Credit market outlook:
A default cycle has started, but credit spreads remain tight

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Thematic credit investing

1. **Up in quality**: With the Fed keeping rates higher for longer, higher debt costs will continue to weigh on earnings and interest coverage ratios over the coming quarters, and both IG and HY companies will experience higher refinancing costs.

2. **Large cap**: A default cycle has started with bankruptcy filings rising, and default rates will continue to rise over the coming quarters, impacting in particular middle market companies.

3. **Lend to firms with low leverage and high interest coverage ratios**: Lagged effects of monetary policy are slowing consumer credit growth with auto and credit card delinquencies rising and bank lending conditions tightening, leading to a significant slowing of loan growth impacting consumers and firms with weak balance sheets.
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A default cycle has started
A default cycle has started
Total employment in the US high yield index: 11 million; total employment in the leveraged loans index: 8 million

Source: Bloomberg, ICE BofA HDAO Index, Morningstar LSTA Index, Apollo Chief Economist. Note: Data includes 842 companies in the HY index with employment data available for 584 companies and median employment assumed for the rest. Similarly, there are 1,073 companies in the leveraged loans index with employment data available for 450 companies and median employment assumed for the rest.
Weekly bankruptcy filings high because of Fed hikes

Source: Bloomberg, Apollo Chief Economist. Note: Filings are for companies with more than $50mn in liabilities. For week ending on November 15, 2023.
IG ICR coming down

Source: Bloomberg, Apollo Chief Economist
HY ICR coming down

Source: Bloomberg, Apollo Chief Economist
Bonds more attractive than equities

Source: Bloomberg, Apollo Chief Economist
Credit metrics for leveraged loan deals: ICR and cash flow down. Leverage up.

Median credit metrics for US Leveraged loans universe

- Leverage
- Interest Coverage
- Cash flow coverage

Source: Pitchbook LCD, Apollo Chief Economist
Fed hikes pushing bankruptcy filings higher

Source: S&P Capital IQ, Bloomberg, Apollo Chief Economist. Note: Bankruptcy figures include public companies or private companies with public debt with a minimum of $2 million in assets or liabilities at the time of filing, in addition to private companies with at least $10 million in assets or liabilities.
Bank lending likely to shrink over the coming quarters

Source: FRB, Haver Analytics, Apollo Chief Economist
Disconnect between bankruptcy filings and credit spreads

Source: Bloomberg, Apollo Chief Economist
HY credit spreads and VIX tend to move closely together

Source: Bloomberg, Apollo Chief Economist
Disconnect between spreads and economic activity

Source: ISM, ICE BofA, Haver Analytics, Apollo Chief Economist
Comparing coupons and effective yields for IG and HY bonds maturing in 2024

**Yield vs coupon for bonds maturing in 2024**

- **Investment grade** (green dots)
- **High yield** (blue dots)
- **Flying Lease ltd**

**Effective yield (%)**

- **Coupon**

Source: Bloomberg, Apollo Chief Economist
Rise in yields due to rising risk free rates

Source: ICE BoFA, Haver Analytics, Apollo Chief Economist
HY and IG implied volatility

Source: CBOE, Bloomberg, Apollo Chief Economist
Disconnect between yield and spreads

Source: Bloomberg, Apollo Chief Economist. Note: Index used LUACTRUU Index
The yield on the IG corporate bond index is 2%-point higher than coupon rate.
Share of high yield bonds maturing in 3 years rising

Source: ICE BofA, Bloomberg, Apollo Chief Economist
Share of IG corporate bonds maturing in 3 years

Source: ICE BofA, Bloomberg, Apollo Chief Economist
US corporate bonds maturing within a year

Share of corporate bonds maturing in 0-1 years

- US High Yield
- US Investment Grade

Source: ICE BofA, Bloomberg, Apollo Chief Economist
Recovery rates

Global recovery rates (per $100 par)

- Global 1st Lien bond
- Global Senior Unsecured bond
- US senior unsecured bond
- US 1st lien loan
- US HY default rate (RHS)

Fed starts raising rates

Source: Moody's Analytics, Apollo Chief Economist
Yield levels
US IG yield around 6.8% and HY yield around 8.5%
US IG yield levels, by rating

Source: ICE BofA, Haver Analytics, Apollo Chief Economist
US HY yield levels, by rating

Source: ICE BofA, Haver Analytics, Apollo Chief Economist
European corporate IG and HY yields

Source: ICE BofA, Bloomberg, Apollo Chief Economist
European IG yield levels, by rating

Source: ICE BoA, Bloomberg, Apollo Chief Economist
European HY yield levels, by rating

Source: ICE BoA, Bloomberg, Apollo Chief Economist
Annual returns for HY

Source: Bloomberg, Apollo Chief Economist
Yield for the leveraged loan index: 9.9%
Spread levels
Credit spreads not pricing in a recession

US investment grade and high yield spreads

Source: ICE BofA, Bloomberg, Apollo Chief Economist
HY spreads by rating

Source: ICE BofA, Bloomberg, Apollo Chief Economist
IG quality spreads, some differentiation between single-A and double-AA
HY quality spreads, more differentiation between CCC and single-B
US HY spread minus IG spread

Source: ICE BofA, Bloomberg, Apollo Chief Economist. Note: Bloomberg Index used C0A0 Index and H0A0 Index
European IG and HY spreads

Source: ICE, BofA, Bloomberg, Apollo Chief Economist. Note: Ticker used HE00 Index and ER00 Index.
European IG spreads by rating

Source: ICE BofA, Bloomberg, Apollo Chief Economist.
European HY spreads by rating

Source: ICE BofA, Bloomberg, Apollo Chief Economist.
European HY spread minus IG spread

Source: ICE BoA, Bloomberg, Apollo Chief Economist. Note: Ticker used HE00 Index and ER00 Index.
Spread between Europe HY and IG default swaps

Source: Bloomberg, Apollo Chief Economist. Note: Tickers used ITRXEXE CES Curncy and ITRXEBE CES Curncy.
Global HY spread minus global IG spread

Source: Bloomberg, Apollo Chief Economist. Note: Bloomberg Index used BGLCTRUU index and LG50TRUU Index
HY spreads by sector: Spread for tech remains wider
HY spreads by sector: Spread for paper has widened
HY spreads by sector

US HY spread by sector

Source: ICE BofA, Bloomberg, Apollo Chief Economist
HY spreads by sector

Source: ICE BofA, Bloomberg, Apollo Chief Economist
IG spreads for financials and non-financials

Source: ICE BofA, Bloomberg, Apollo Chief Economist
Long-duration IG spreads in US and Europe

Source: ICE BofA, Bloomberg, Apollo Chief Economist
Divergence between US and Europe lower rated junk bond spreads

Source: Bloomberg, Apollo Chief Economist
CMBS BBB spreads

Source: Bloomberg, Apollo Chief Economist
New issuance
Source: Pitchbook LCD, Apollo Chief Economist
IG issuance by rating

Source: Pitchbook LCD, Apollo Chief Economist.
Sector distribution of new IG issuance

New issuance by sector for US IG

Source: Bloomberg. Apollo Chief Economist. Note: Issuance includes bonds, loans, leveraged loans, and preferred.
HY issuance by rating

Source: Pitchbook LCD, Apollo Chief Economist.
Sector distribution of new HY issuance

Source: Bloomberg, Apollo Chief Economist. Note: Issuance includes bonds, loans, leveraged loans and preferred.
Leveraged loan volume

Source: Pitchbook LCD, Apollo Chief Economist.
IG new money primary mix

IG yearly new money primary mix

Source: Pitchbook LCD, Apollo Chief Economist. Note: Data as of 31st October 2023.
HY new money primary mix

HY yearly new money primary mix

Source: Pitchbook LCD, Apollo Chief Economist. Note: Data as of 31st October 2023
Loans new money primary mix

Source: Pitchbook LCD, Apollo Chief Economist. Note: 2022 YTD till of 31st October 2023
High grade volume by proceeds

Source: Pitchbook LCD, Apollo Chief Economist
High yield volumes by proceeds

Source: Pitchbook LCD, Apollo Chief Economist
Loan volumes by proceeds

Loan issuance volumes by proceeds

Source: Pitchbook LCD, Apollo Chief Economist
Covenant lite loan issuance

Source: Pitchbook LCD, Apollo Chief Economist. Note: A covenant-lite loan is a type of financing with fewer restrictions on the borrower and fewer protections for the lender, often used in leveraged buyouts. Data as of 31st October 2023.
Corporate bond issuance

US Corporate bond issuance

Fixed Rate

Floating Rate

Source: SIFMA, Apollo Chief Economist.
Secured HY bond issuance volume

Secured HY bonds as a share of total issuance

Source: Pitchbook LCD, Apollo Chief Economist. Note: A secured bond is the bond issued with the collateral as a security for the bond.
Credit fundamentals
IG leverage has come down after the pandemic
High yield leverage rising recently

Source: Bloomberg, Apollo Chief Economist. Note: Median leverage for the bonds in H0A0 index.
Default rates for auto loans and credit cards moving higher
29% of the loans in the Morningstar LSTA Leveraged Loan Index are rated B-.
Quality composition of the IG Index

Source: ICE BoF, Bloomberg, Apollo Chief Economist. Note: Breakdown by market value. Data as of 31st October 2023
Quality composition of the HY Index

Source: ICE BofA, Bloomberg, Apollo Chief Economist. Note: Breakdown by market value. Data as of 31st October 2023
Quality composition of the leveraged loans index

Source: Pitchbook LCD, Apollo Chief Economist
IG market is eight times bigger than HY and eight times bigger than the loan market.
Global default rates rising in US and Europe

Year-to-date defaults by region

Count
140


Sources: S&P Global Ratings Research and S&P Global Market Intelligence’s CreditPro®, Apollo Chief Economist. Note: Data as of 30th June 2023
Default rates differ across sectors

Sectorwise Region Default

- U.S.
- Europe
- EM
- Other

Sources: S&P Global Ratings Research and S&P Global Market Intelligence’s CreditPro®, Apollo Chief Economist. Note: Data as 31st December 2022
A default cycle has started

Source: Moody's Analytics, Apollo Chief Economist
Global corporate default rates

% Trailing 12m

Default rates

Global All corporates
Global Speculative grade

Source: Moody's Analytics, Apollo Chief Economist
Non-US corporate default rates

% Default rates

- Non US All corporates
- Non US Speculative grade

Source: Moody's Analytics, Apollo Chief Economist
Corporate bond holdings
The biggest holder of US corporate bonds is foreigners.
ECB purchases of corporate bonds

Source: ECB, Bloomberg, Apollo Chief Economist
ECB doing QT

Source: ECB, Bloomberg, Apollo Chief Economist
Loans/CLOs
Leveraged loan deals, by multiple

Share of leveraged deals

Source: Pitchbook LCD, Apollo Chief Economist
Leveraged loans rating distribution, 2023Q3

Source: Pitchbook LCD, Apollo Chief Economist
Leveraged loans distribution, by industry, 2023Q3

Source: Pitchbook LCD, Apollo Chief Economist
US CLO total volume

Source: Pitchbook LCD, Apollo Chief Economist.
Loans: Institutional spread relative to bespoke loans

Source: Pitchbook LCD, Apollo Chief Economist
Distressed ratio for leveraged loans has risen

Source: Pitchbook LCD, Apollo Chief Economist. Note: For percent loans priced below 80%
More downgrades than upgrades

Leveraged loans, upgrades vs downgrades

Source: Pitchbook LCD
Leveraged loans index weights

Morningstar leveraged loans index weights

- Industrials: 22%
- Information Technology: 7%
- Consumer Discretionary: 12%
- Health Care: 11%
- Communication Services: 7%
- Materials: 7%
- Financials: 14%
- Consumer Staples: 18%
- Energy: 12%
- Utilities: 11%
- Real Estate: 2%
- Energy: 2%
- Real Estate: 0%

Source: Pitchbook LCD, Apollo Chief Economist
Liquidity in US credit markets
IG trading liquidity

Source: ICE BofA, FINRA TRACE, Haver Analytics, Apollo Chief Economist
Bid-ask spread for US IG

Source: Bloomberg, Apollo Chief Economist. Note: The bid-ask spread is the weighted average of Bloomberg Barclays US IG Index.
Bid-ask spread for US HY

US HY corporate bid-ask spread

Source: Bloomberg, Apollo Chief Economist. Note: The bid-ask spread is the weighted average of Bloomberg Barclays US HY Index.
Dealer inventory of corporate bonds (IG+HY)
Worse liquidity in the UK bond market

Source: Bloomberg, Apollo Chief Economist. Note: The index displays the average yield error across the universe of government notes and bonds with remaining maturity 1-year or greater, based off the intra-day Bloomberg relative value curve fitter. When liquidity conditions are favorable the average yield errors are small as any dislocations from fair values are normalized within a short time frame. Average yield error is defined as an aggregate measure for dislocations in Treasury securities across the curve.
Market technicals
2023: Not a broad-based rally in the S&P500

Source: Bloomberg, Apollo Chief Economist.
US IG spread highly correlated with implied rates vol
Investment grade maturity by sector in 2024

US IG non financial corporates share of bonds maturing in 2024 by sector

Source: ICE BofA, Bloomberg, Apollo Chief Economist
High yield maturity by sector in 2024

US HY non financial corporates share of bonds maturing in 2024 by sector

Source: ICE BofA, Bloomberg, Apollo Chief Economist
Investment grade maturity wall

Source: S&P Global ratings Research, Apollo Chief Economist. Note: Data as of July 1, 2022. Includes issuers’ investment-grade bonds, loans, and revolving credit facilities that are rated by S&P Global Ratings.
High yield maturity wall

Source: S&P Global ratings Research, Apollo Chief Economist. Note: Data as of July 1, 2022. Includes issuers’ speculative-grade bonds, loans, and revolving credit facilities that are rated by S&P Global Ratings.
HY: US Non financials maturity wall

Regional banks
Regional bank spreads have widened recently

Source: ICE BofA, Bloomberg, Apollo Chief Economist. Note: Unweighted average spreads of bonds from ICE 5-10 Year US Banking Index, C6PX Index for bonds issued before 1st Jan 2023. There are 8 banks in the Regional index and 41 banks in the Diversified index, and Regional banks include BankUnited Inc, Citizens Financial Group, Huntington Bancshares Incorporated, Regions Financial Corporation, Truist Financial Corporation, Webster Financial Corp, Wintrust Financial Corp, Zions, and Diversified banks includes JPMorgan, Citibank, Bank of America, etc.
Almost 700 US banks exceed the 2006 CRE loan concentration guidance

Source: S&P Global Market Intelligence, Apollo Chief Economist. Note: C&D = Construction and Development, data as of May 2023 and based on regulatory filings.
US banks account for the bulk of CRE lending

Source: S&P Capital IQ, Apollo Chief Economist
U.S. REITs hold approximately $14 billion of debt maturing this year.
More leveraged loans are held by banks

Source: Pitchbook LCD, Apollo Chief Economist
Credit markets in a broader perspective
US fixed income markets by yield and size

Yield vs. market value for US fixed income securities

- HY Corporate
- IG Corporate Non-Financials
- CMBS
- UST 3-7Yr
- Muni Bonds
- Emerging Markets
- IG Corporate Financials
- UST 10Y+
- Agency Debt
- UST 1-3Yr
- Leveraged loans
- UST 7-10Yr
- Agency MBS
- ABS

Source: Bloomberg Barclays, SIFMA, ICE BofA, Pitchbook LCD, Bloomberg, Apollo Chief Economist. Note: data as of 4Q21
European fixed income markets by yield and size

Yield vs. market value for Euro fixed income securities

- Euro High Yield
- EM Euro
- EURO CMBS
- Euro Asset Backed & Mortgage Backed Securities
- 10+ Year Euro Government
- Euro IG Non-Financial
- Euro RMBS
- Euro IG Financial
- 7-10 Year Euro Government
- Euro Covered Bond
- 3-7 Year Euro Government
- 0-3 Year Euro Government

Source: Bloomberg Barclays, AFME, ICE BoA, Pitchbook LCD, Bloomberg, Apollo Chief Economist. Note: data as of 4Q21
Japanese fixed income markets by yield and size

Yield vs. market value for JPY fixed income securities

- 10+ Year Japan Government
- 7-10 Year Japan Government Index
- 5-7 Year Japan Government
- 3-5 Year Japan Government
- 0-1 Year Japan Government

Source: ICE BofA, Bloomberg, Apollo Chief Economist. Data as of 1Q22
Total market cap of US corporate bond markets: $9trn

Source: ICE BofA, Bloomberg, Apollo Chief Economist.
Corporate bond market cap, by rating

Source: ICE BoA, Bloomberg, Apollo Chief Economist. Data as of 31st October 2023
HY sector rating distributions

Source: S&P Global Ratings Research and S&P Global Market Intelligence’s CreditPro®, Apollo Chief Economist. Note: Numbers in parentheses represent overall sector’s proportion of the speculative-grade population. CP&ES—Chemicals, packaging, and environmental services. FP&BM—Forest products and building materials. Home/RE—Homebuilders and real estate companies.
US corporate bond markets as a share of GDP

Source: ICE BofA, BEA, Haver Analytics, Bloomberg, Apollo Chief Economist
Distribution of corporate credit ratings

Source: S&P, Apollo Chief Economist
Debt-to-equity ratio is very low for corporate America
Fewer and fewer corporate bonds are rated AAA and AA

Source: Fitch Ratings, Apollo Chief Economist. Note: Including state-linked issuers with Standalone Credit Profiles in the 'AA' category. Data cover issuers that have been rated for at least six years or at end-2020.
Comparing the US IG index with the EU IG index

Sectoral breakdown of US and Europe investment grade corporate index

Source: Bloomberg Barclays, Bloomberg, Apollo Chief Economist.
Comparing the US HY index with the EU HY index

Source: Bloomberg Barclays, Bloomberg, Apollo Chief Economist.
Pension funding status has improved

Source: Milliman, Bloomberg, Apollo Chief Economist. Note: Funded status measures planned assets minus projected benefit obligation.
Retail investor activity in IG and HY

High yield and investment grade corporate bond ETF shares outstanding

- iShares iBoxx Investment Grade Corporate Bond ETF
- iShares iBoxx High Yield Corporate Bond ETF

Source: Bloomberg, Apollo Chief Economist. Note: Tickers used HYG US Equity and LQD US Equity
Put volumes for IG and HY ETF

![Graph showing put volumes for IG and HY ETF]

Source: Bloomberg, Apollo Chief Economist
Fewer high yield bonds being traded
Source: Bloomberg, Apollo Chief Economist. Note: Index used LUACTRU index.
Bonds outstanding trading at negative interest rates

Source: Bloomberg, Apollo Chief Economist
The total value of negative yielding debt in the world

Source: Bloomberg, Apollo Chief Economist
All corporate bonds now have positive yields

Source: Bloomberg, Apollo Chief Economist
Credit spreads normally widen when the Fed is hiking
US: Floating rate bonds outstanding, November 2023

US floating rate universe

- Loans: 31%
- Treasuries: 4%
- Corporate: 16%
- Other: 49%

Source: Bloomberg, Apollo Chief Economist. Note: Other includes Munis, Agency and Securitized. The chart filters floating rate securities for all asset class from the fixed income SRCH <GO> screen on Bloomberg.
From QE to QT

Source: Bloomberg, Apollo Chief Economist. Pace of purchases for 2021: BOE: £3.4bn per week till mid December 2021, FED: USD120bn per month with wind down from December with purchases ending in March 2022, ECB: Euro 90bn per month (20 bn APP + 60 bn PEPP), PEPP till March 2022, Euro 40bn in April, Euro 30bn in May and Euro 20bn in June, and only redemptions reinvested from August. BOJ: USD 60bn per month. For 2022: All programs are expected to wind down linearly from January 2022 to December 2022. Fed QT $ 95 per month from May 2022. BoE starts to sell GBP80 bn in the next 12 months and ECB starts QT in 2Q23.
M&A activity declining

Source: Bloomberg, Apollo Chief Economist. Note: Ticker used is MAATUS Index
Declining share of fallen angels in the HY index

Fallen angel weight of HY Index

Source: ICE BoA, Bloomberg, Apollo Chief Economist. Note: Tickers used HDA0 Index and HOF0A Index
Big differences between weights in the S&P500 and the IG index

Note: Source: Bloomberg, Apollo Chief Economist
Big differences between weights in the S&P500 and the HY index

Note: Source: Bloomberg, Apollo Chief Economist
Synchronized sell-off in credit so far. Little differentiation between credits compared with 2008 and March 2020 episodes.
Synchronized sell-off in credit so far. Little differentiation between credits compared with 2008 and March 2020 episodes.
Valuation of credit versus equities

Source: Bloomberg, Apollo Chief Economist
91% of the US IG market trading below par

Source: Bloomberg, Apollo Chief Economist. Note: Data used for members in the LBSTRUU Index.
44% of the US IG market trading below 90
19% of the US IG market trading below 80
93% of the US MBS market trading below par

Source: Bloomberg, Apollo Chief Economist. Note: Data used for members in the LD10TRUU Index.
Banks tightening credit conditions, HY spread not responding

Source: FRB, Haver Analytics, Bloomberg, Apollo Chief Economist
US share of the world economy and global financial markets

Source: Bloomberg, Haver, Apollo Chief Economist (Note: Bloomberg tickers: MXUS Index, MXWD Index, LUATTRUU Index, BTSYTRUU Index, LF98TRUU Index, LG30TRUU index, LUACTRUU Index, I09805US index)
Corporate debt is coming down as a share of GDP

Source: FRB, Haver Analytics, Apollo Chief Economist
Lower-rated firms are by definition more vulnerable to rising interest rates.

Source: S&P, Apollo Chief Economist
Share of corporate bond market value outstanding rated BBB and below

Source: ICE BofA, Bloomberg, Apollo Chief Economist. Data as of 31st October 2023
IG index duration declining

Source: Bloomberg, Apollo Chief Economist. Note: The measure used is modified duration, which measures the expected change in a bond's price to a 1% change in interest rates.
HY index duration declining

Source: Bloomberg, Apollo Chief Economist. Note: The measure used is modified duration, which measures the expected change in a bond's price to a 1% change in interest rates.
Flow monitor

Source: Bloomberg, Apollo Chief Economist (Note: bito US equity; Crypto ETF flows, BFFUEBK Index: US Bank loans ETF flows, BFFUEHY Index: HY ETF flows; BFFUEIG Index: US IG ETF flows)
Convergence between EU equity vol and EU HY spreads

Source: Bloomberg, Apollo Chief Economist. Note: Tickers used are V2X Index and LP01OAS Index.
24% of bonds in the world trading at less than 3% yield

Source: Bloomberg, Apollo Chief Economist
Corporate bond market distress index

Source: FRB of New York, Apollo Chief Economist (Note: Corporate bonds are a key source of funding for U.S. non-financial corporations and a key investment security for insurance companies, pension funds, and mutual funds. Distress in the corporate bond market can thus both impair access to credit for corporate borrowers and reduce investment opportunities for key financial sub-sectors. CMDI offers a single measure to quantify joint dislocations in the primary and secondary corporate bond markets. Ranging from 0 to 1, a higher level of CMDI corresponds with historically extreme levels of dislocation. CMDI links bond market functioning to future economic activity through a new measure.)
27% of bonds in the HY index are trading with a yield higher than 10%
### US CLO investor base by tranche

<table>
<thead>
<tr>
<th>Tranche</th>
<th>Insurance Company</th>
<th>Depository Institution</th>
<th>Fund or Other Investment Vehicle</th>
<th>Other Financial Organizations (incl. BHCs)</th>
<th>Pension Fund</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>33%</td>
<td>18%</td>
<td>18%</td>
<td>10%</td>
<td>6%</td>
<td>7%</td>
</tr>
<tr>
<td>Senior Notes</td>
<td>26%</td>
<td>19%</td>
<td>28%</td>
<td>10%</td>
<td>3%</td>
<td>8%</td>
</tr>
<tr>
<td>Mezzanine and Junior Notes</td>
<td>54%</td>
<td>13%</td>
<td>9%</td>
<td>7%</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>Equity Notes</td>
<td>4%</td>
<td>29%</td>
<td>2%</td>
<td>17%</td>
<td>20%</td>
<td>27%</td>
</tr>
</tbody>
</table>

Source: TIC, Moody’s data, Fed, Apollo Chief Economist
Auto loan rates rising

Loan Rate: New Auto: $25K: 36-Month Term
Loan Rate: Used 4-Yr Old Auto: $9K: 36-Month Term

Source: RateWatch, Haver Analytics, Apollo Chief Economist
Distressed debt outstanding

Source: Bloomberg, Apollo Chief Economist. Note: Distressed bonds are Corporate Bonds in Americas with spreads > 1,000 bps and distressed loans defined as USD Loans trading at or below 80 in Americas.
Inflation is reversing the hunt for yield

Risk spectrum

RISK-FREE ASSETS

Fed funds ➤ 10y TSY ➤ IG ➤ HY ➤ S&P500 ➤ EM

HIGH RISK ASSETS

Source: Apollo Chief Economist
Dual class IPOs, driven by tech

Source: Jay Ritter, Apollo Chief Economist
Median age of IPOs

Source: Jay Ritter, Apollo Chief Economist
China HY
The yield on China HY is now at 18%
Little contagion from China HY to US and EU credit markets

Source: ICE BofA, Bloomberg, Apollo Chief Economist,
China property crisis intensifying

Source: Bloomberg, Apollo Chief Economist.
China real state sector performance compared to its peers

Normalized as of 30 Dec 2022 = 100

MSCI Asia Pacific Index
BI Hong Kong Real Estate Peers
BI Singapore Real Estate Peers
S&P/ASX 200 A-REIT Index
BI China Real Estate Peers

Source: Bloomberg, Apollo Chief Economist.
Top issuer names
## Top issuer names for IG and HY

<table>
<thead>
<tr>
<th>Rank</th>
<th>Top 50 Investment Grade corporate bond issuers</th>
<th>Top 50 High Yield corporate bond issuers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bank of America Corporation</td>
<td>Ford Motor Credit Company LLC</td>
</tr>
<tr>
<td>2</td>
<td>JPMorgan Chase &amp; Co.</td>
<td>CCO Holdings LLC / CCO Holdings Capital Corp.</td>
</tr>
<tr>
<td>3</td>
<td>Morgan Stanley</td>
<td>Tenet Healthcare Corporation</td>
</tr>
<tr>
<td>4</td>
<td>Citigroup Inc.</td>
<td>TransDigm Inc.</td>
</tr>
<tr>
<td>5</td>
<td>Goldman Sachs Group Inc.</td>
<td>Carnival Corporation</td>
</tr>
<tr>
<td>6</td>
<td>Wells Fargo &amp; Company</td>
<td>Ford Motor Company</td>
</tr>
<tr>
<td>7</td>
<td>Apple Inc.</td>
<td>Royal Caribbean Group</td>
</tr>
<tr>
<td>8</td>
<td>HSBC Holdings PLC</td>
<td>CSC Holdings LLC</td>
</tr>
<tr>
<td>9</td>
<td>AT&amp;T Inc.</td>
<td>Community Health Systems Incorporated</td>
</tr>
<tr>
<td>10</td>
<td>Oracle Corporation</td>
<td>DISH DBS Corporation</td>
</tr>
<tr>
<td>11</td>
<td>Verizon Communications Inc.</td>
<td>Bausch Health Companies Inc</td>
</tr>
<tr>
<td>12</td>
<td>Comcast Corporation</td>
<td>Caesars Entertainment Inc New</td>
</tr>
<tr>
<td>13</td>
<td>UnitedHealth Group Inc.</td>
<td>Sirius XM Radio Inc</td>
</tr>
<tr>
<td>14</td>
<td>Amazon.com Inc.</td>
<td>Iron Mountain Inc</td>
</tr>
<tr>
<td>15</td>
<td>Amgen Inc.</td>
<td>OneMain Financial Corporation</td>
</tr>
<tr>
<td>16</td>
<td>JBS Group AG</td>
<td>Advantagem Loyalty Ltd/ American Airlines Inc</td>
</tr>
<tr>
<td>17</td>
<td>CVS Health Corp</td>
<td>Albertsons Cos Inc / Safeway Inc / New Albertsons LP / Albertsons LLC / Albertsons Safeway LLC</td>
</tr>
<tr>
<td>18</td>
<td>T-Mobile USA Inc.</td>
<td>Mozart Debt Mergers Subordinated Inc.</td>
</tr>
<tr>
<td>19</td>
<td>Mitsubishi UFJ Financial Group Inc.</td>
<td>Equitrans Midstream Corporation</td>
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<tr>
<td>20</td>
<td>AbbVie Inc.</td>
<td>Altice France S.A</td>
</tr>
<tr>
<td>21</td>
<td>The Boeing Company</td>
<td>1017778 B C Unlimited Liability Company / New Red Finance Inc</td>
</tr>
<tr>
<td>22</td>
<td>Intel Corporation</td>
<td>Bombardier Inc</td>
</tr>
<tr>
<td>23</td>
<td>Microsoft Corporation</td>
<td>Ball Corporation</td>
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<tr>
<td>24</td>
<td>Barclays PLC</td>
<td>United Rentals (North America) Inc.</td>
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<tr>
<td>25</td>
<td>Sumitomo Mitsui Financial Group Inc.</td>
<td>Hilton Domestic Operating Co Inc.</td>
</tr>
<tr>
<td>26</td>
<td>Walt Disney Company</td>
<td>Calpine Corporation</td>
</tr>
<tr>
<td>27</td>
<td>Charter Communications Operating LLC/ Charter Communications Operating Capital Corp.</td>
<td>Lahn Enterprises L.P / Lahn Enterprises Finance Corporation</td>
</tr>
<tr>
<td>28</td>
<td>Home Depot Inc</td>
<td>Post Holdings Inc.</td>
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<tr>
<td>29</td>
<td>Walmart Inc.</td>
<td>Level 3 Financing Inc.</td>
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<td>30</td>
<td>Jdove Companies Inc.</td>
<td>Univision Communications Inc.</td>
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<td>31</td>
<td>Sinueheer-Buschi Inbav Worldwide Inc.</td>
<td>Vistra Operations Co LLC.</td>
</tr>
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<td>32</td>
<td>Pfizer Investment Enterprises Pte Ltd.</td>
<td>The Goodyear Tire &amp; Rubber Company</td>
</tr>
<tr>
<td>33</td>
<td>XCA Inc.</td>
<td>Venture Global LNG Inc.</td>
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<td>34</td>
<td>General Motors Financial Company Inc.</td>
<td>FirstEnergy Corp.</td>
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<tr>
<td>35</td>
<td>Pacific Gas and Electric Company</td>
<td>Unit Group LP/Uniti Fiber Holdings Inc/Uniti Group Finance 2019 Inc/ CCL Capital LLC</td>
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<tr>
<td>36</td>
<td>Energy Transfer LP</td>
<td>HUB International Ltd.</td>
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<tr>
<td>37</td>
<td>Broadcom Inc</td>
<td>Bath &amp; Body Works Inc.</td>
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<td>38</td>
<td>RNP Paribas SA</td>
<td>Service Properties Trust</td>
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<td>39</td>
<td>Royal Bank of Canada</td>
<td>Canvica Co</td>
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<td>40</td>
<td>Kristol-Mays Squibb Company</td>
<td>Transocean Inc.</td>
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<td>41</td>
<td>Raytheon Technologies Corporation</td>
<td>Venture Global Calcasieu Pass LLC</td>
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<td>42</td>
<td>International Business Machines Corporation</td>
<td>HUM Brands Inc</td>
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<td>43</td>
<td>Merck &amp; Co. Inc.</td>
<td>Newell Brands Inc.</td>
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<td>44</td>
<td>Toyota Motor Credit Corp.</td>
<td>SFL Environmental Inc.</td>
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<td>45</td>
<td>Shell International Finance B.V.</td>
<td>Uber Technologies Inc.</td>
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<td>46</td>
<td>Philip Morris International Inc.</td>
<td>Navient Corporation</td>
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<td>47</td>
<td>J.S. Bancorp.</td>
<td>NCL Corporation Ltd.</td>
</tr>
<tr>
<td>49</td>
<td>Lowe's Home Corporation</td>
<td>Mauser Packaging Solutions Holding Company</td>
</tr>
<tr>
<td>50</td>
<td>PepsiCo Inc</td>
<td>Vodafone Group PLC</td>
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</tbody>
</table>

Source: Bloomberg, Apollo Chief Economist. Note: Top 50 issuers for COA0 and HOA0 Index
US: More downside risk in credit as leveraged loan weakest links increase in Q3

Source: Pitchbook, LCD, Morningstar LSTA US Leveraged Loan Index, Apollo Chief Economist (Data through June 30, 2023) (SD and D - An obligor rated ‘SD’ (Selective Default) or ‘D’ has failed to pay one or more of its financial obligations (rated or unrated) when it came due. A ‘D’ rating is assigned when Standard & Poor’s believes that the default will be a general default and that the obligor will fail to pay all or substantially all of its obligations as they come due. An ‘SD’ rating is assigned when Standard & Poor’s believes that the obligor has selectively defaulted on a specific issue or class of obligations, but it will continue to meet its payment obligations on other issues or classes of obligations in a timely manner.)
Japanese investors record selling of US credit

Source: US Treasury, Bloomberg, Apollo Chief Economist
Torsten Slok joined Apollo in August 2020 as Chief Economist and he leads Apollo's macroeconomic and market analysis across the platform.

Prior to joining, Mr. Slok worked for 15 years as Chief Economist at Deutsche Bank where his team was top ranked in the annual Institutional Investor survey for a decade. Prior to joining Deutsche Bank Mr. Slok worked at the IMF in Washington, DC and at the OECD in Paris.

Mr. Slok has a Ph.D in Economics and has studied at the University of Copenhagen and Princeton University.