### Experience

Tom has over 25 years of Investment Banking experience in New York, London, Hong Kong, and San Francisco. Over the last 15 years, Tom created and built the Capital Markets Strategy role, advising corporate C-Suite executives (Boards, CEOs, CFOs, and Treasurers) on the pervasive macro forces driving markets. Tom also presents at dozens of corporate events each year including Board meetings, CEO ExCo sessions, CFO and Treasury off-sites, corporate leadership events and conferences.

### Education

Tom's educational background includes a year of study at Oxford University from 1991 - 1992, a Bachelor of Arts in Political Science from Holy Cross College in 1993, and a MBA from Kellogg Business School, Northwestern University in 2000.

### Personal

Tom resides in New Canaan, CT with his wife and four sons, where he serves on the Board of Trustees of the New Canaan Library as well as the Holy Cross College President's Council.

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### Role

Hailey Orr is a Managing Director in MUFG's Capital Markets Strategy group within the global capital markets and investment banking business. The team provides market based content for corporate clients to assist in strategic decision making. Focus areas include the impact of economic, political, public policy and regulatory dynamics on the US credit, foreign exchange, rates and commodities markets.

### Experience

Hailey has a decade of Wall Street experience, including three years as a Consumer Sector Specialist in Equity Sales and seven years as a Capital Markets Strategist. Hailey is also a member of MUFG's Inclusion & Diversity Council and has devoted years to participating in and developing Wall Street recruiting programs.

### Education

Hailey graduated with honors from the University of Michigan's Ross School of Business with a BBA and a minor in International Studies.

### Personal

In March 2020, Crain's New York Business Magazine named Hailey one of the "Rising Stars in Banking and Finance".


## Stephanie Kendal

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### Role

Stephanie Kendal is a Vice President in MUFG's Capital Markets Strategy group within the global capital markets and investment banking business. The team provides market based content for corporate clients to assist in strategic decision making. Focus areas include the impact of economic, political, public policy and regulatory dynamics on the US credit, foreign exchange, rates and commodities markets.

### Experience

Stephanie has spent over five years as a Capital Markets Strategist. She is an active member of the University of Michigan recruiting team and is focused on the diversity recruiting effort at MUFG. Stephanie is also a part of MUFG's DEI, Culture & Philanthropy (DCP) Council.

### Education

Stephanie graduated with honors from the University of Michigan's Ross School of Business with a BBA .

### Personal

Stephanie is actively involved in NYC's iMentor program, mentoring high school students with their journey to college graduation.

# MUFG's Capital Markets Strategy Team









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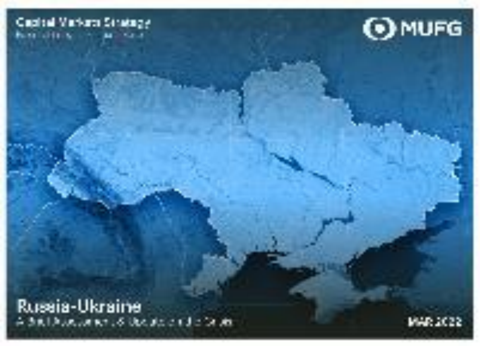




# MUFG's Capital Markets Strategy Team









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