#### APOLLO

# Credit market outlook: A recession is coming, creating opportunities for credit investors

Torsten Slok, Jyoti Agarwal, and Rajvi Shah

tslok@apollo.com

**Apollo Global Management** 

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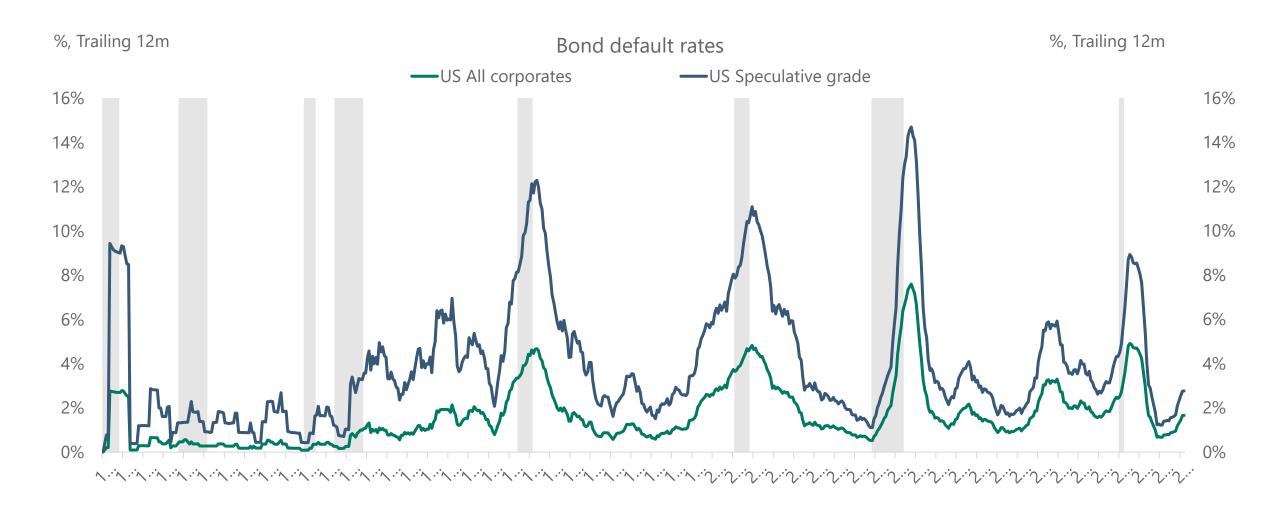
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A default cycle has started

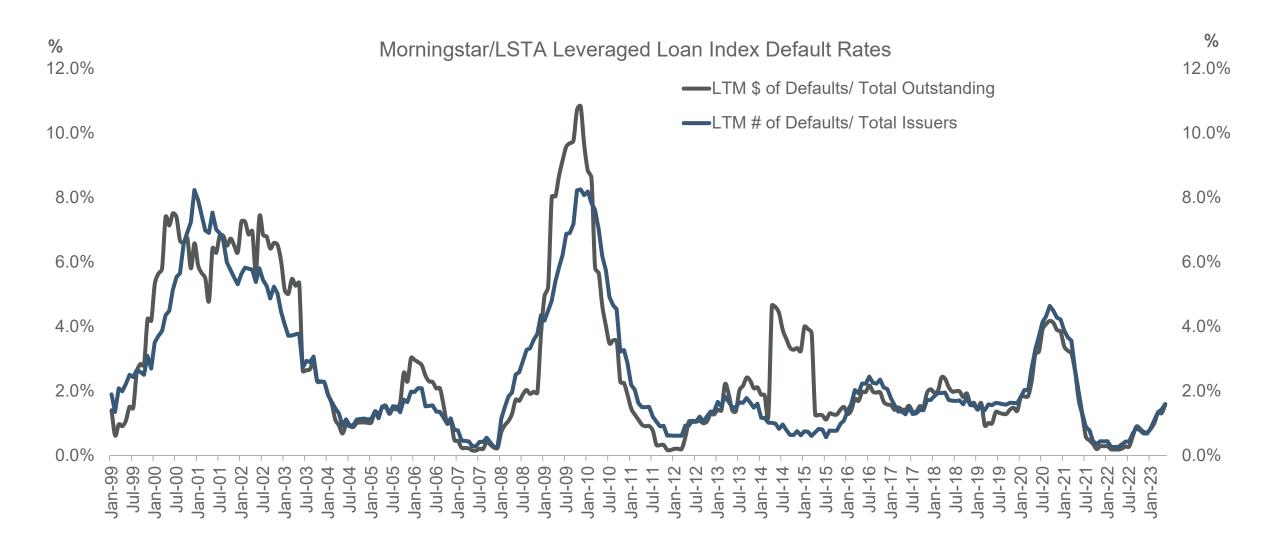


#### US bond default rates



Source: Moody's Analytics, Apollo Chief Economist

#### Leveraged loan index default rates starting to rise



Source: Pitchbook LCD, Apollo Chief Economist

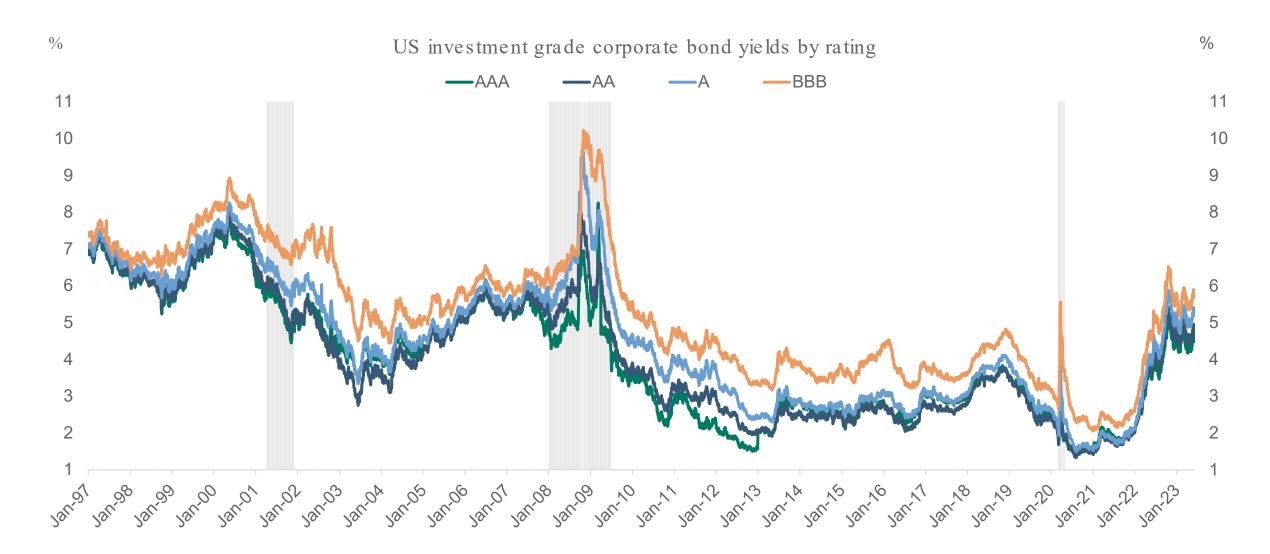
## Yields



#### US IG yield around 5.4% and HY yield around 8.5%

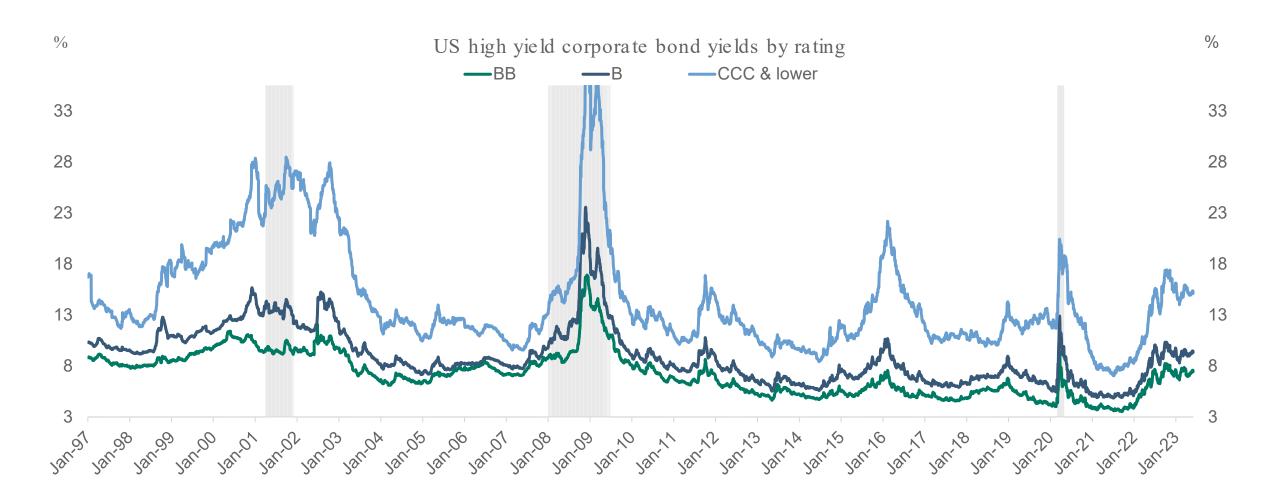


#### US IG yield levels, by rating

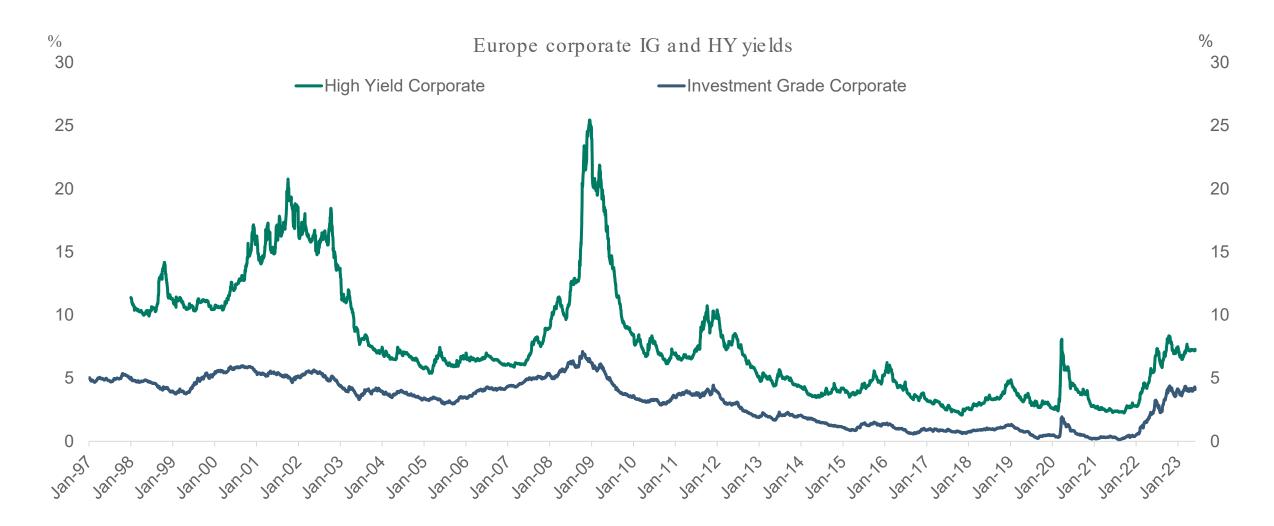


Source: ICE BofA, Haver Analytics, Apollo Chief Economist

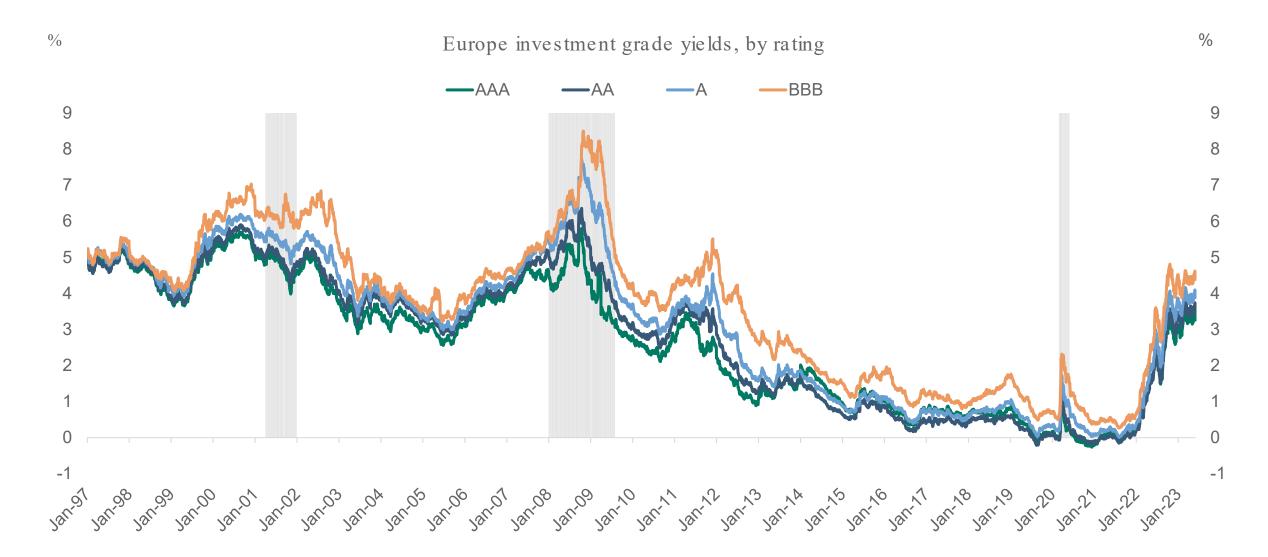
#### US HY yield levels, by rating



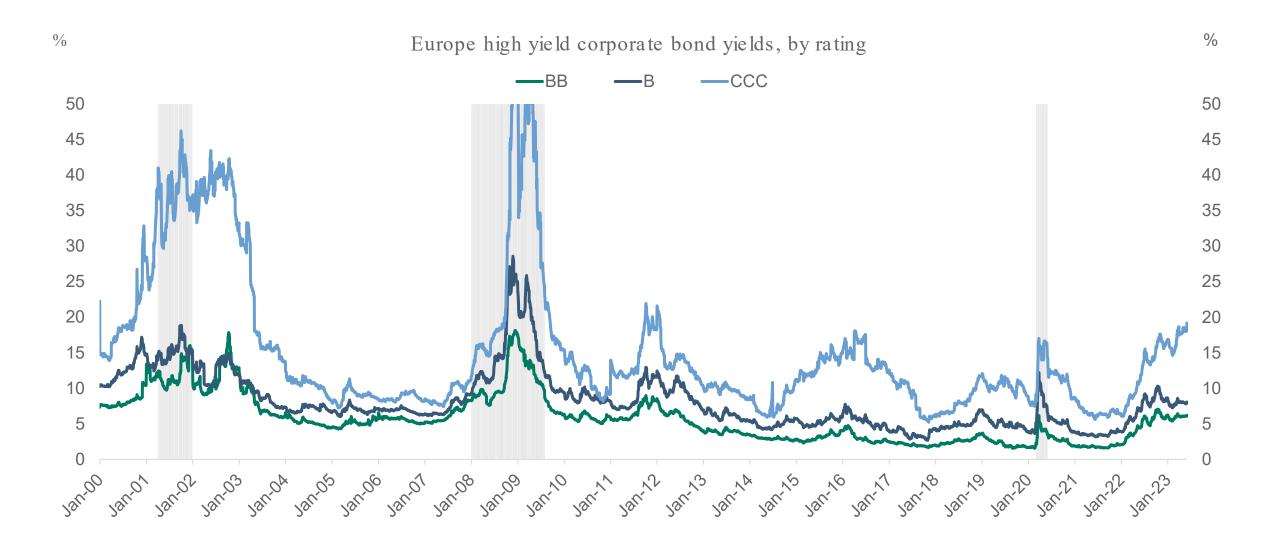
#### European corporate IG and HY yields



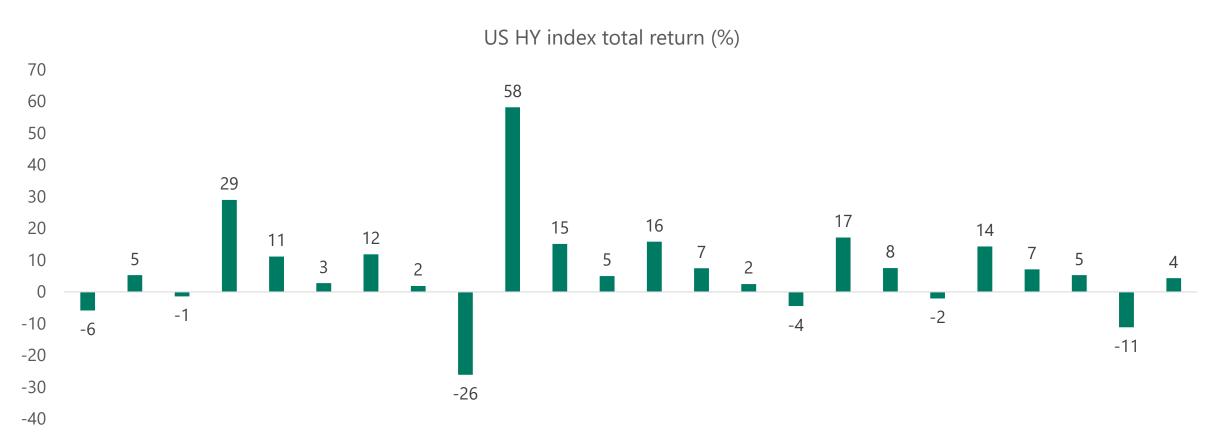
#### European IG yield levels, by rating



#### European HY yield levels, by rating



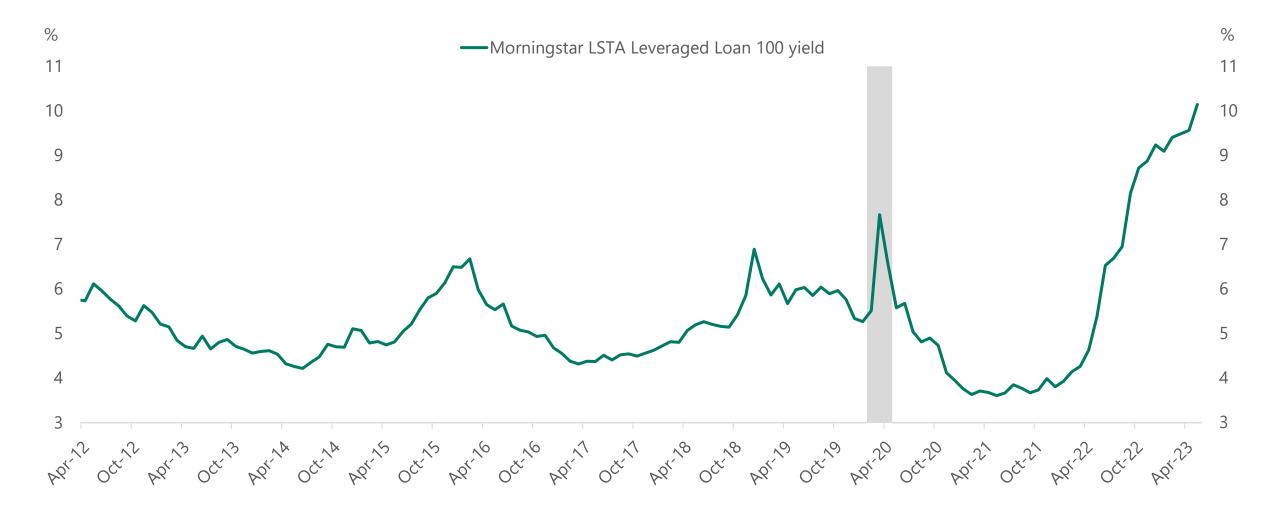
#### Annual returns for HY



2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 YTD

Source: Bloomberg, Apollo Chief Economist

#### Yield for the leveraged loan index at 10.1%



Source: Pitchbook LCD, Apollo Chief Economist

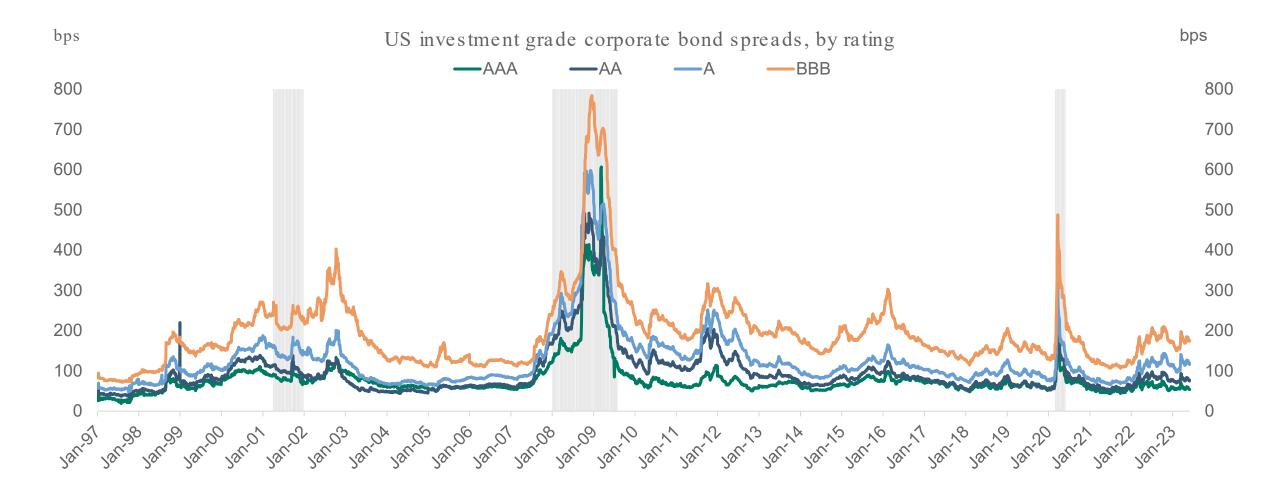
# Spreads



#### Credit spreads wider, but not pricing in a recession



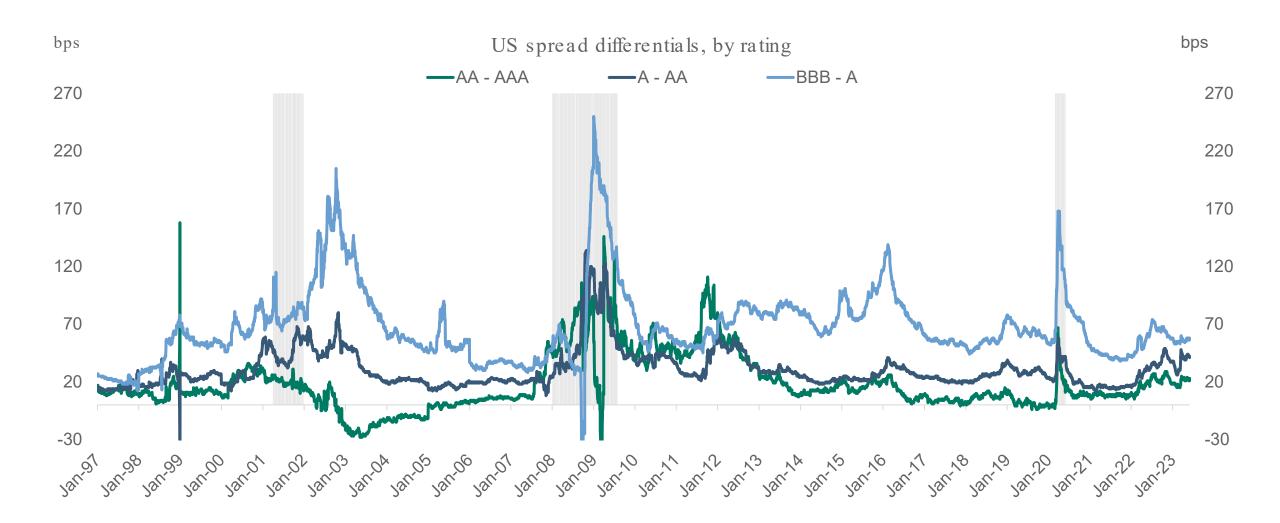
#### IG spreads by rating



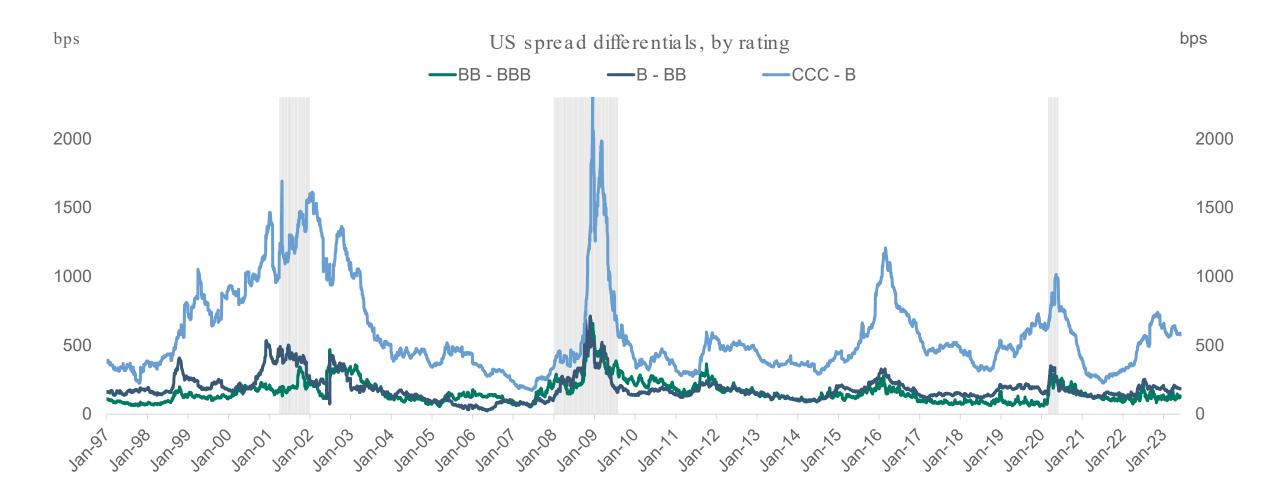
#### HY spreads by rating



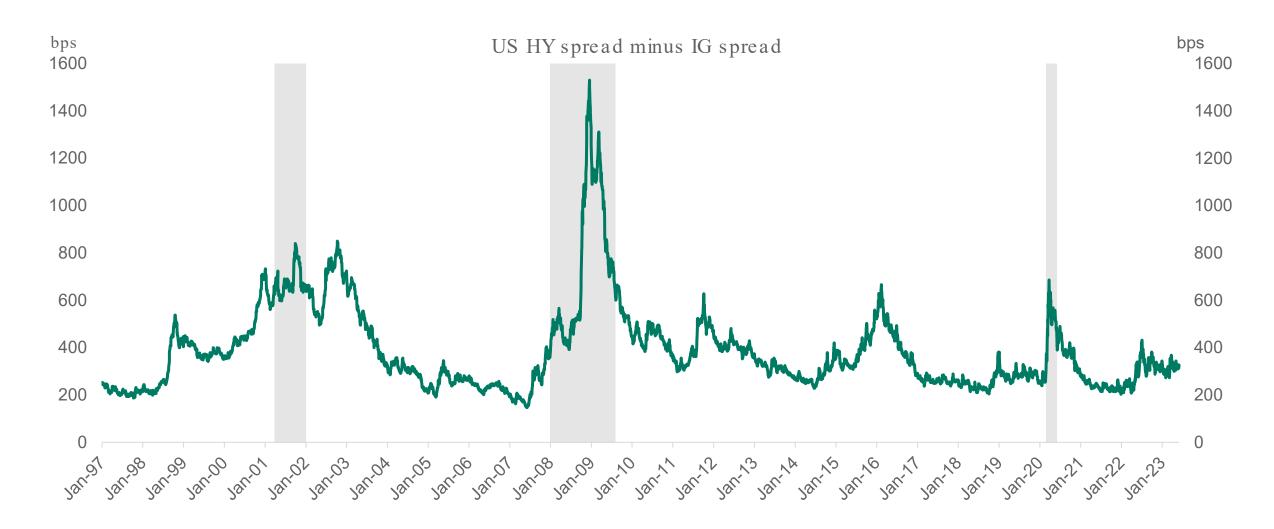
#### IG quality spreads, some differentiation between BBB and single-A



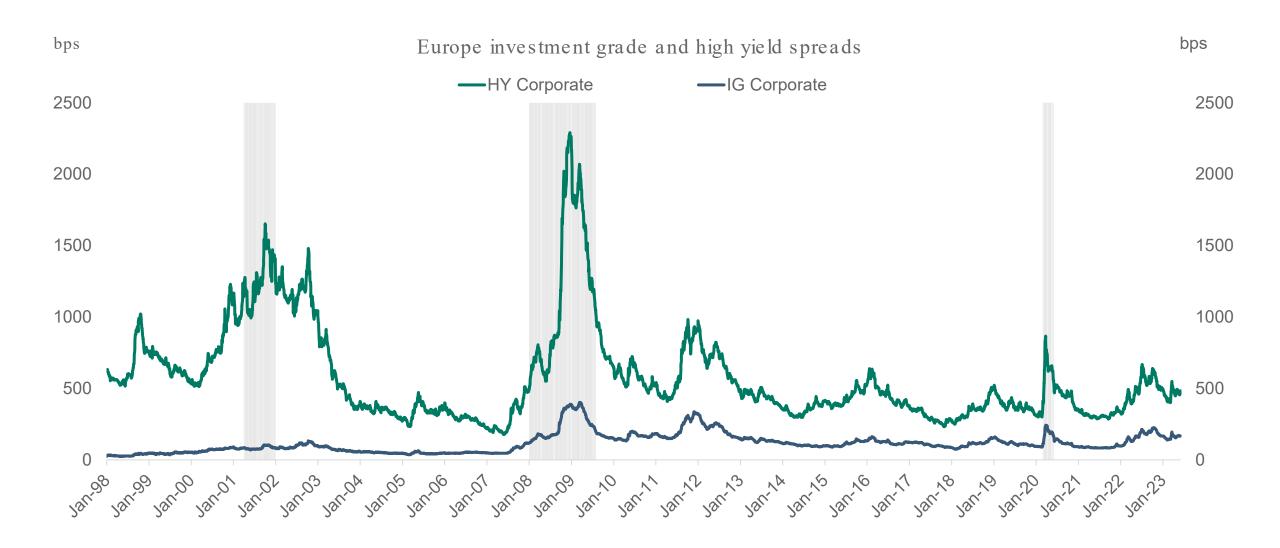
#### HY quality spreads, some differentiation between CCC and B



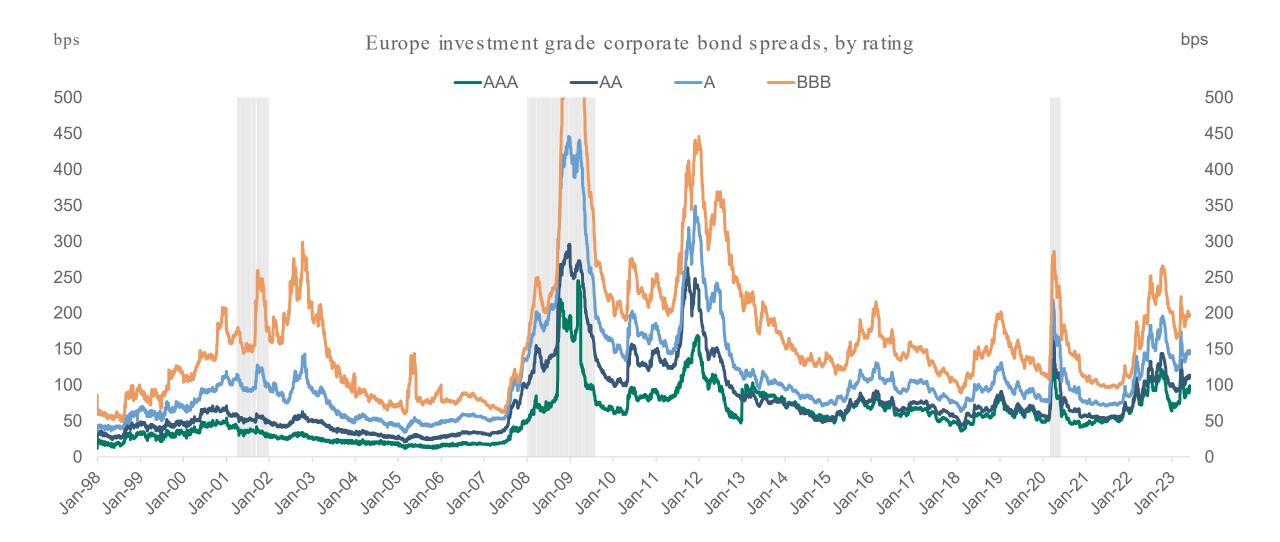
#### US HY spread minus IG spread



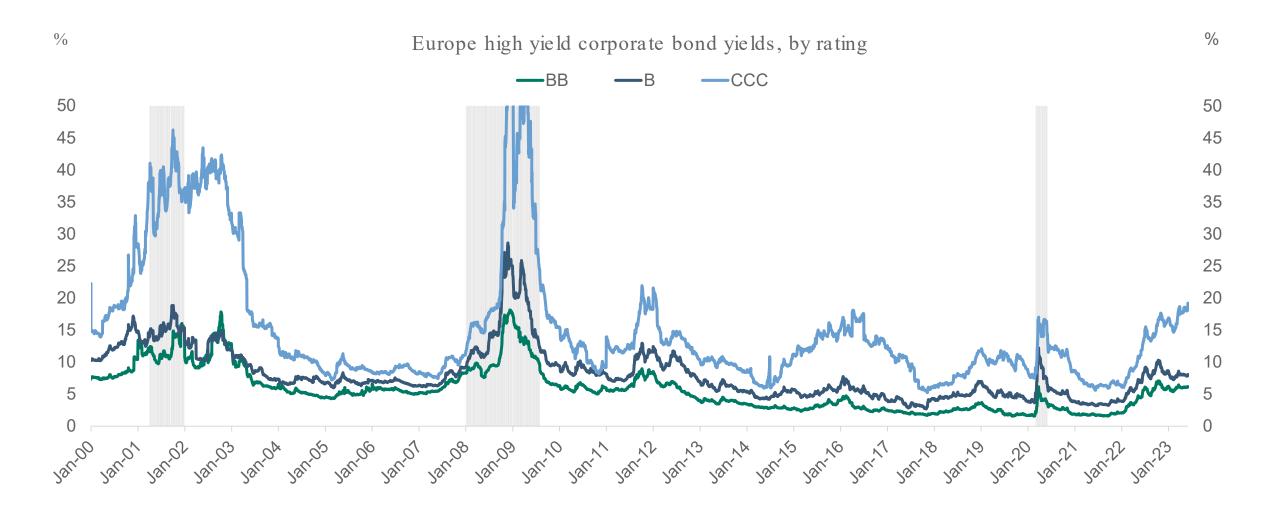
#### European IG and HY spreads



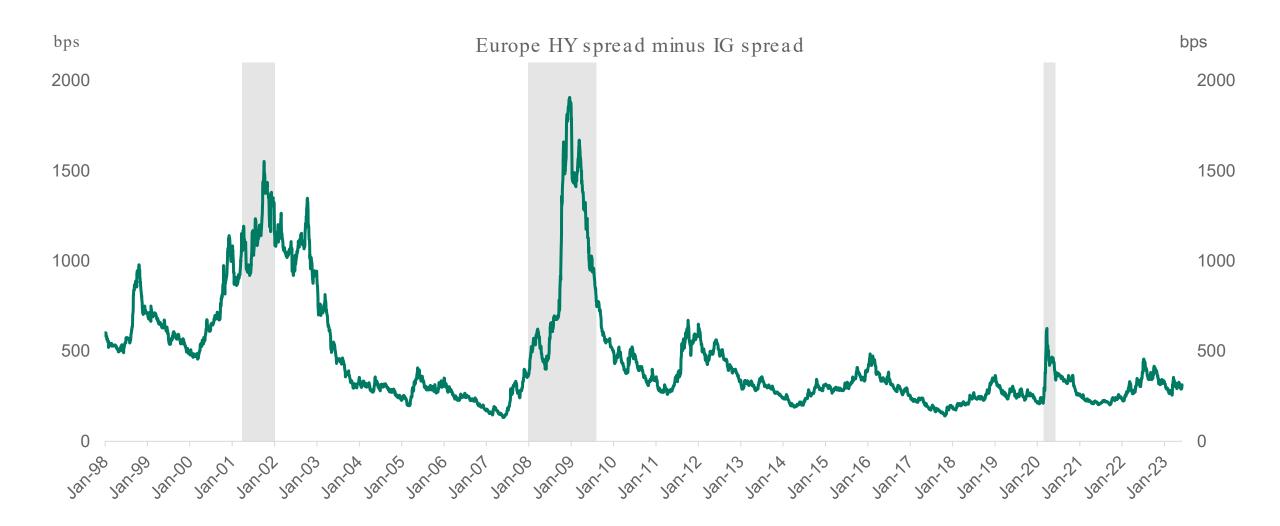
#### European IG spreads by rating



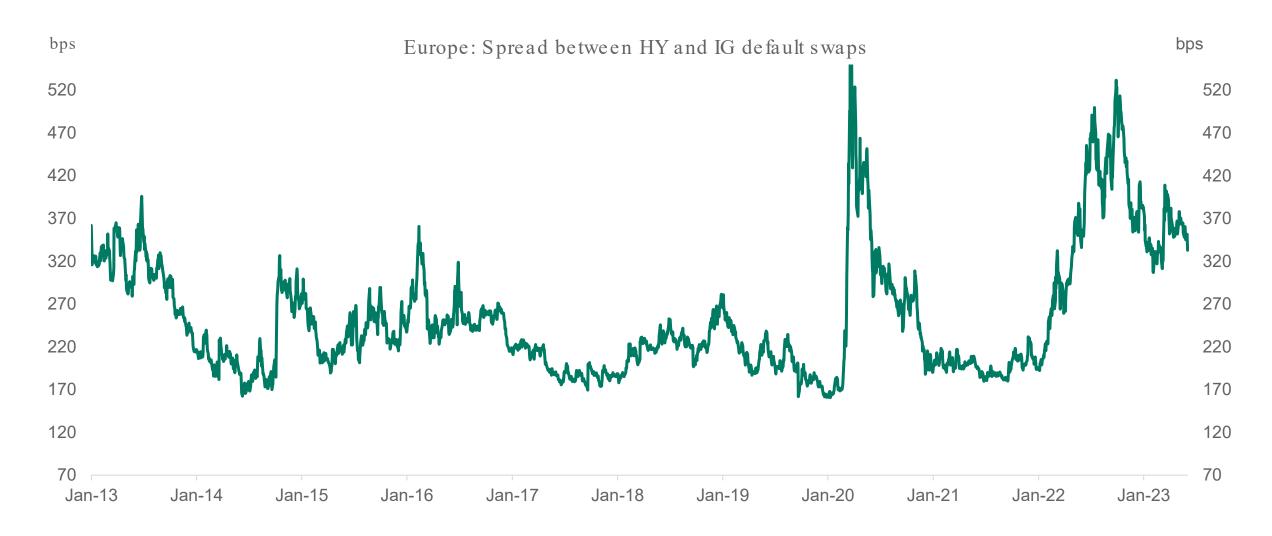
#### European HY spreads by rating



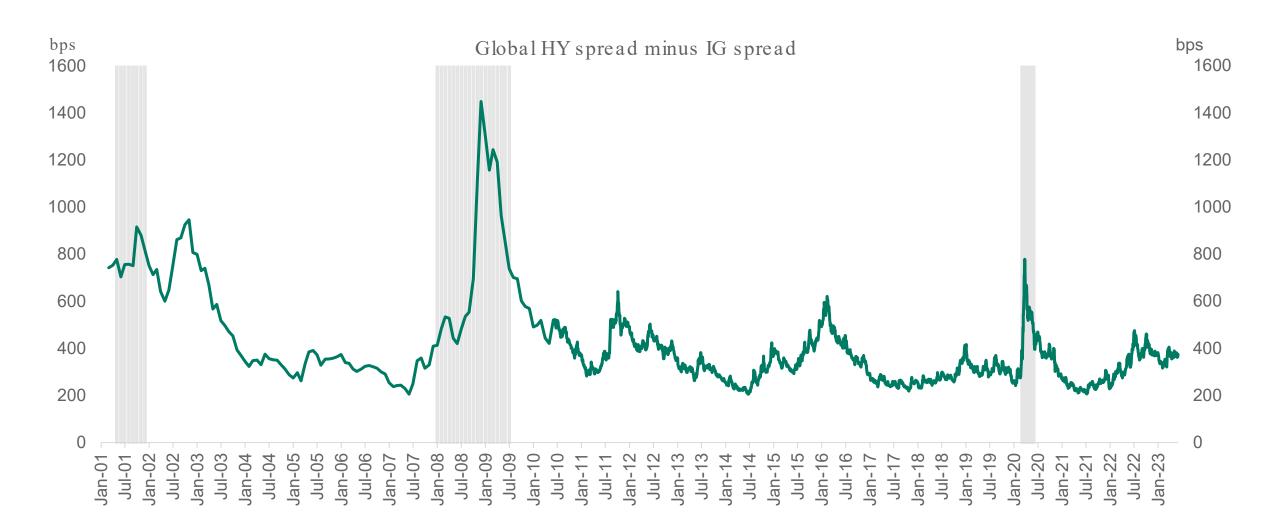
#### European HY spread minus IG spread

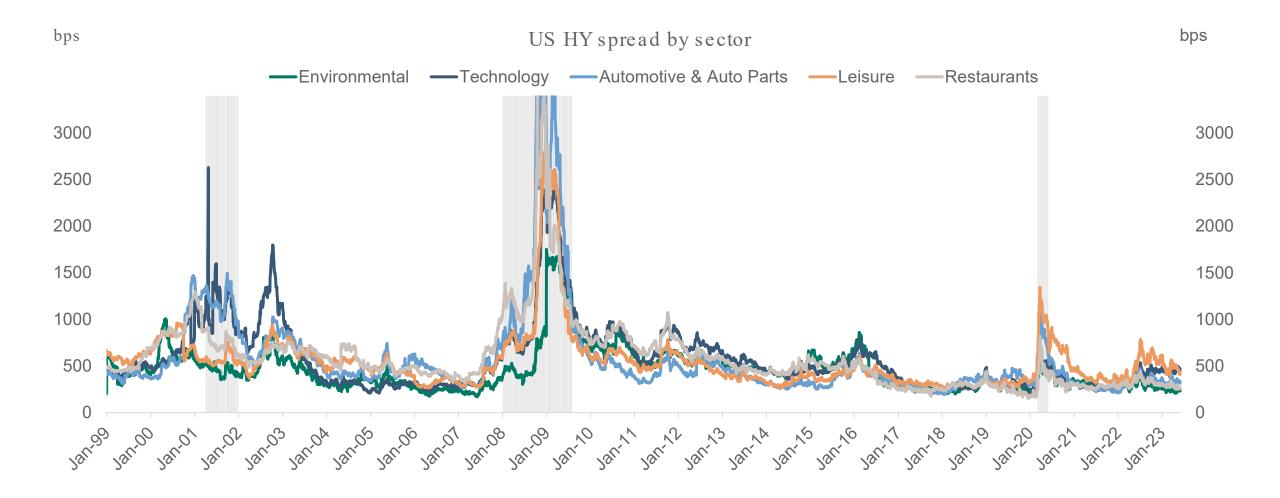


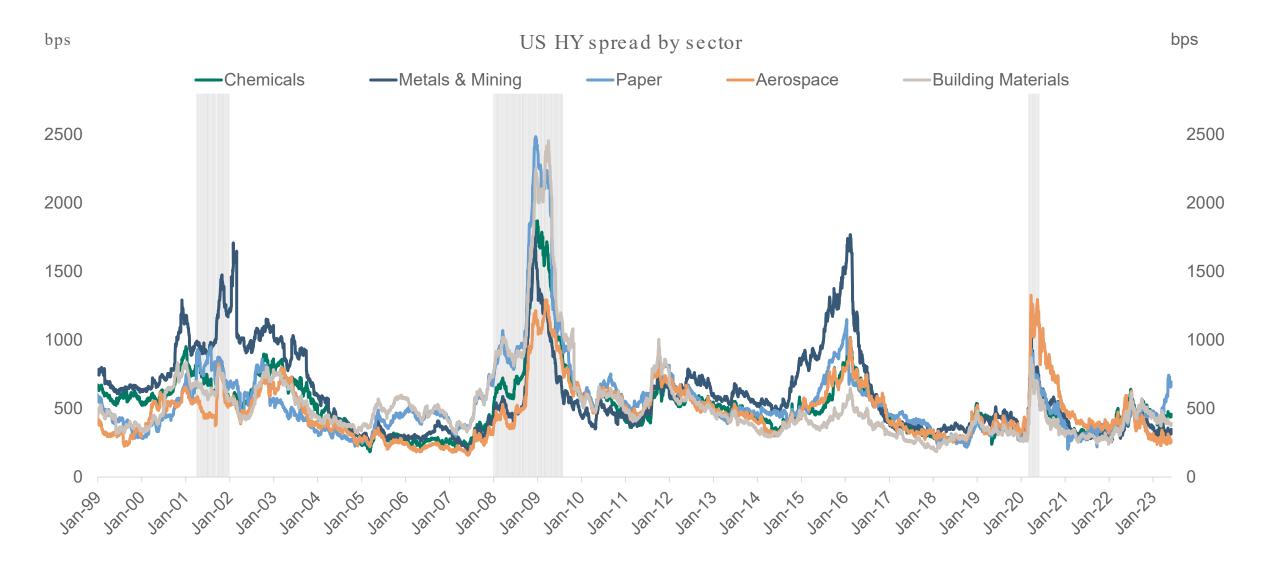
#### Spread between Europe HY and IG default swaps

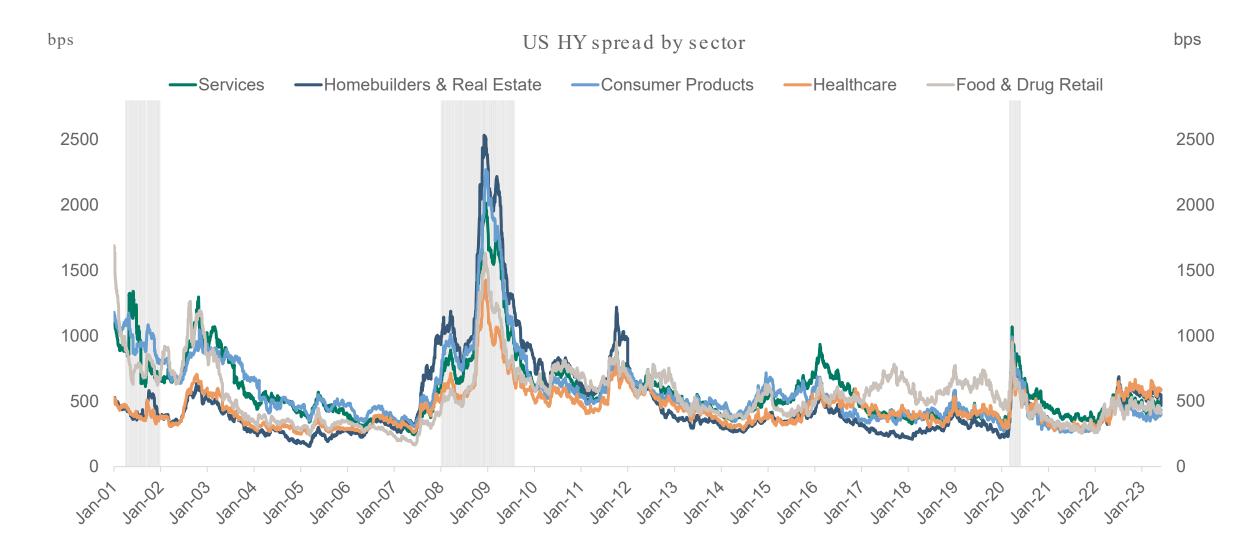


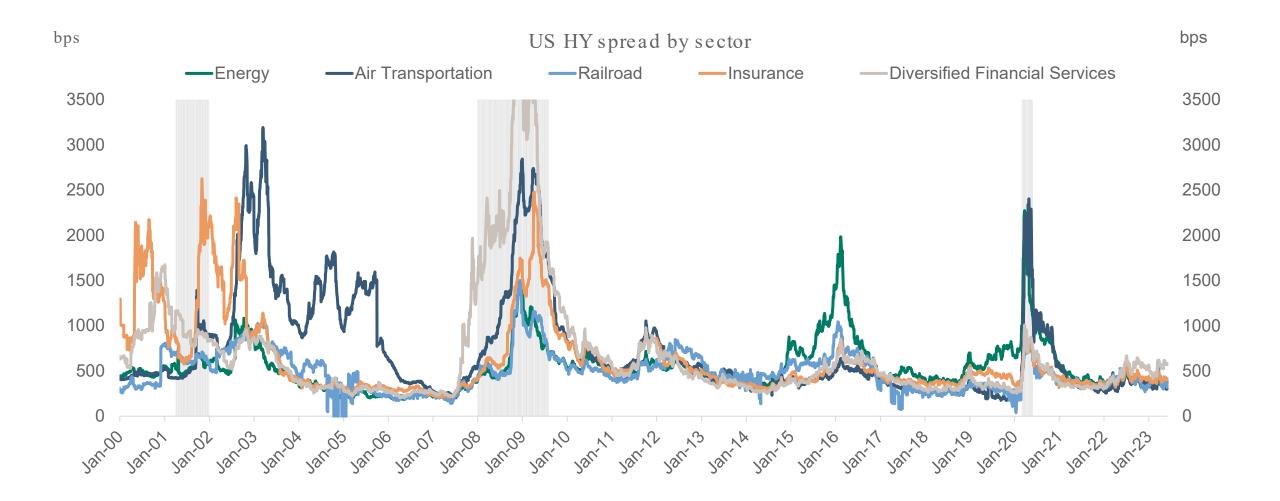
#### Global HY spread minus global IG spread



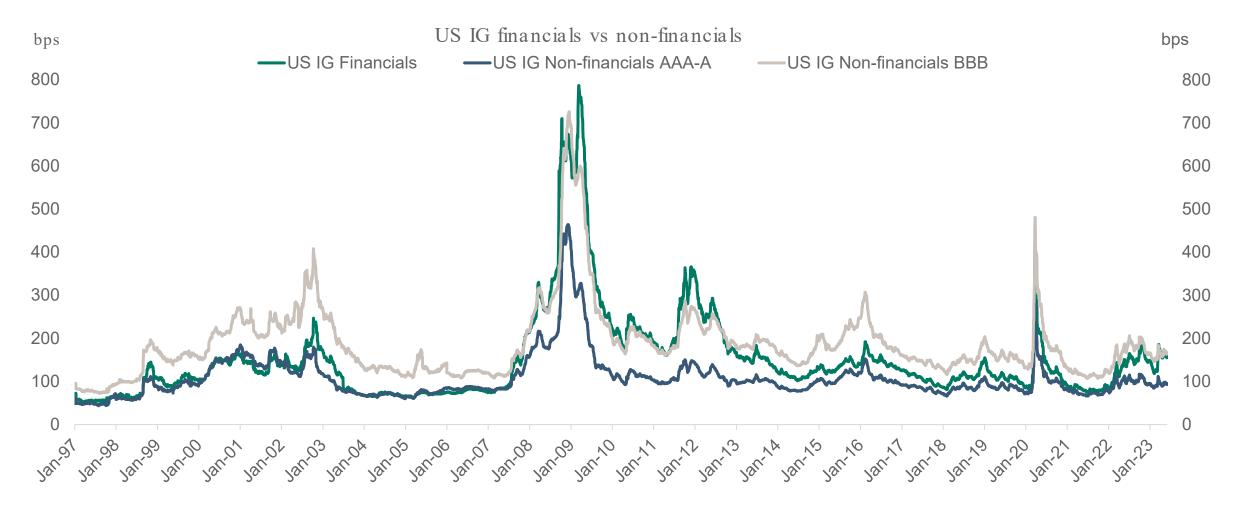




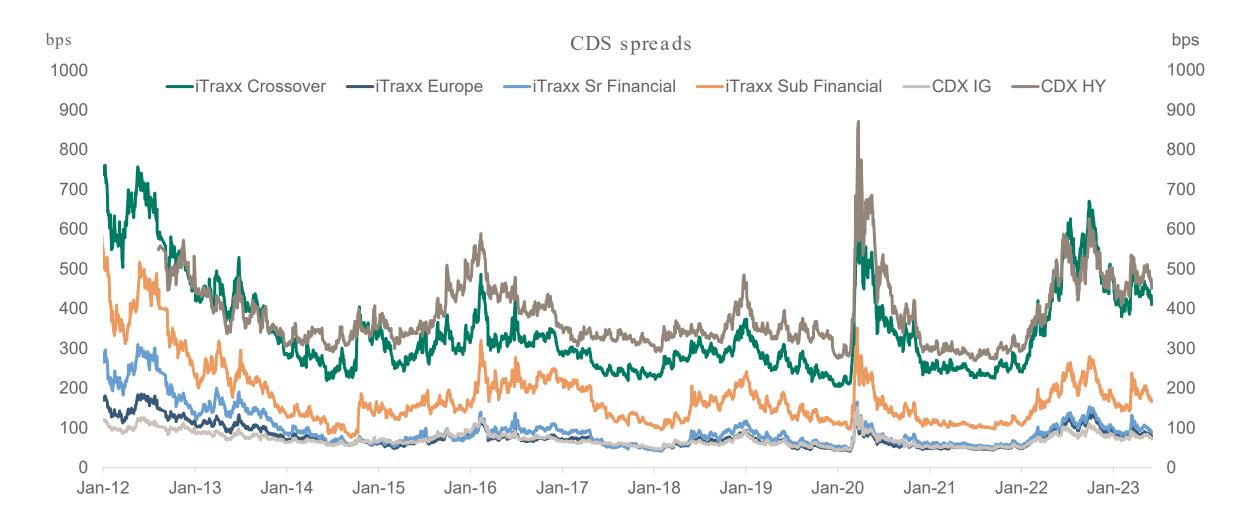




#### IG spreads for financials and non-financials

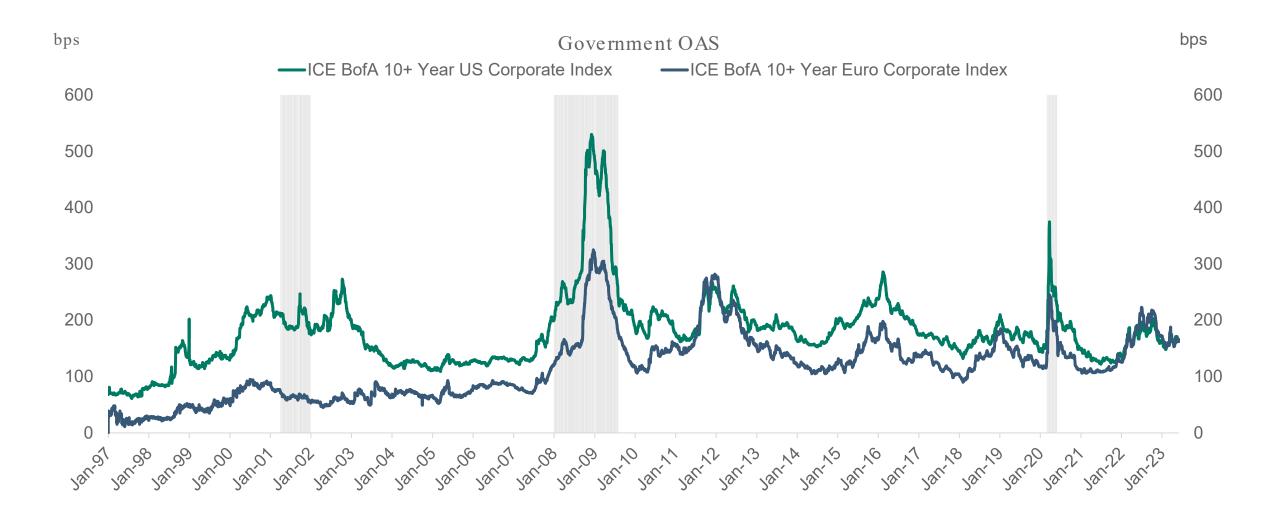


#### CDS spreads



Source: Markit, Bloomberg, Apollo Chief Economist

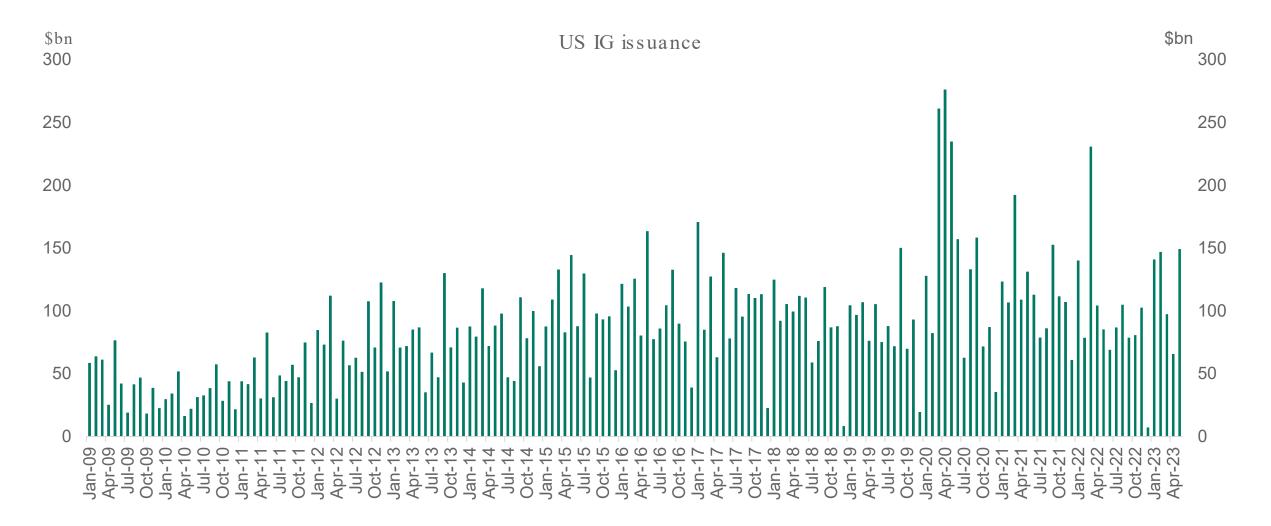
#### Long-duration IG spreads in US and Europe



### New issuance

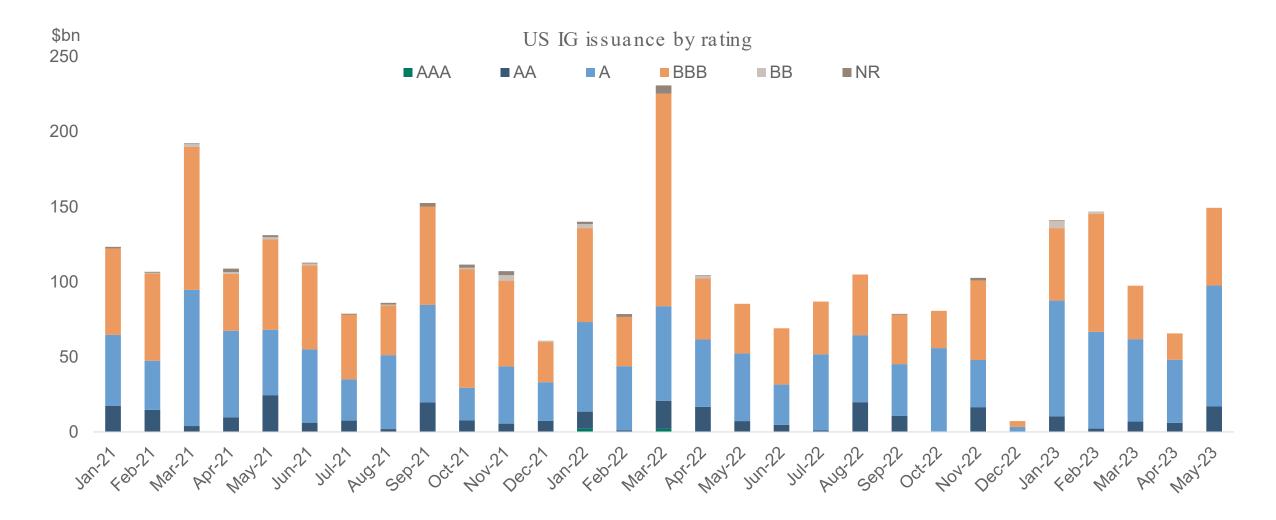


#### US IG issuance

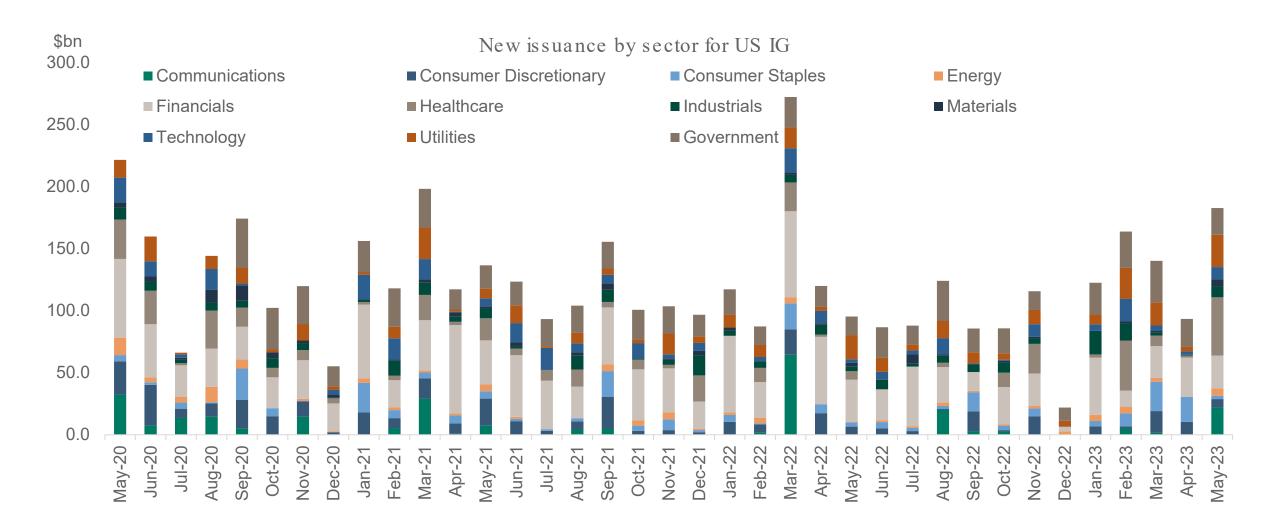


Source: Pitchbook LCD, Apollo Chief Economist

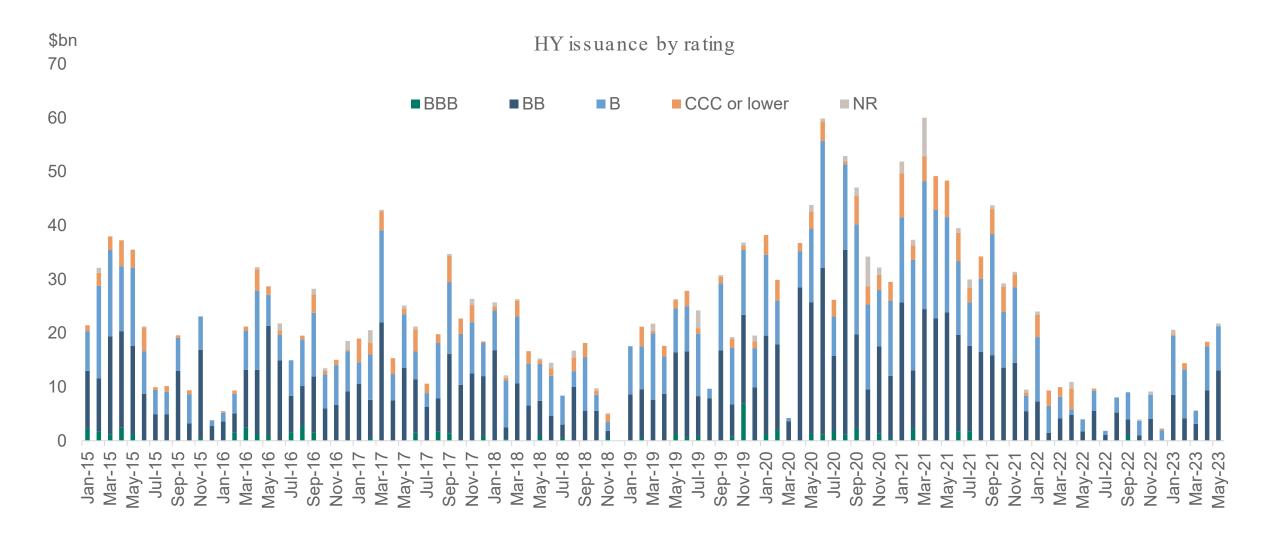
### IG issuance by rating



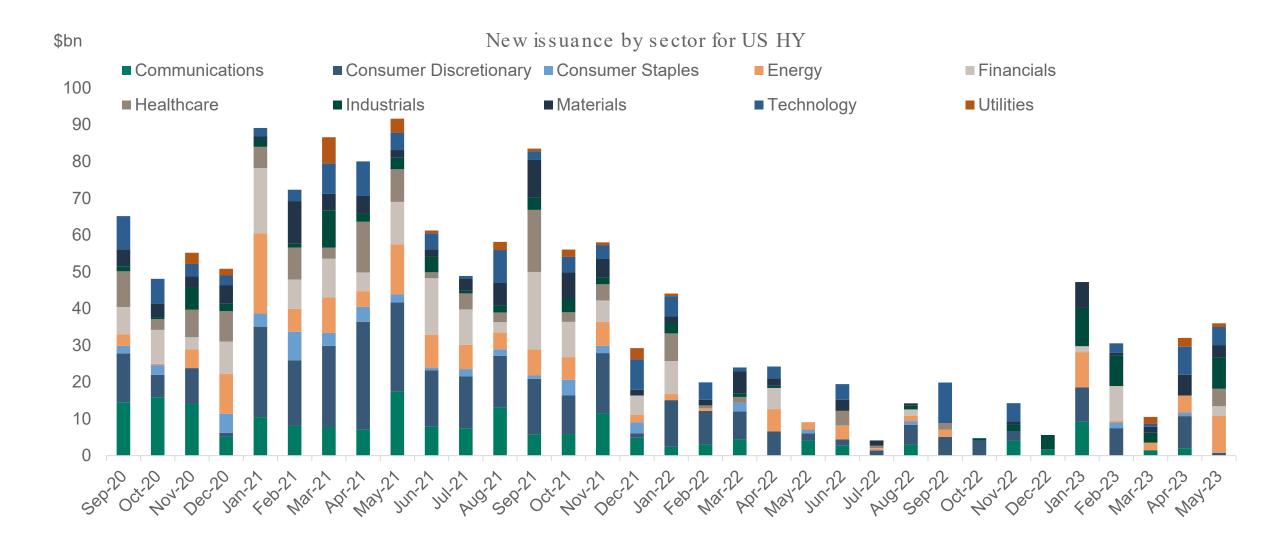
#### Sector distribution of new IG issuance



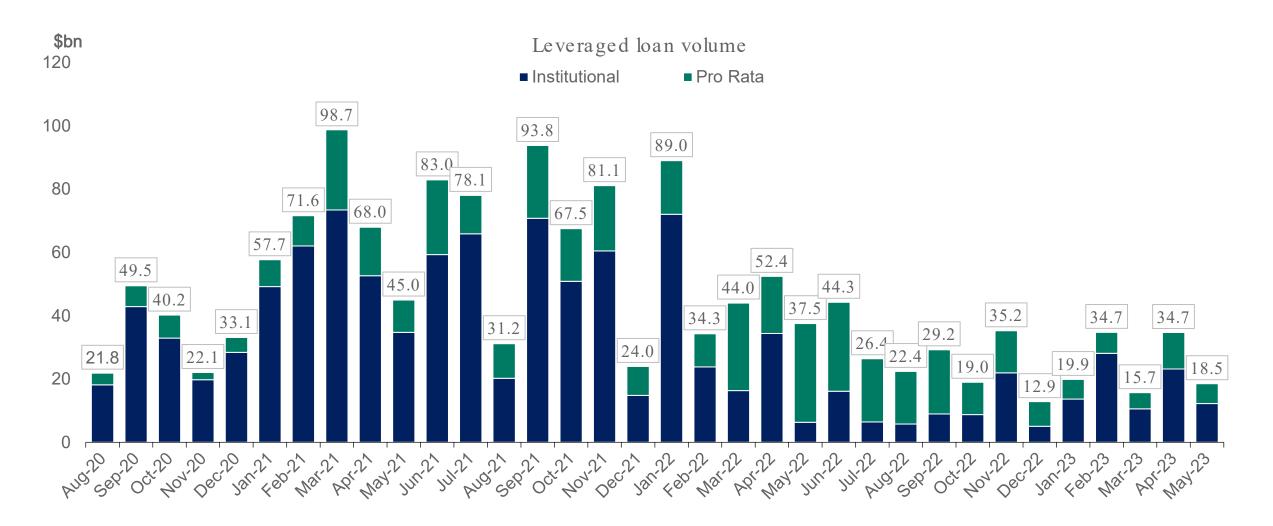
### HY issuance by rating



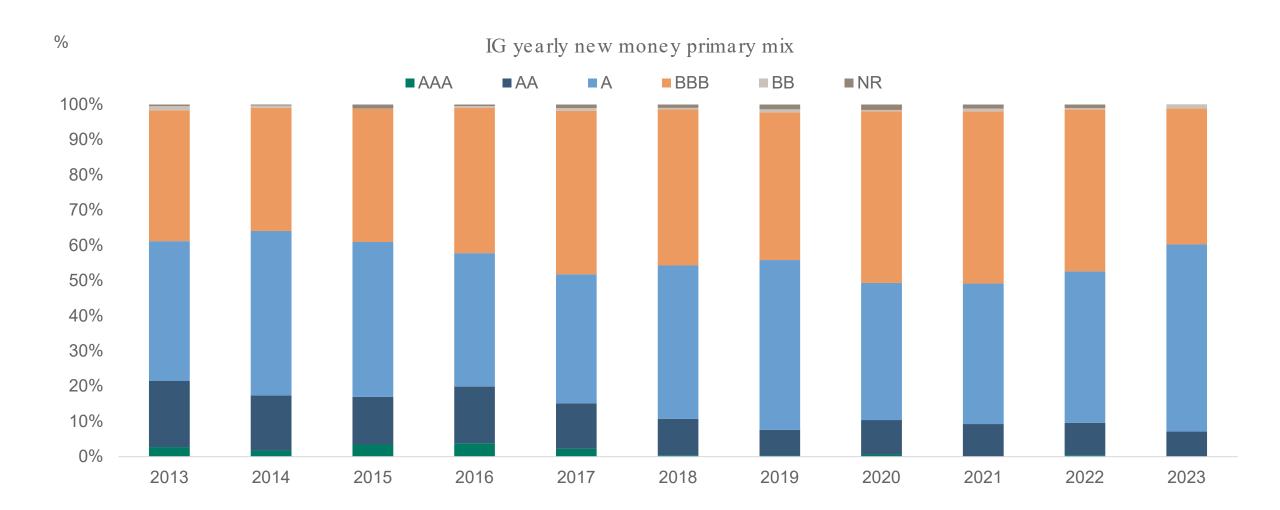
#### Sector distribution of new HY issuance



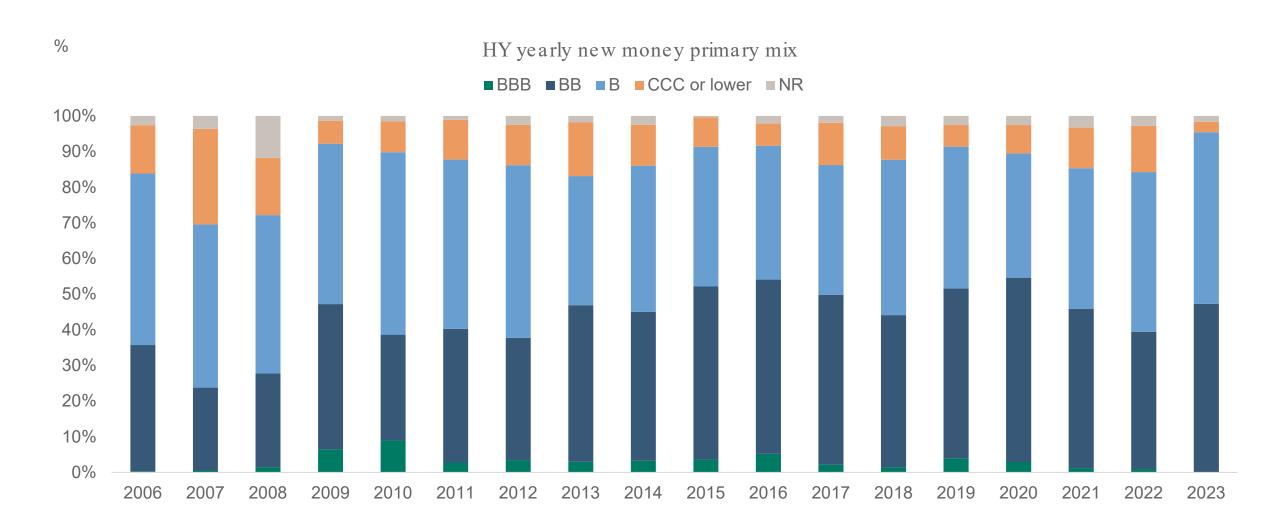
### Leveraged loan volume



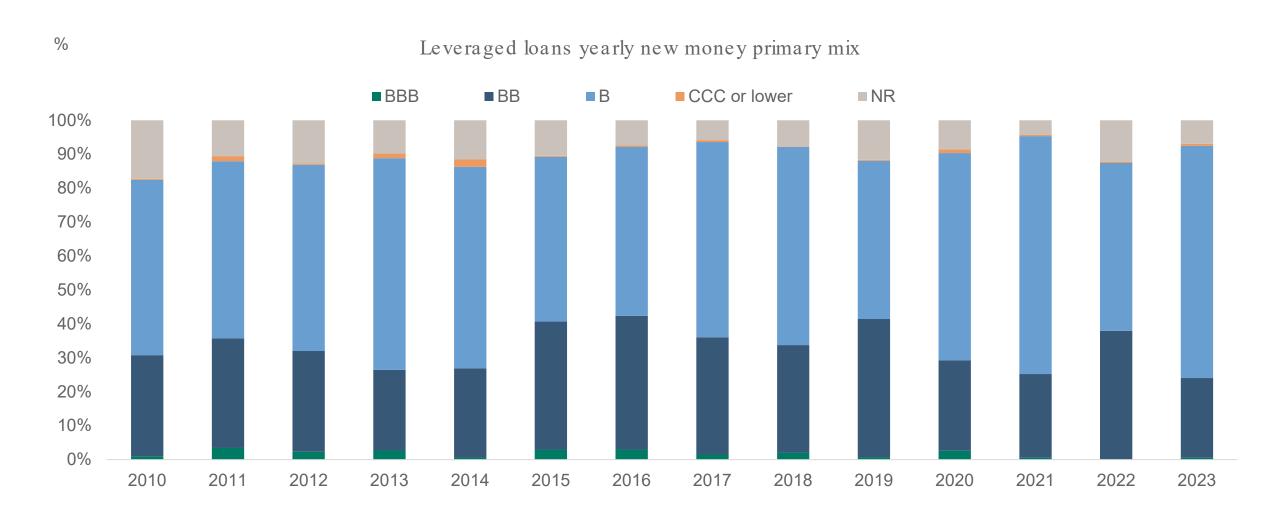
# IG new money primary mix



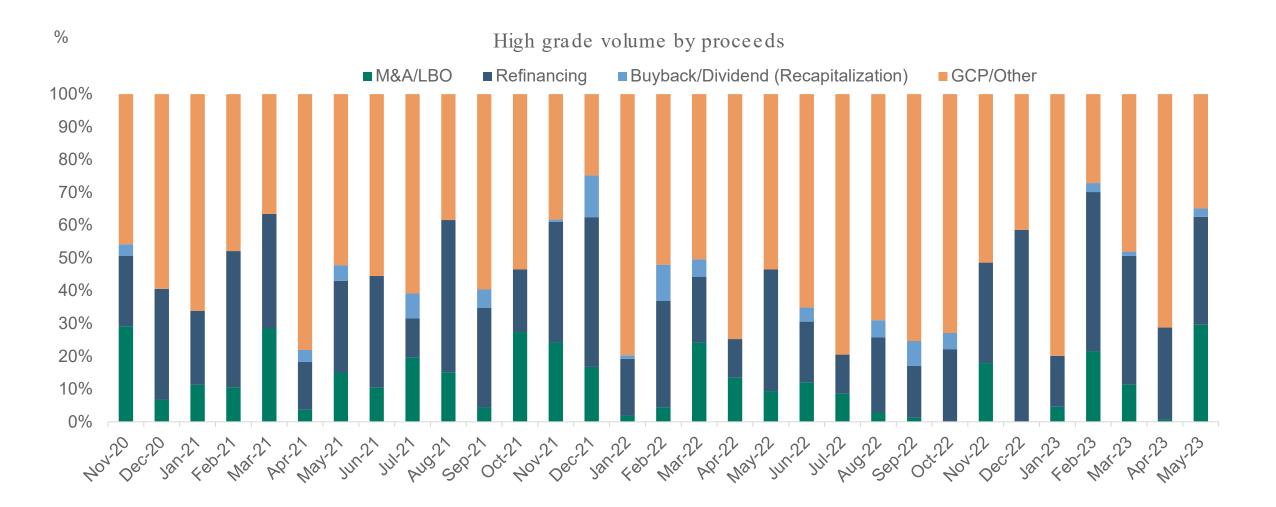
## HY new money primary mix



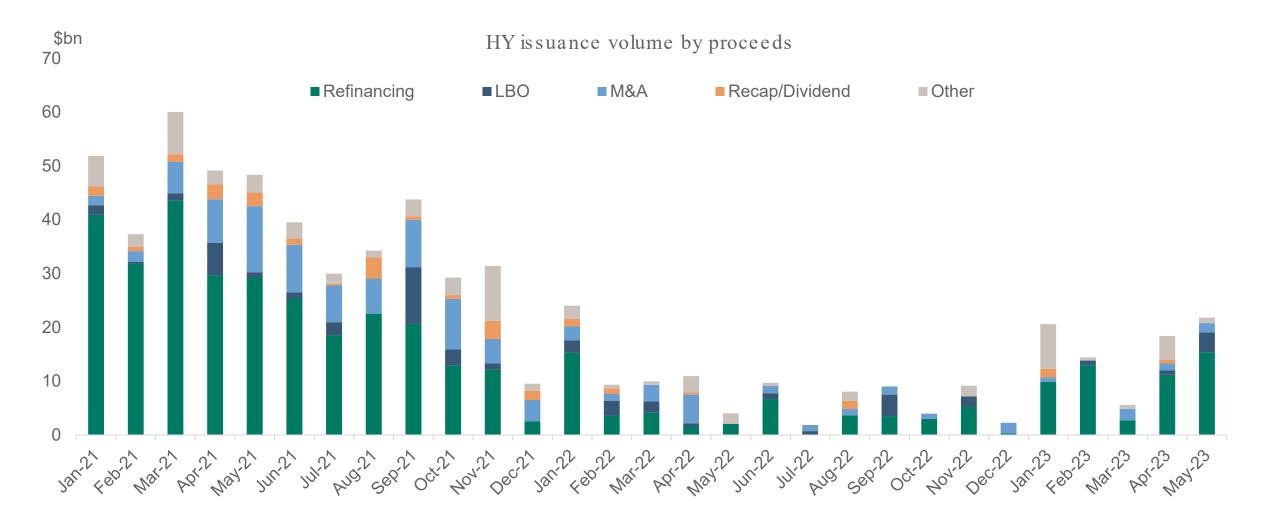
# Loans new money primary mix



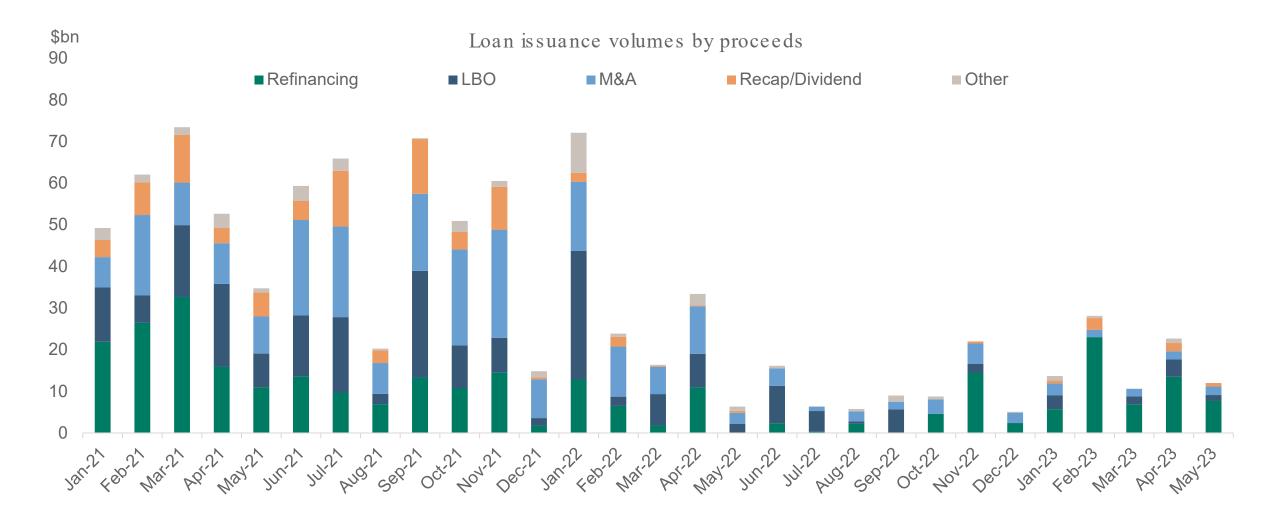
### High grade volume by proceeds



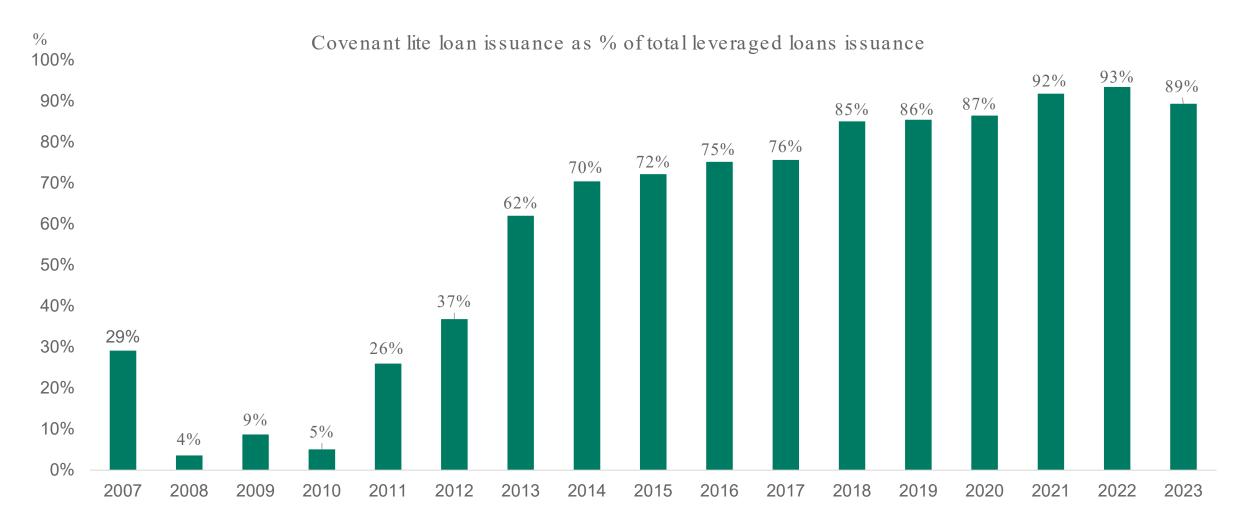
### High yield volumes by proceeds



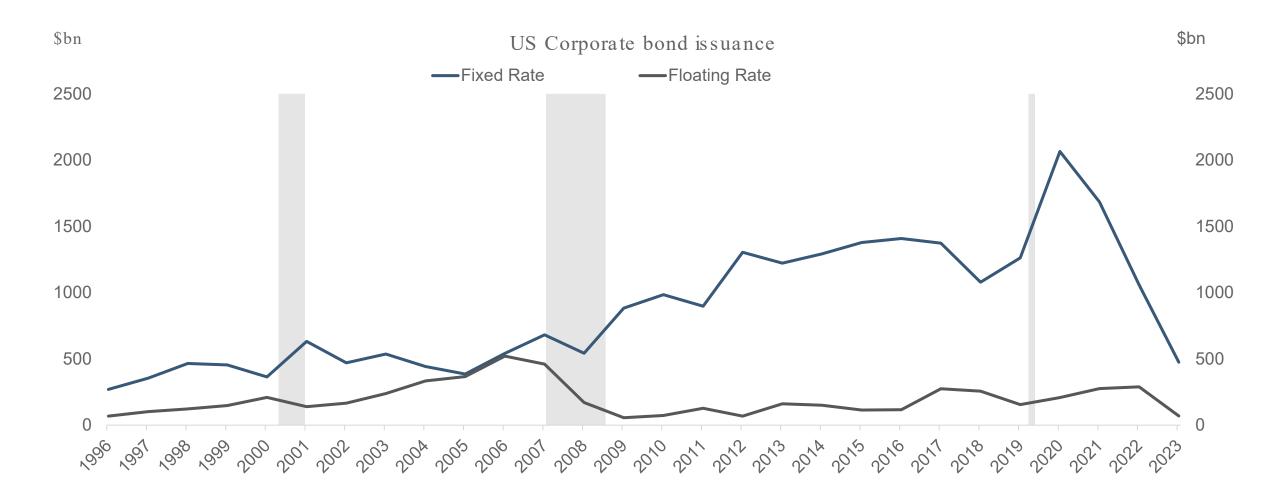
### Loan volumes by proceeds



#### Covenant lite loan issuance



## Corporate bond issuance



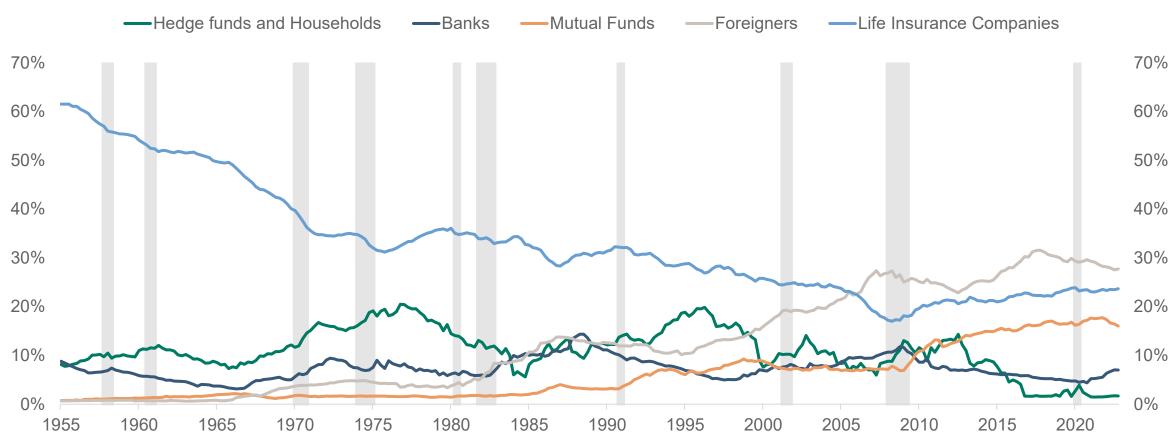
Source: SIFMA, Apollo Chief Economist.

# Corporate bond holdings



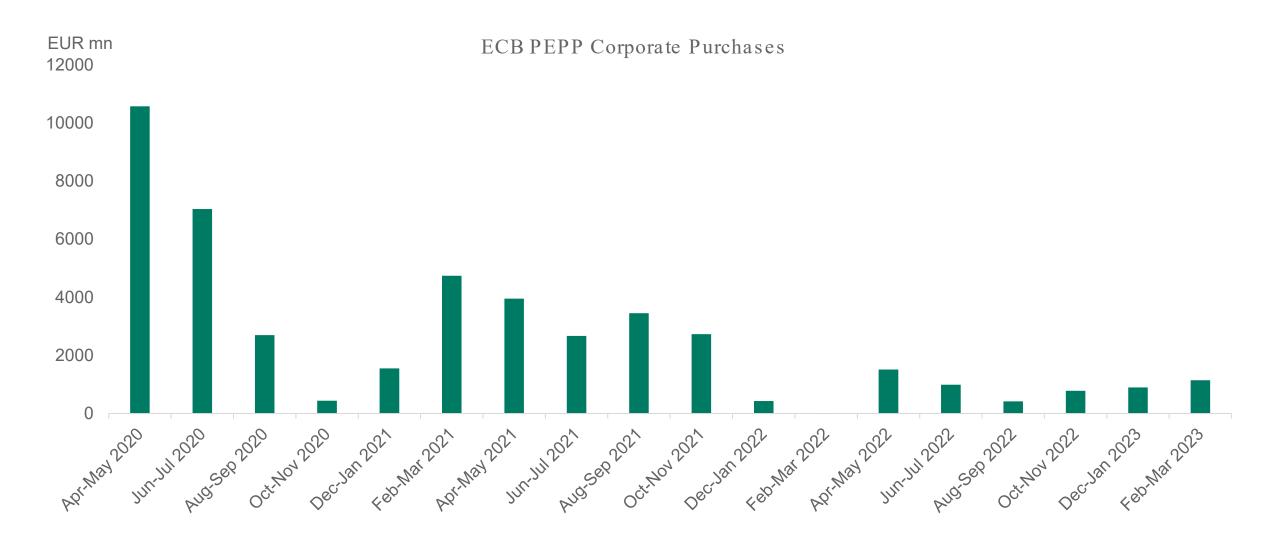
### The biggest holder of US corporate bonds is foreigners





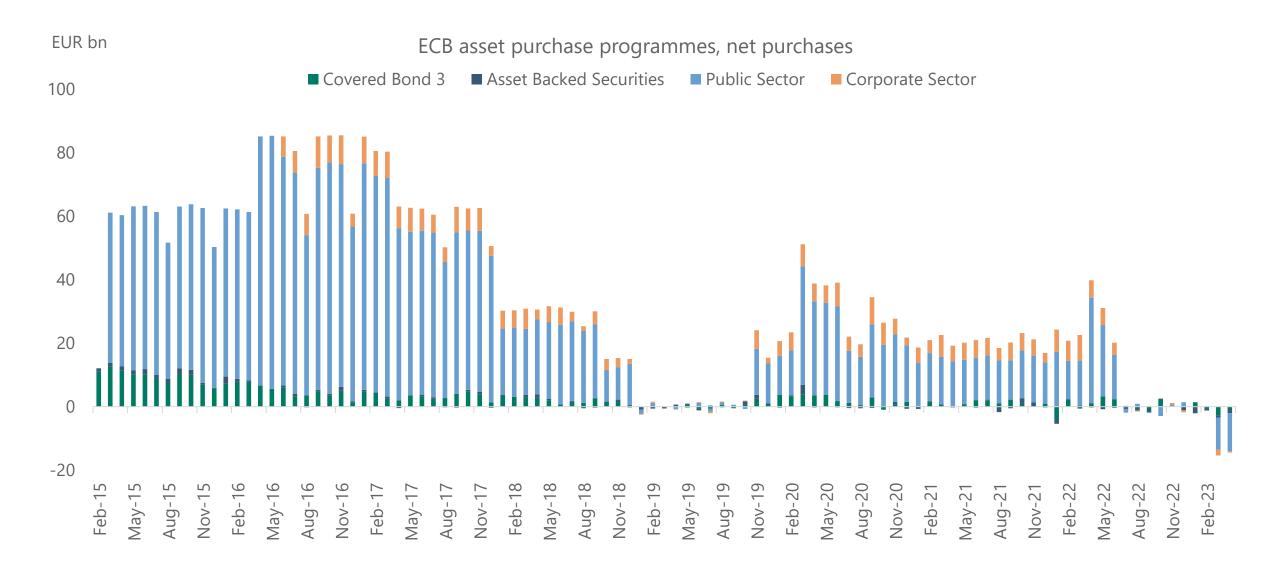
Source: FRB, Haver Analytics, Apollo Chief Economist

### ECB purchases of corporate bonds



Source: ECB, Bloomberg, Apollo Chief Economist 52

### ECB QE ending



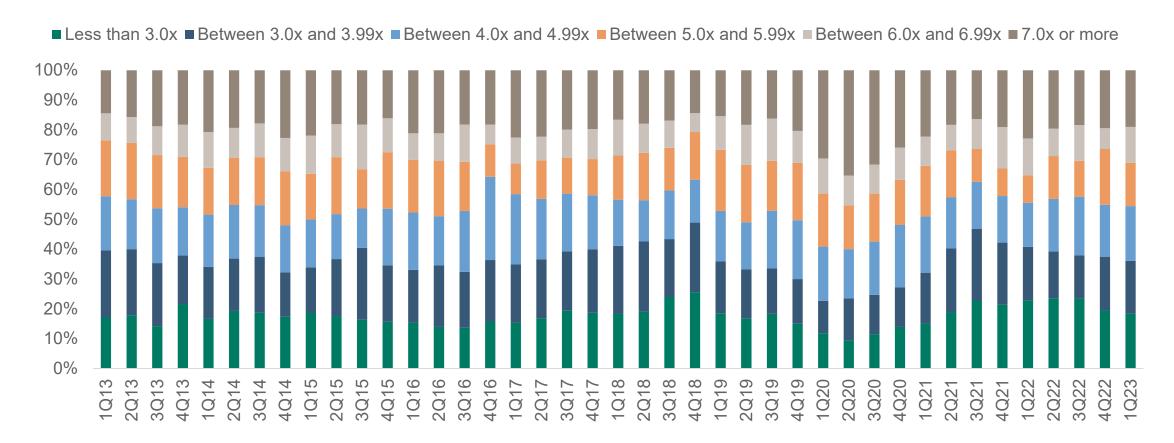
Source: ECB, Bloomberg, Apollo Chief Economist

# Loans

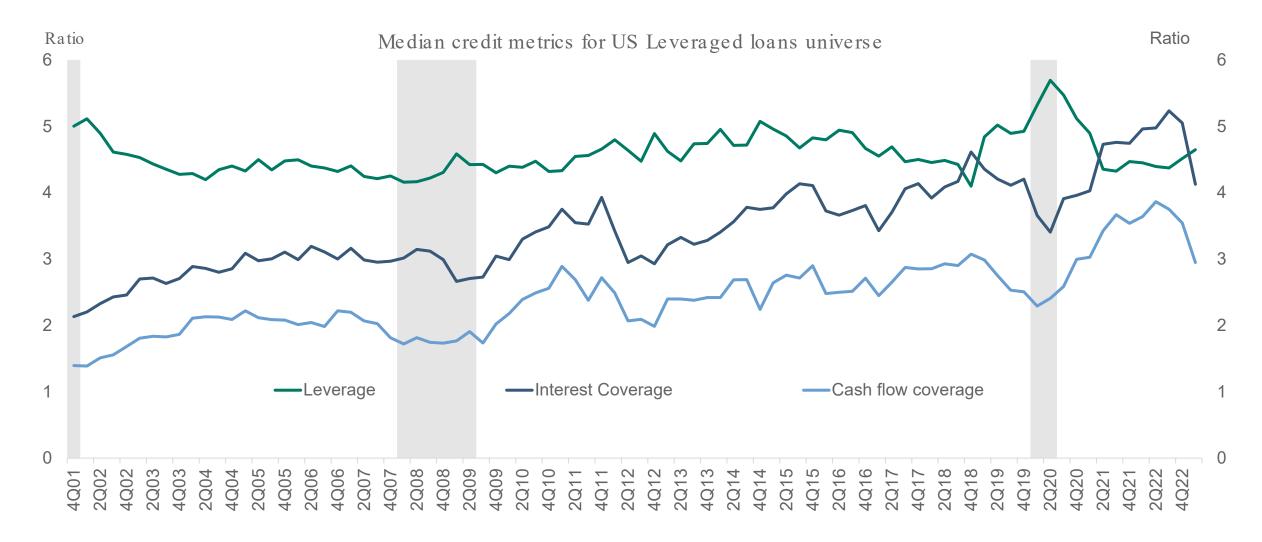


### Leveraged loan deals, by multiple

#### Share of leveraged deals

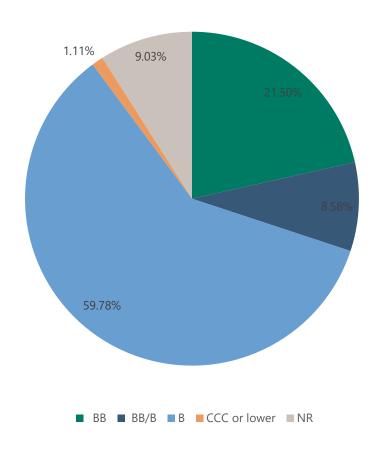


### Credit metrics for leveraged loan deals



# Leveraged loans rating distribution, 2023Q1

US leveraged loan rating distribution



### Leveraged loans distribution, by industry, 2023Q1

Automotive

■ Restaurants

■ Food & Beverage

■ Textile & Apparel

■ Aerospace & Defense

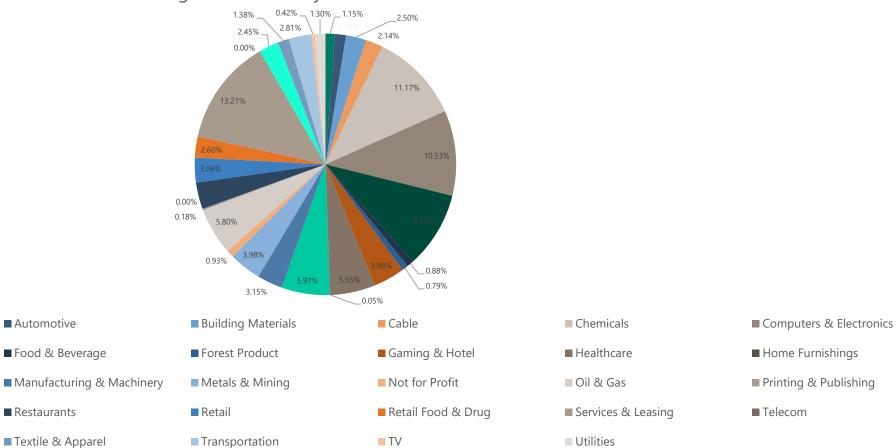
Telecom Equipment

Insurance

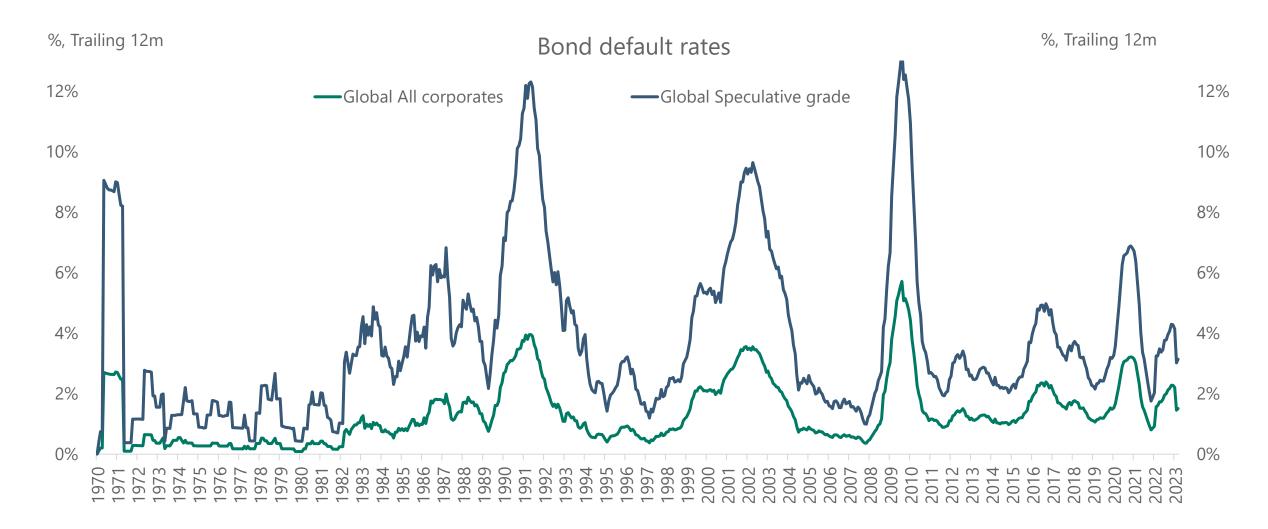
■ Real Estate

■ Entertainment & Leisure



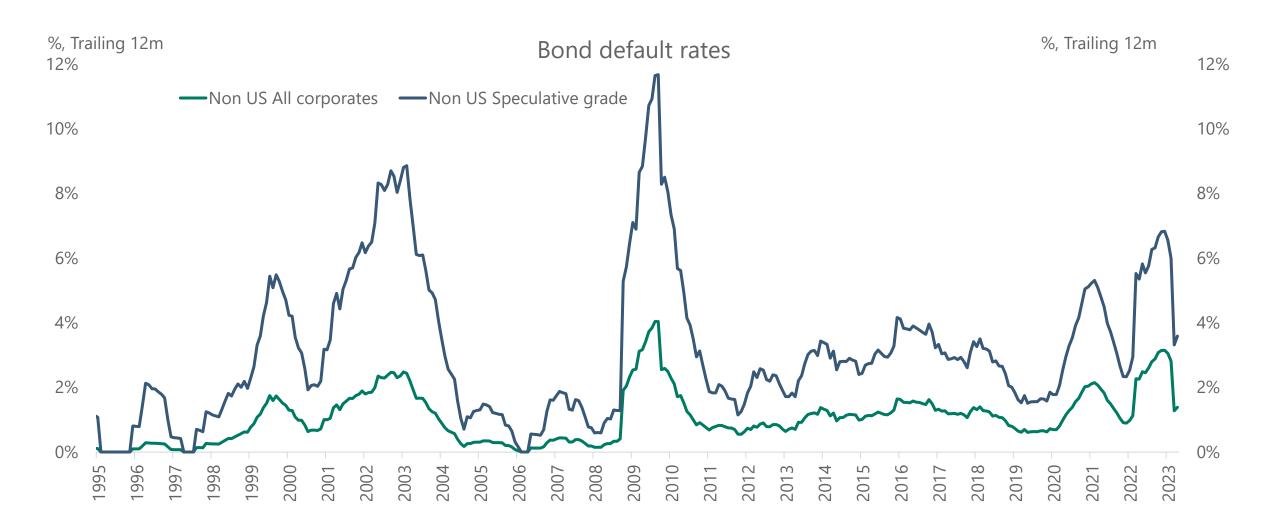


#### Global bond default rates



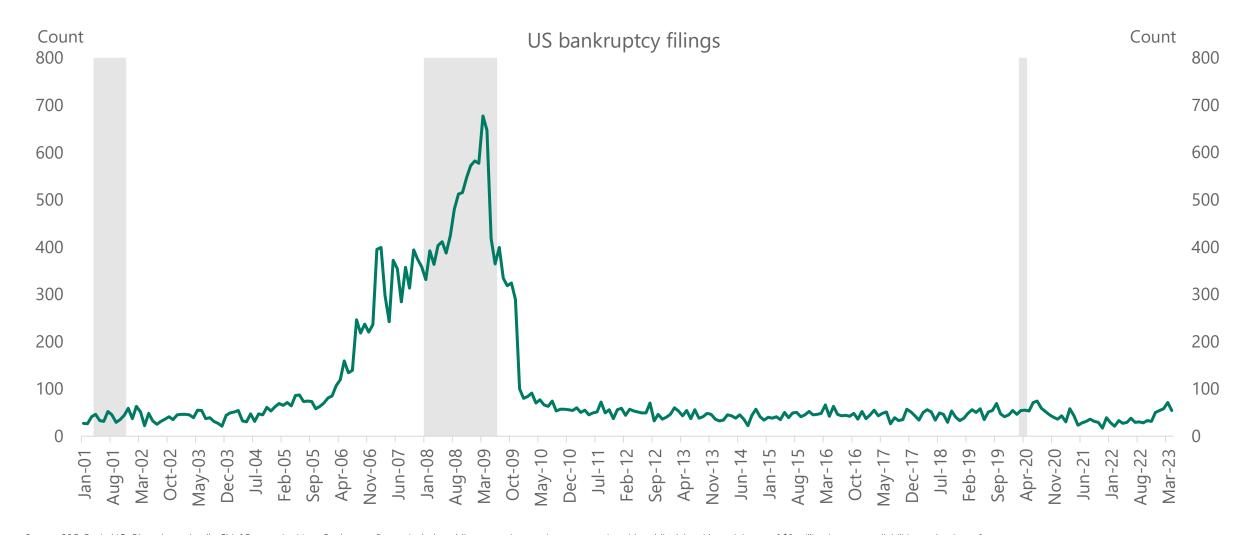
Source: Moody's Analytics, Apollo Chief Economist

#### Non US bond default rates

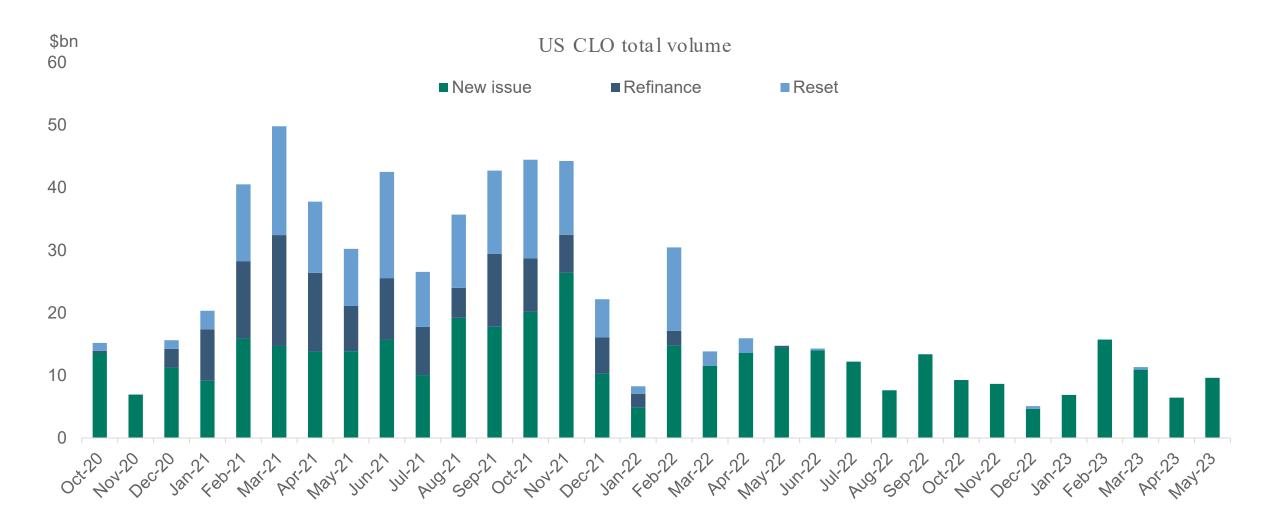


Source: Moody's Analytics, Apollo Chief Economist

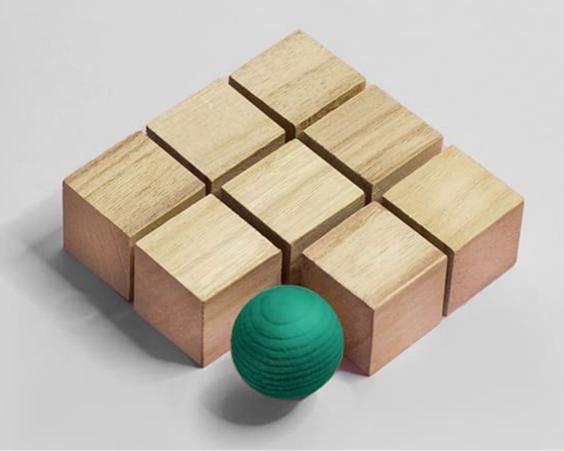
### Bankruptcy filings will rise during the recession



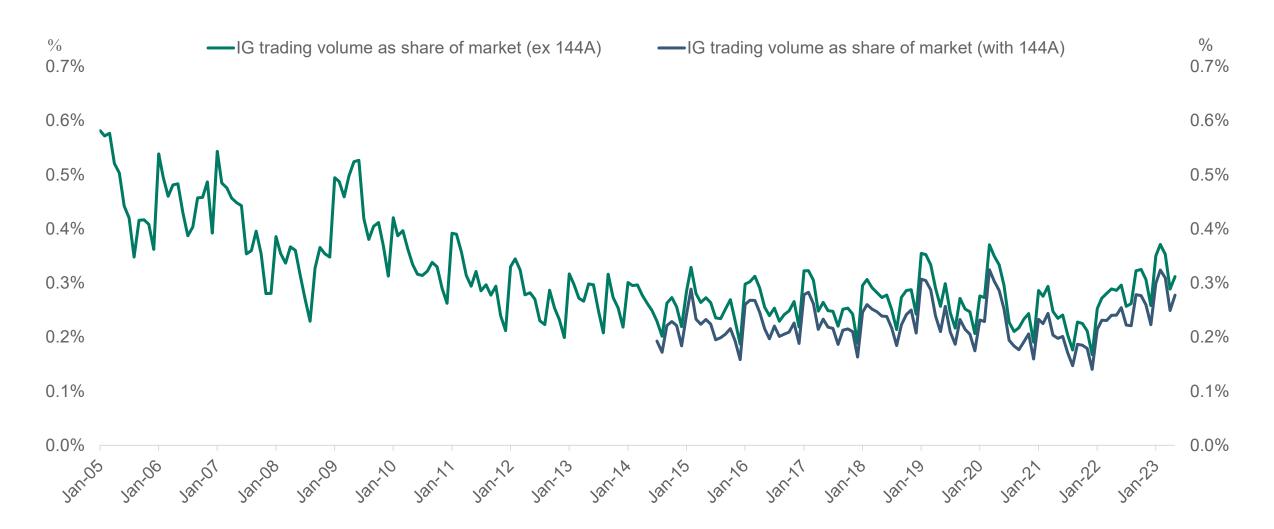
#### US CLO total volume



Liquidity in US credit markets

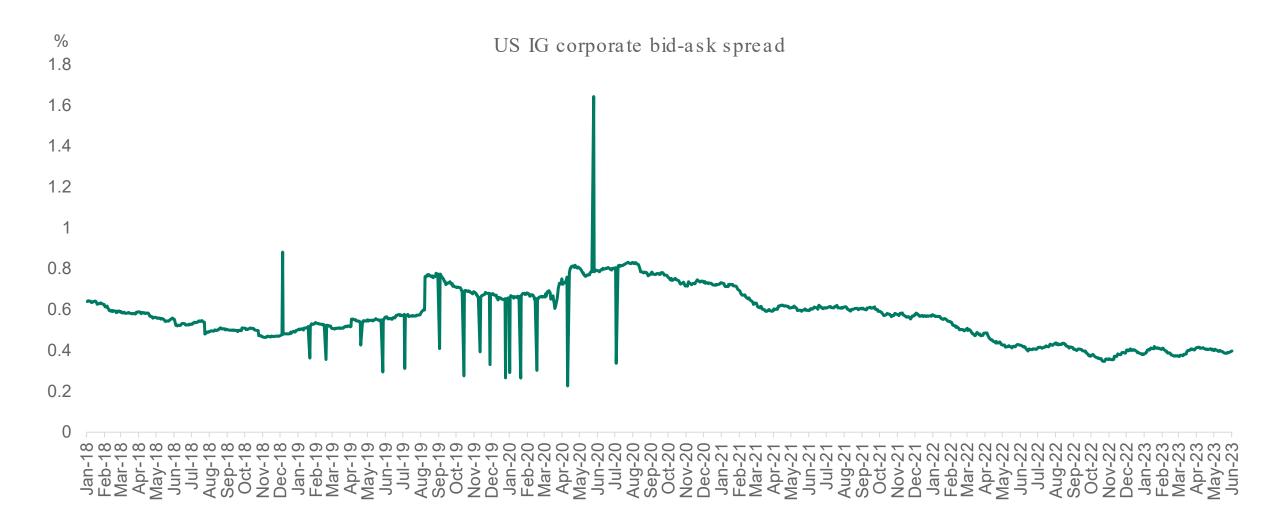


### IG trading liquidity

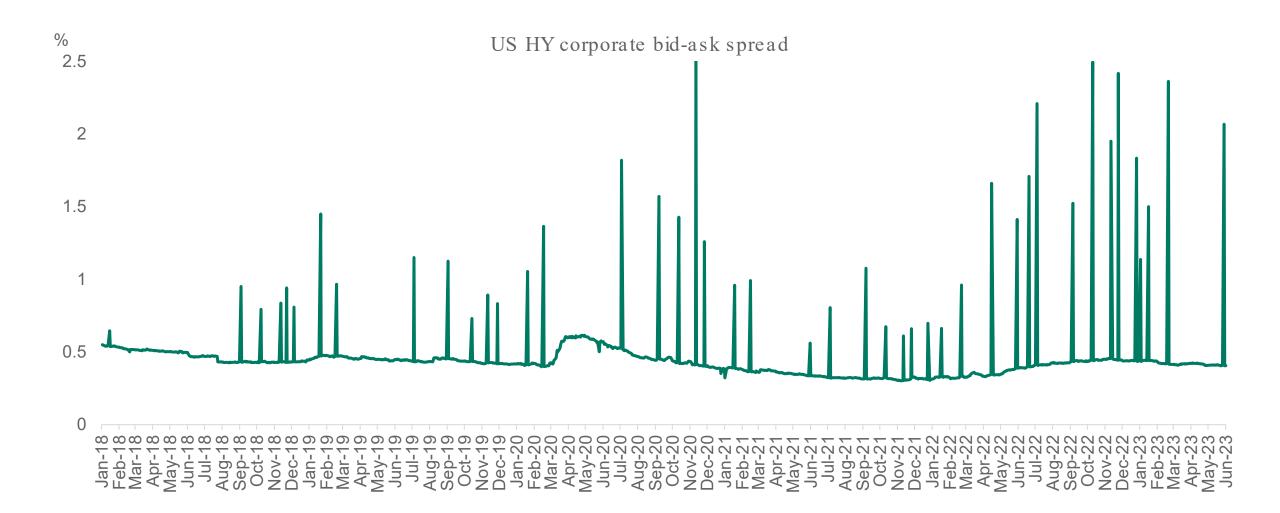


Source: ICE BofA, FINRA TRACE, Haver Analytics, Apollo Chief Economist

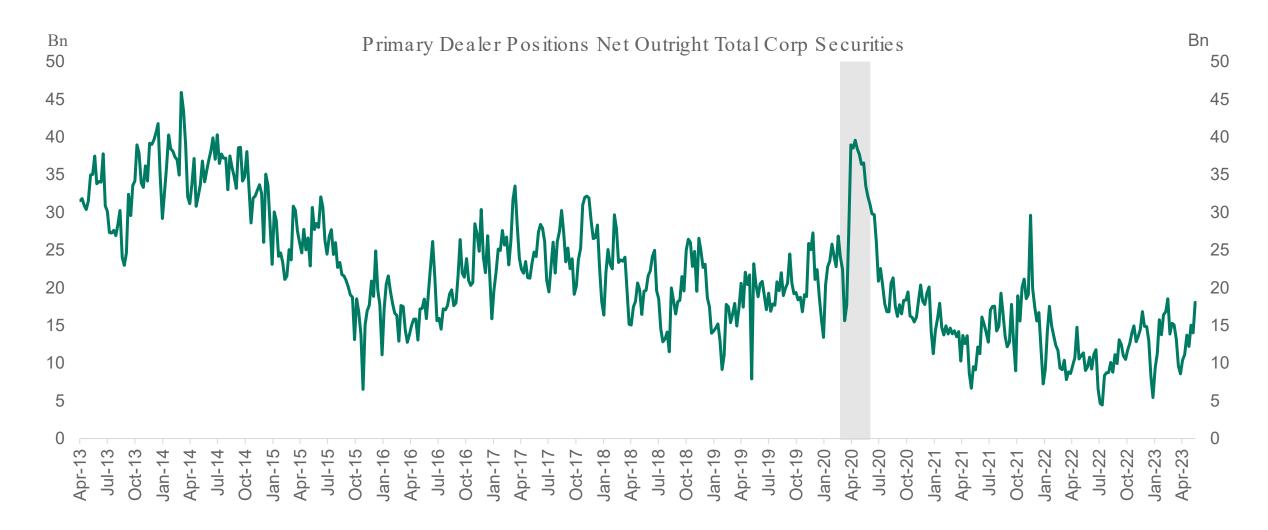
### Bid-ask spread for US IG



### Bid-ask spread for US HY



### Dealer inventory of corporate bonds (IG+HY)

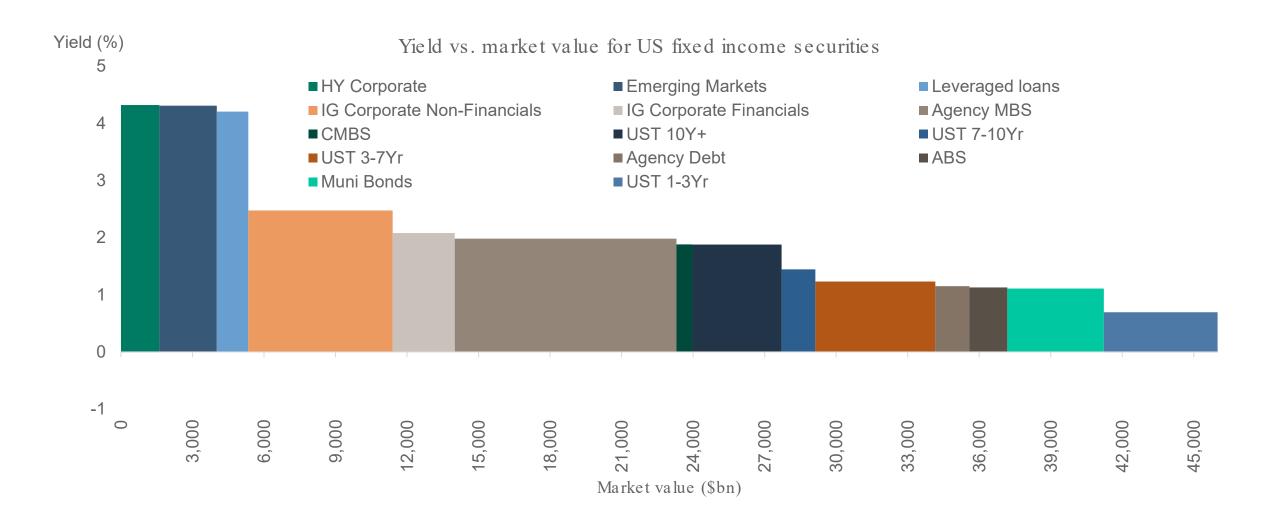


Source: Bloomberg, Apollo Chief Economist

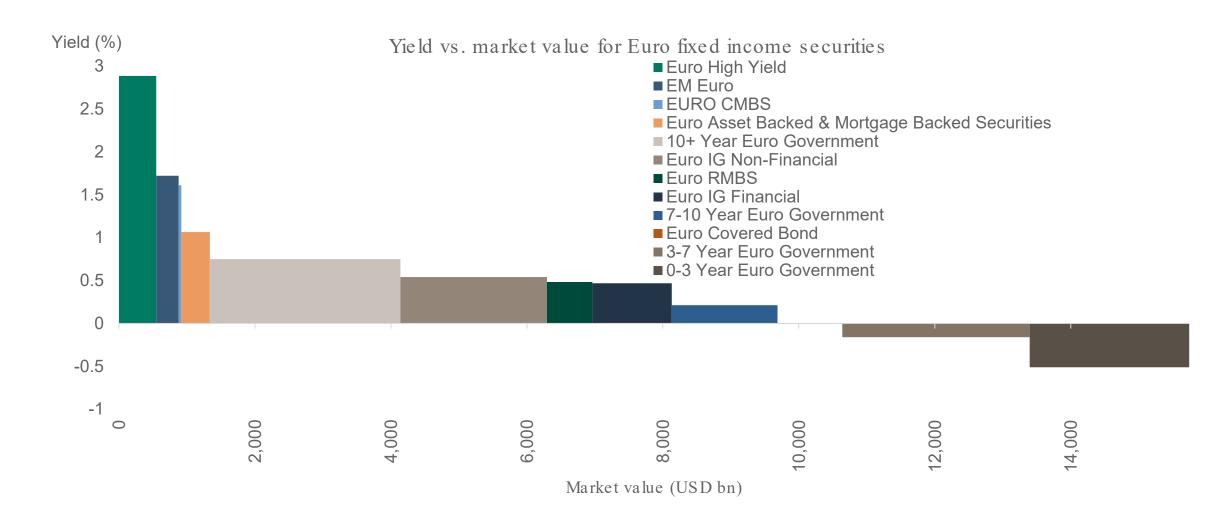
Credit markets in a broader perspective



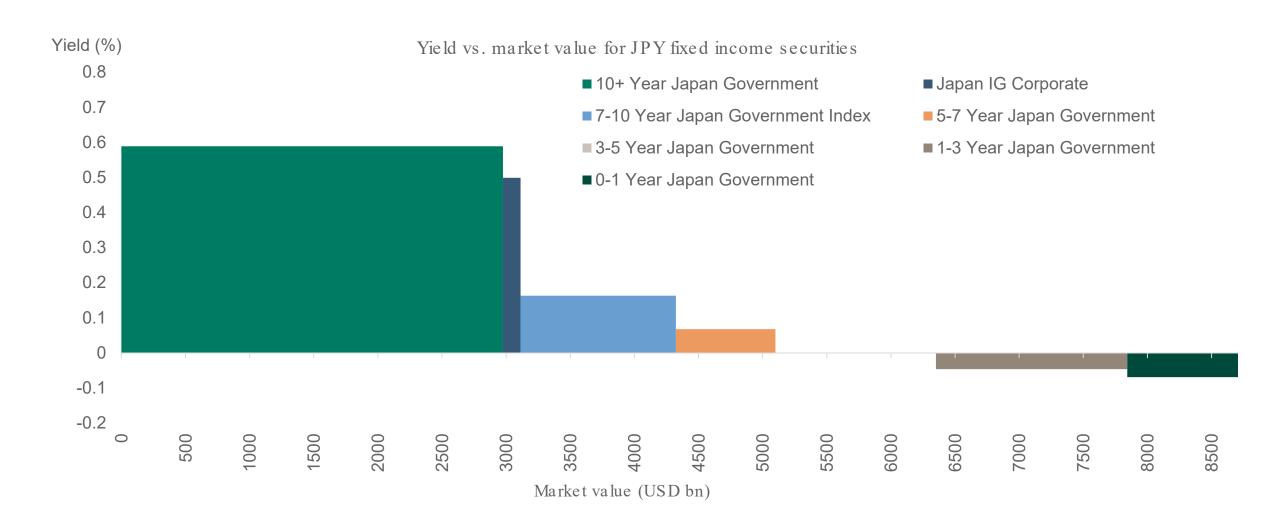
### US fixed income markets by yield and size



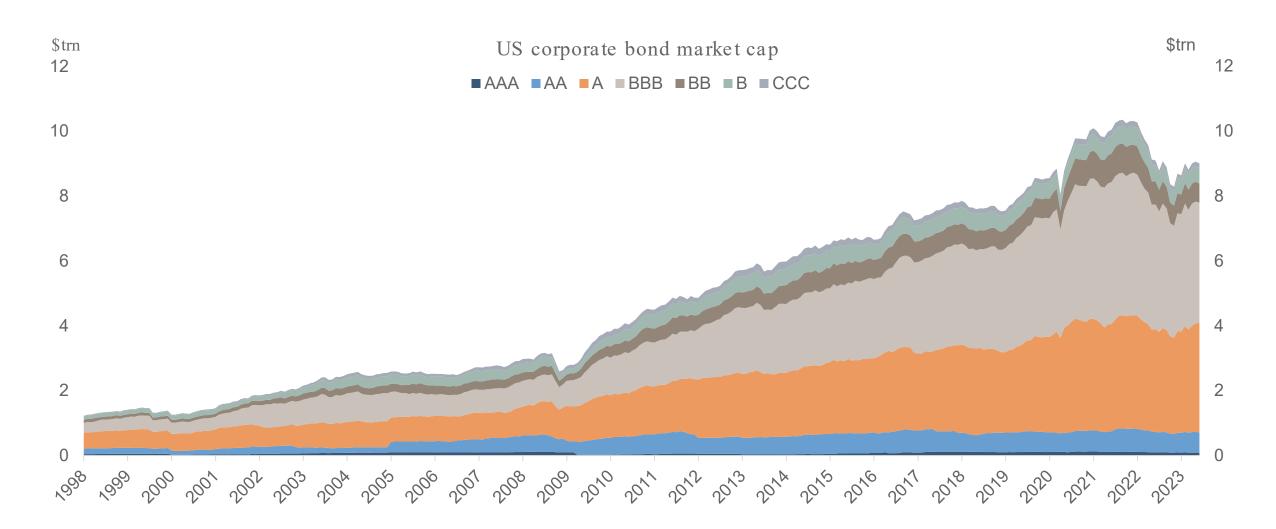
### European fixed income markets by yield and size



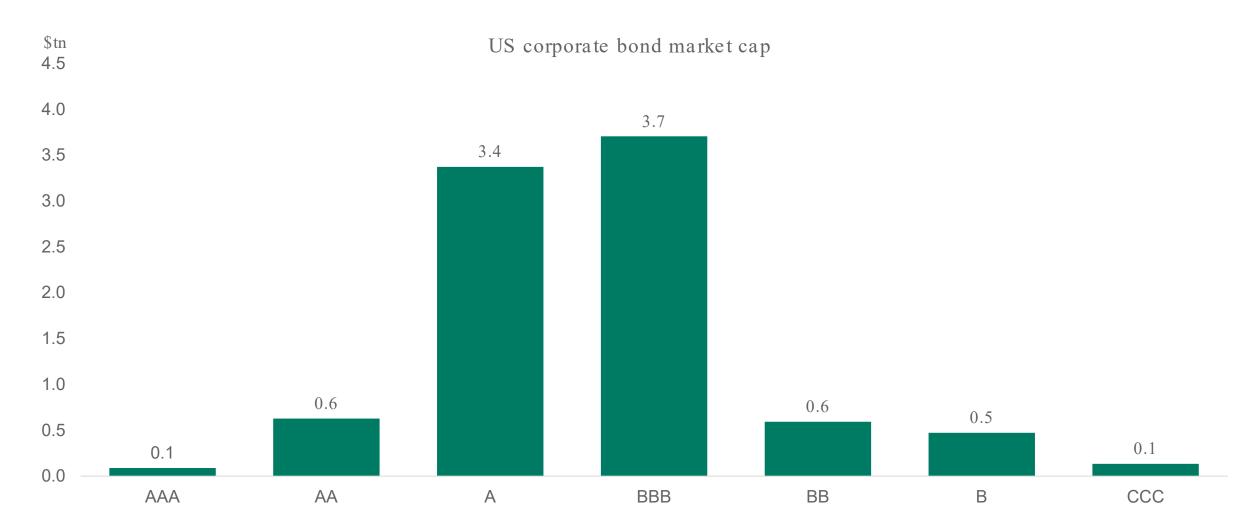
### Japanese fixed income markets by yield and size



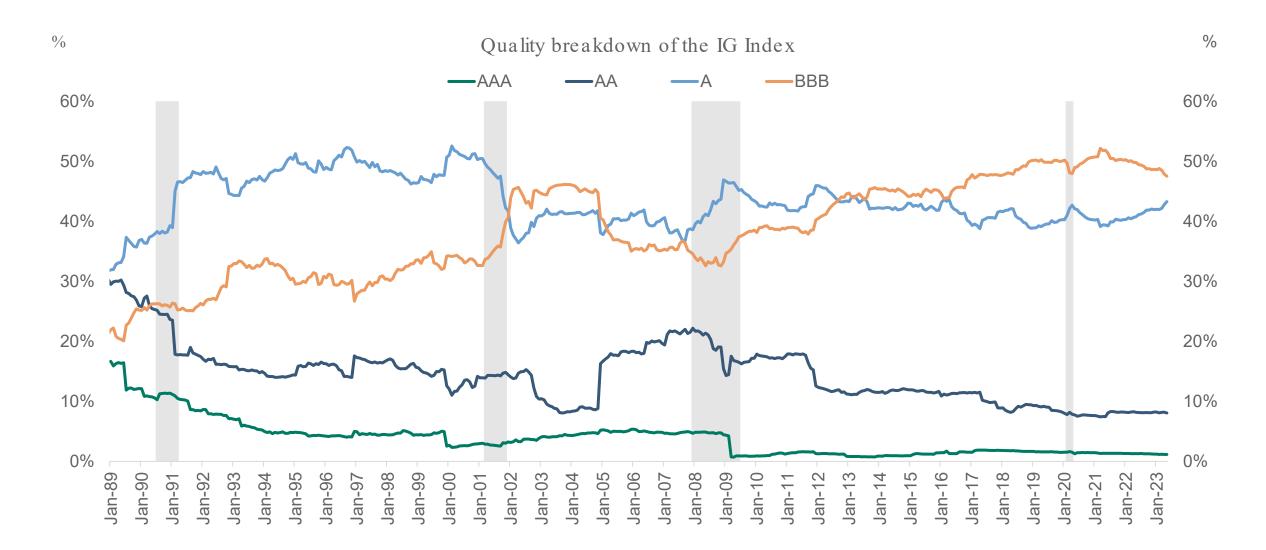
### Market cap of US credit markets



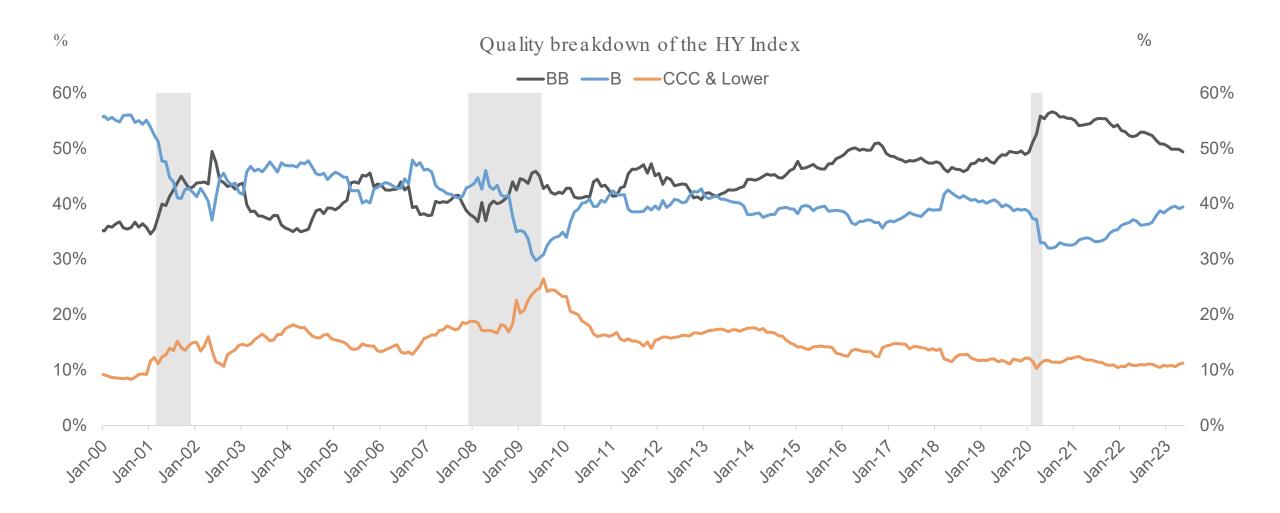
# Corporate bond market cap, by rating



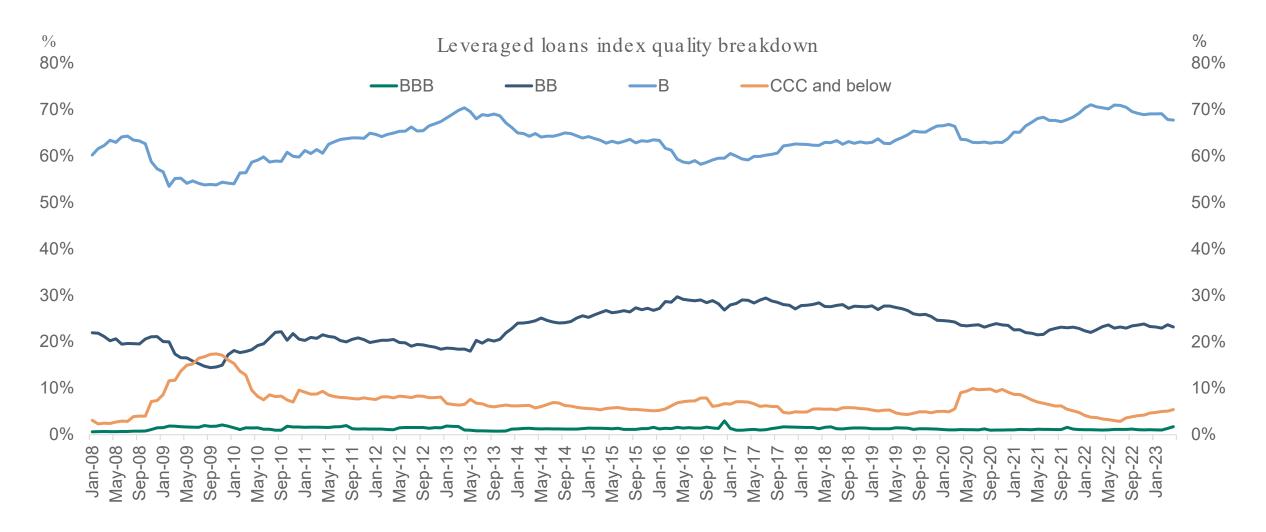
## Quality composition of the IG Index



## Quality composition of the HY Index

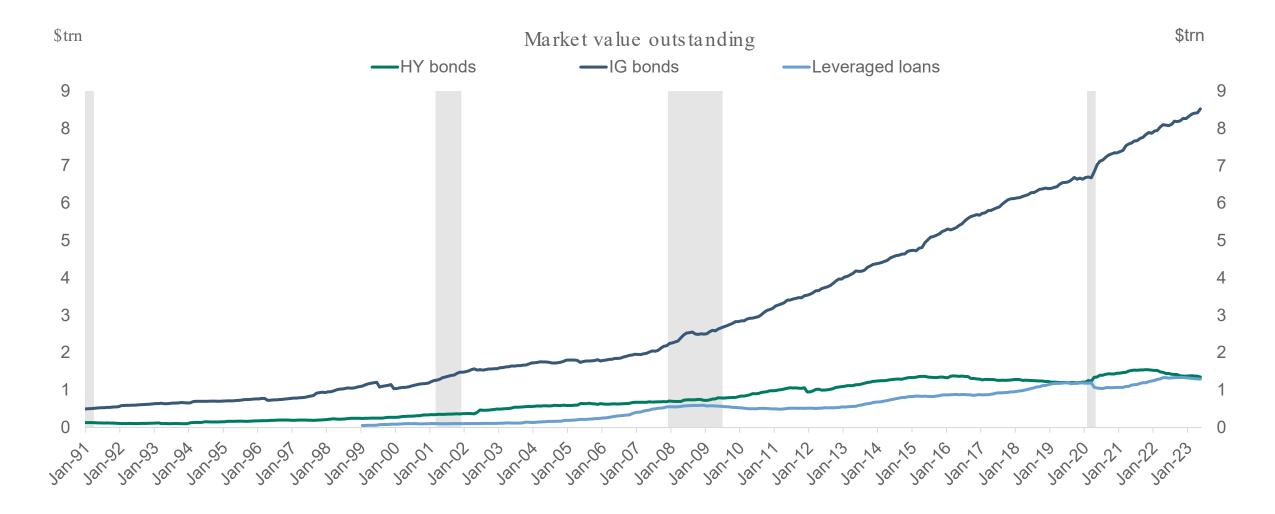


#### Quality composition of the leveraged loans index

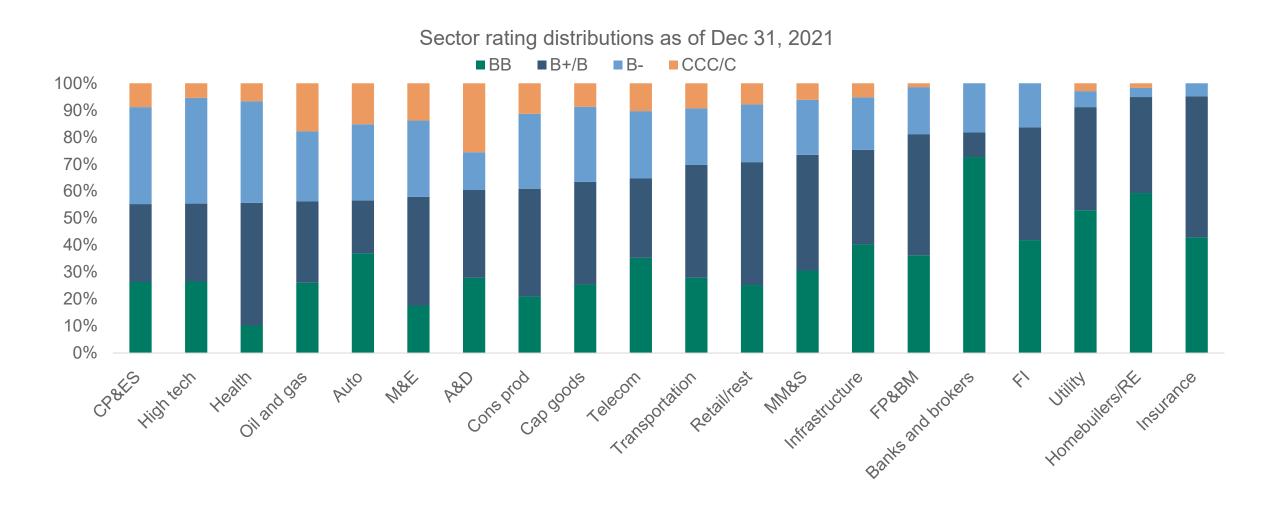


Source: Pitchbook LCD, Apollo Chief Economist 76

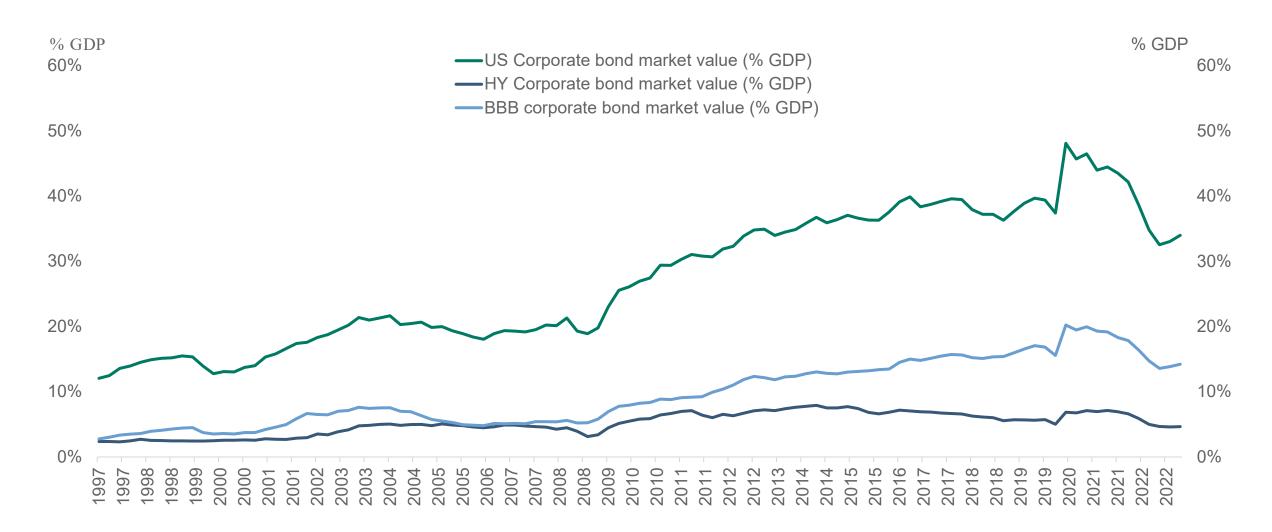
#### IG market is seven times bigger than HY and seven times bigger than the loan market



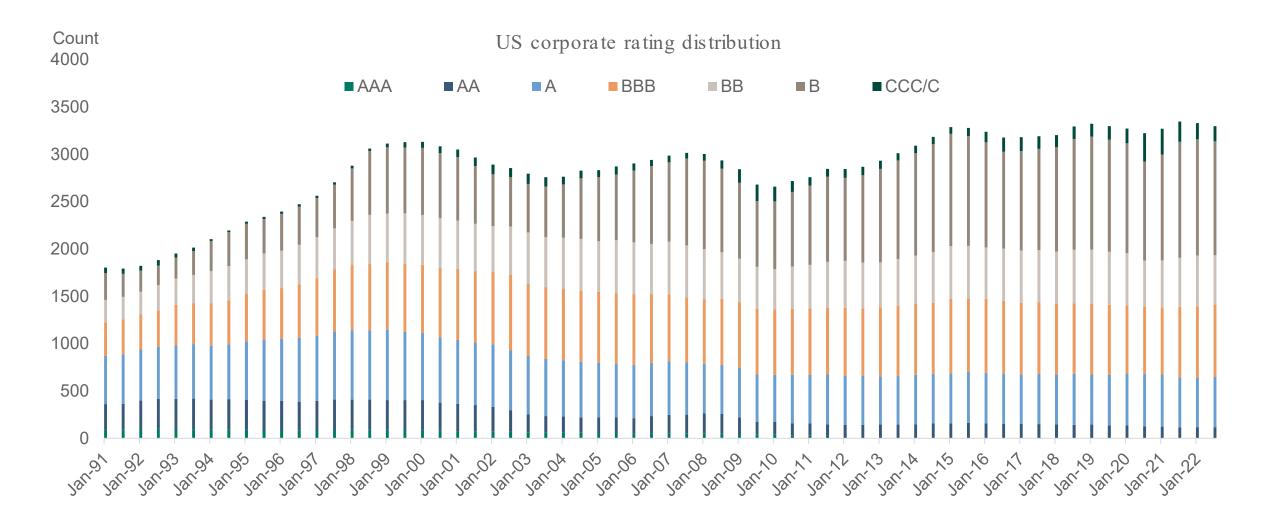
#### HY sector rating distributions



#### US corporate bond markets as a share of GDP

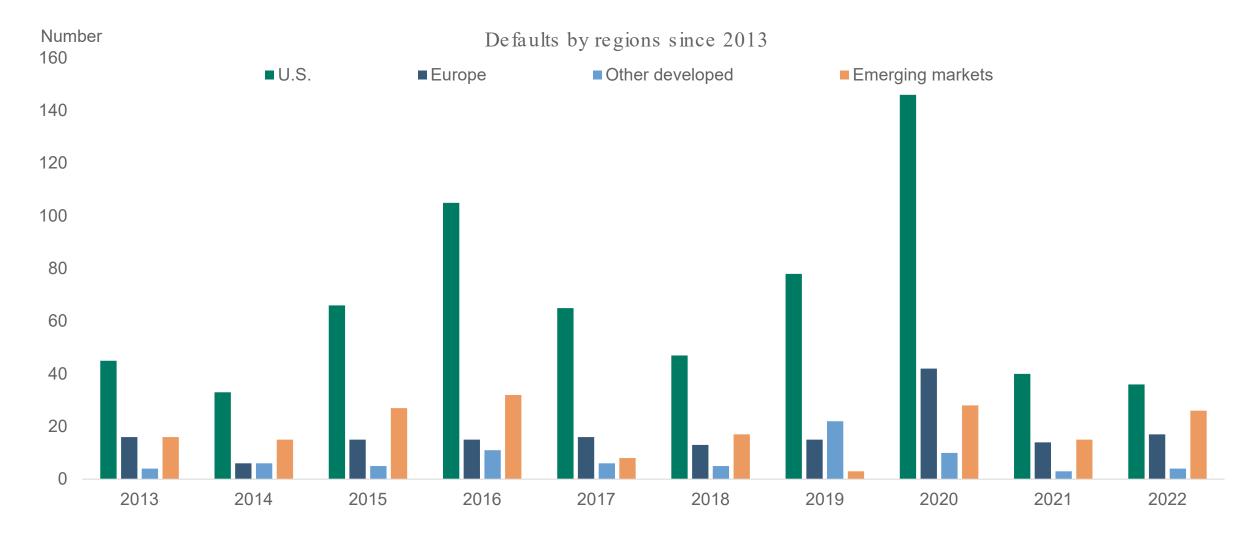


### Distribution of corporate credit ratings

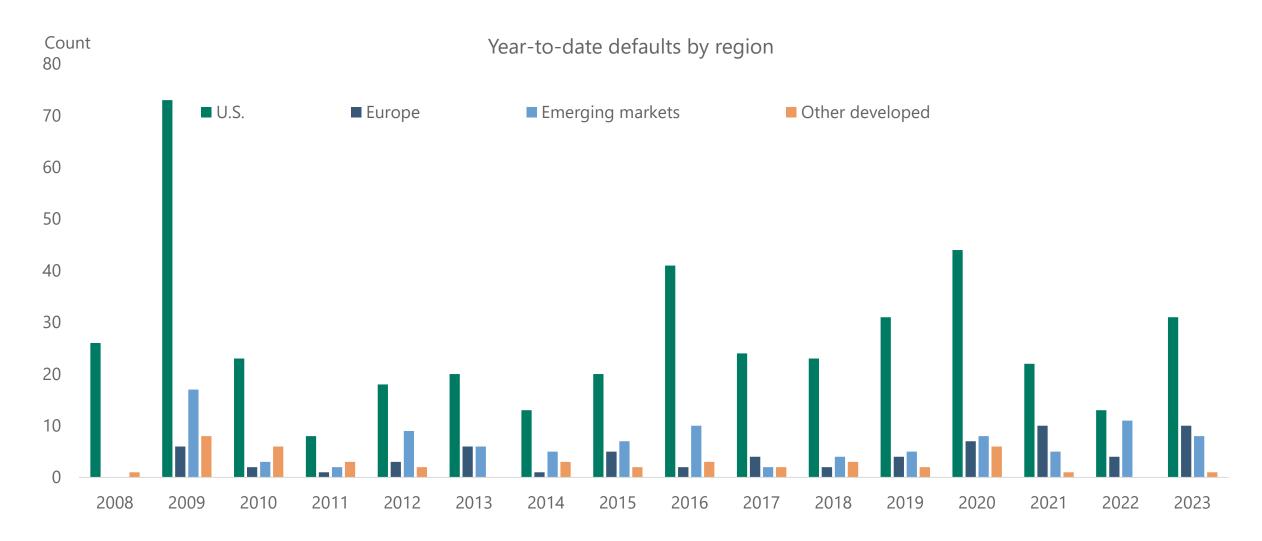


Source: S&P, Apollo Chief Economist

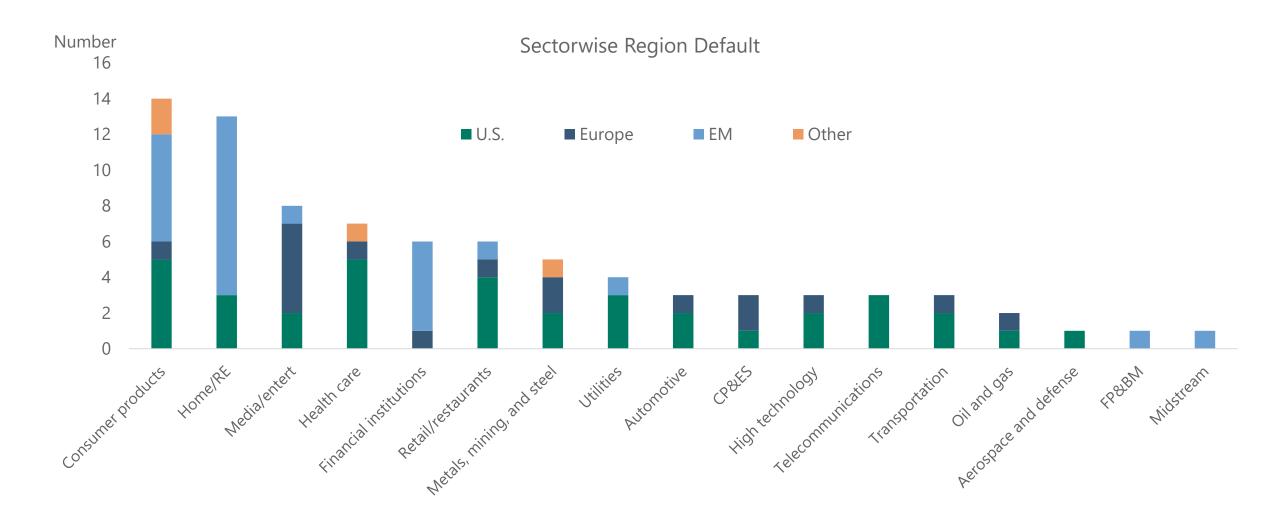
#### Global default rates remain low



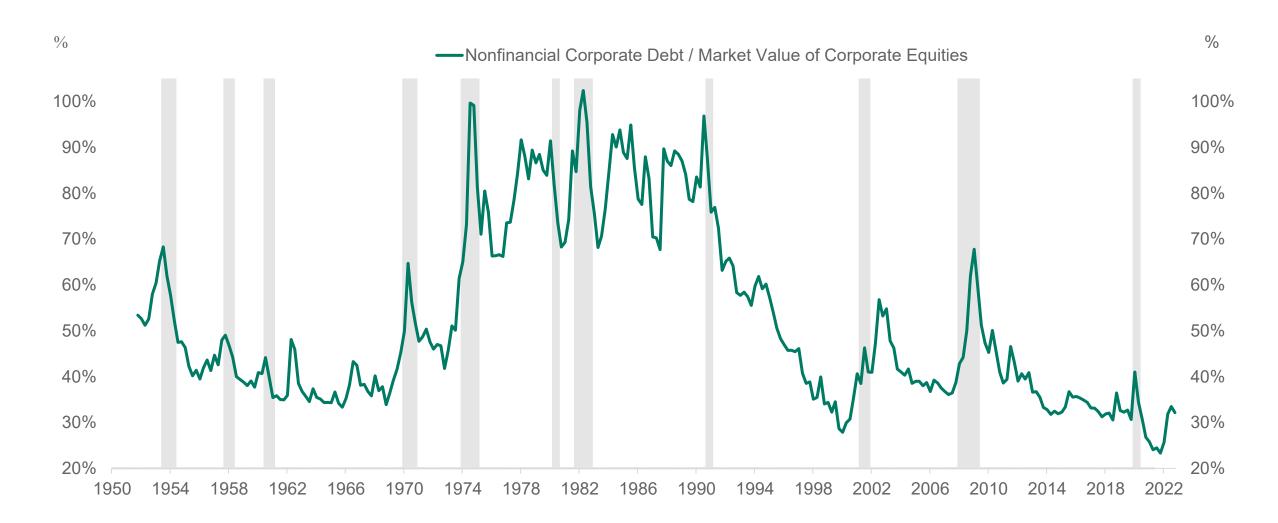
#### Global default rates remain low



#### Default rates differ across sectors



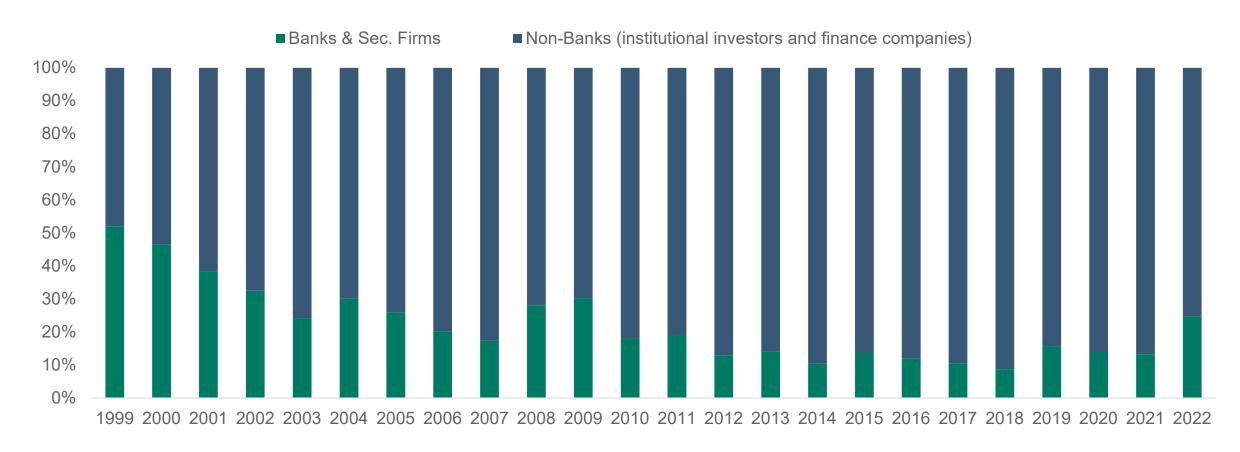
### Debt-to-equity ratio is very low for corporate America



Source: FRB, Haver Analytics, Apollo Chief Economist.

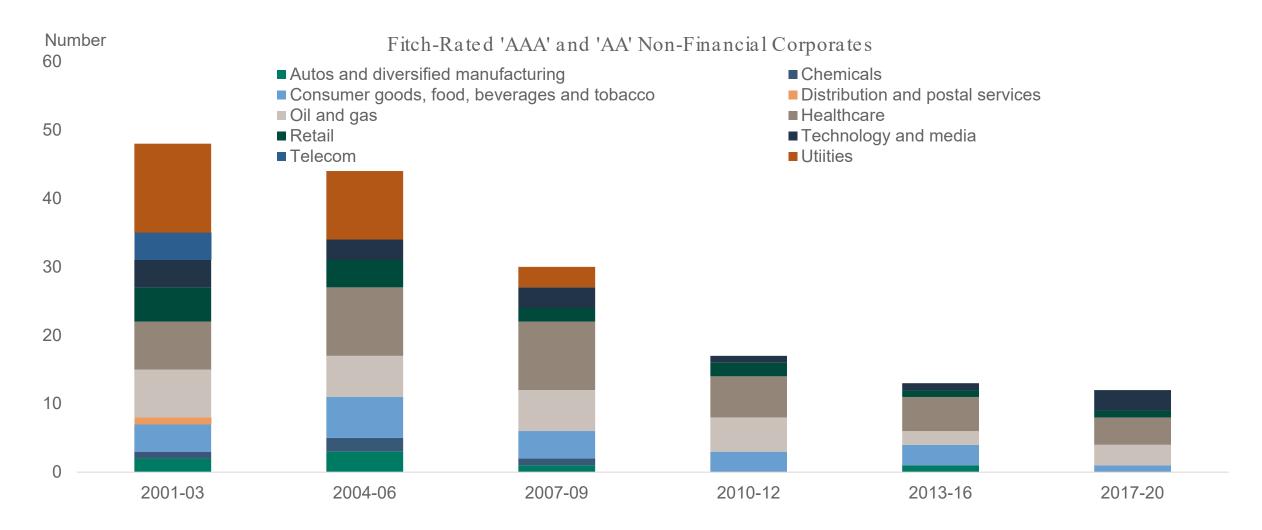
## More leveraged loans are held by banks

#### Primary investor market: leveraged loans

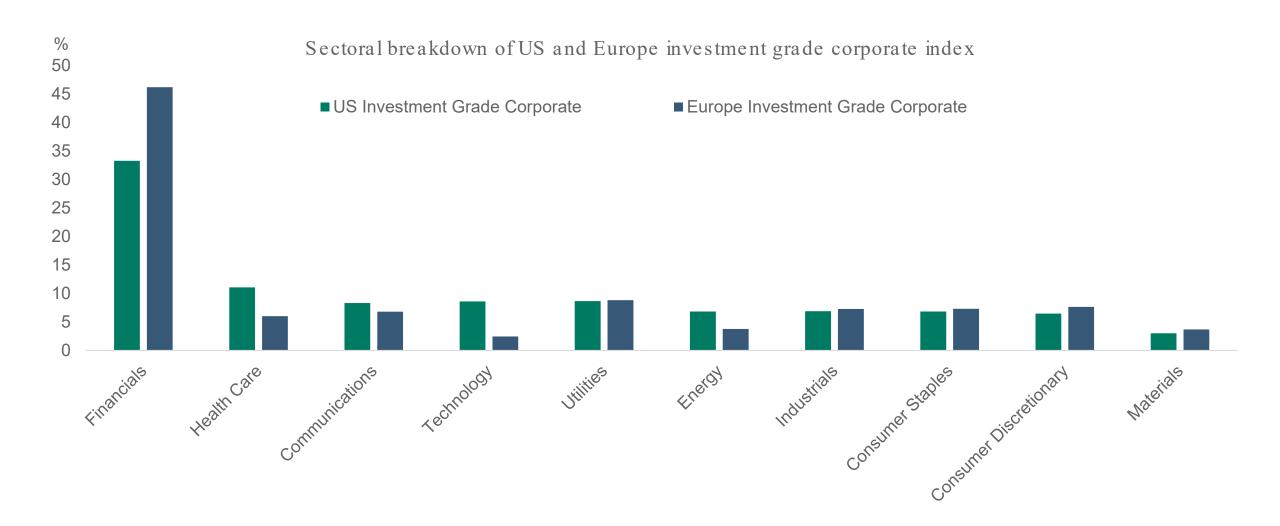


Source: Pitchbook LCD, Apollo Chief Economist

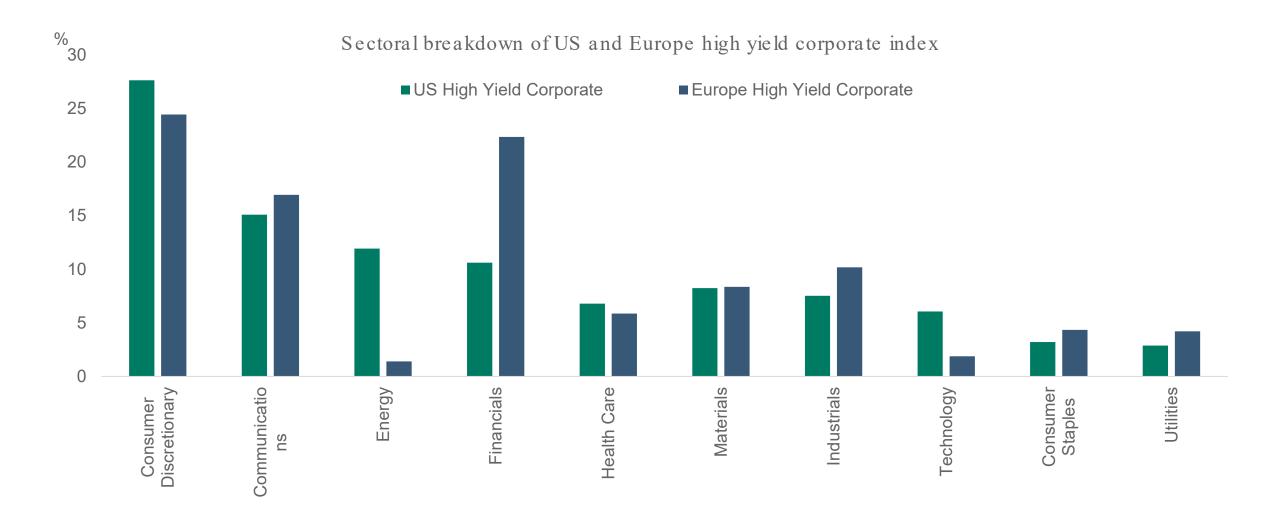
## Fewer and fewer corporate bonds are rated AAA and AA



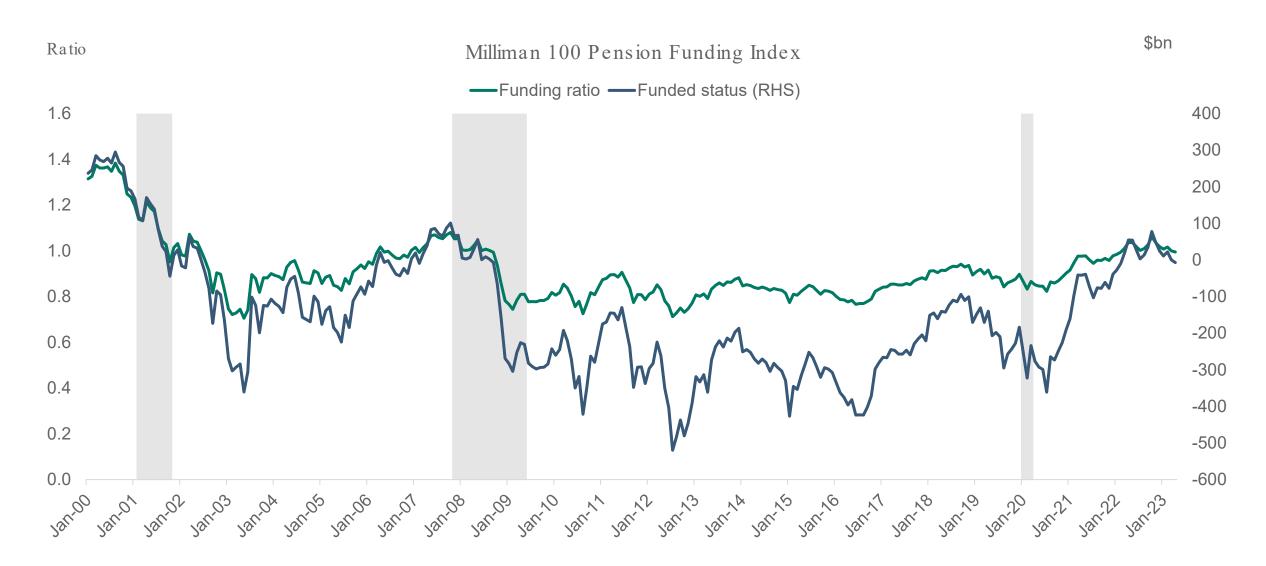
#### Comparing the US IG index with the EU IG index



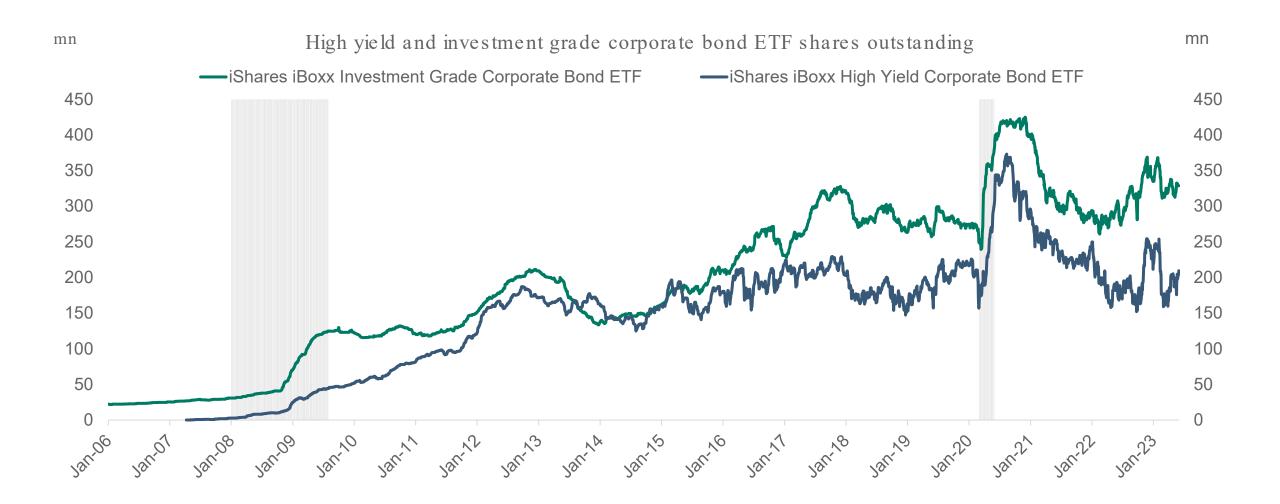
### Comparing the US HY index with the EU HY index



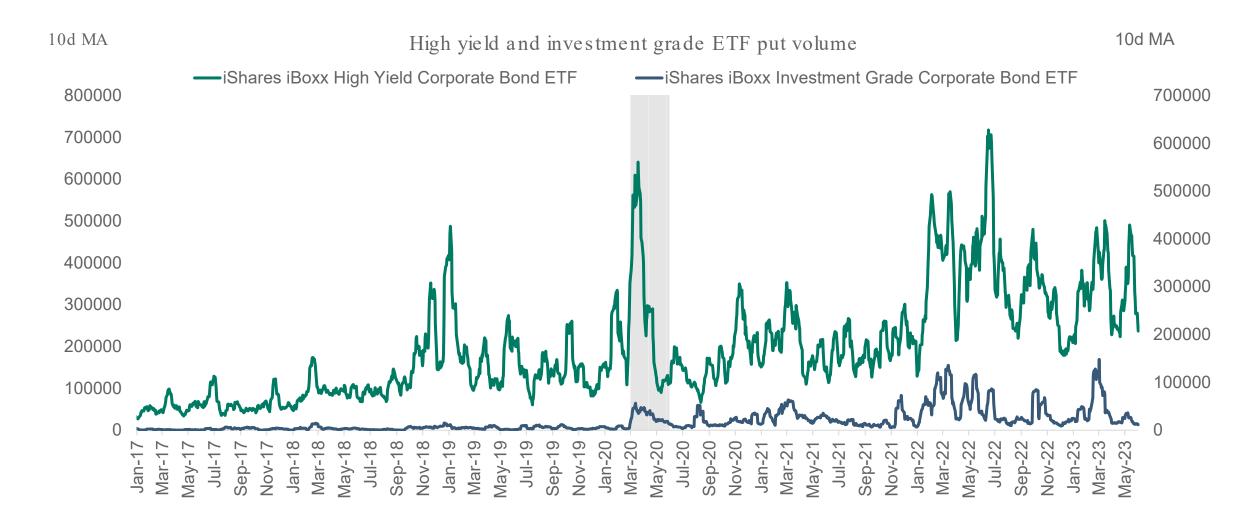
#### Pension funding status has improved



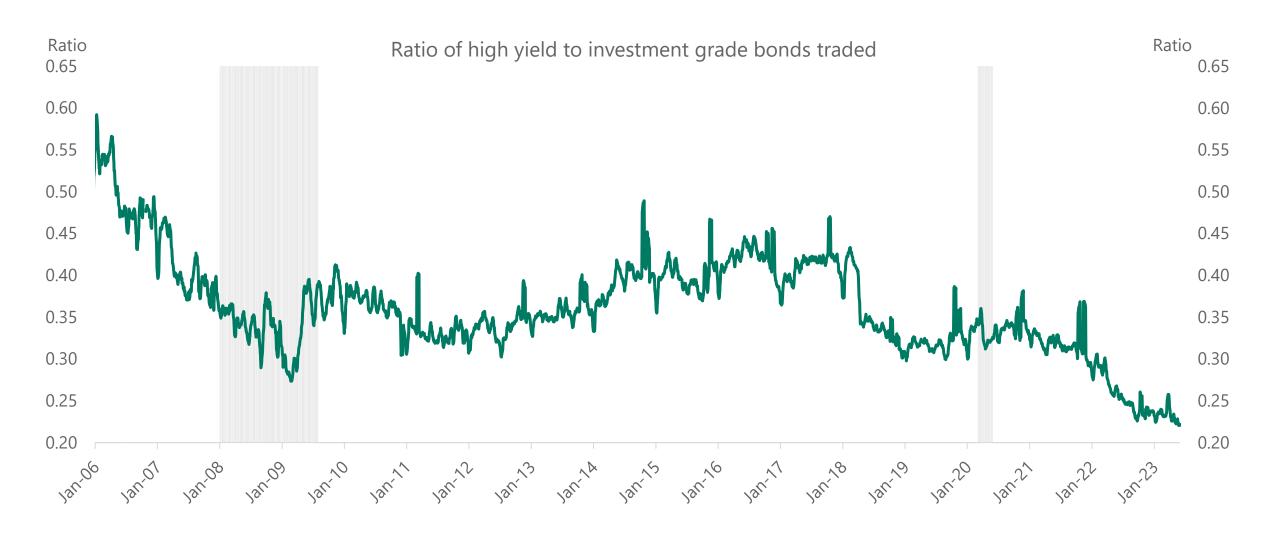
#### Retail investor activity in IG and HY



#### Put volumes for IG and HY ETF

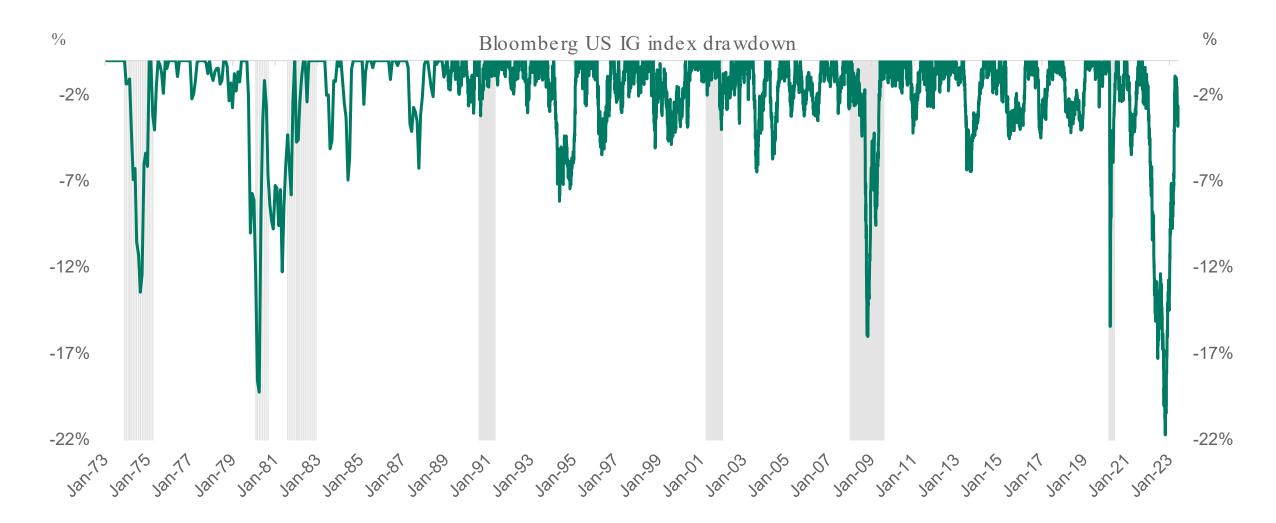


## Fewer high yield bonds being traded



Source: FINRA Trace, Bloomberg, Apollo Chief Economist

#### IG index drawdown



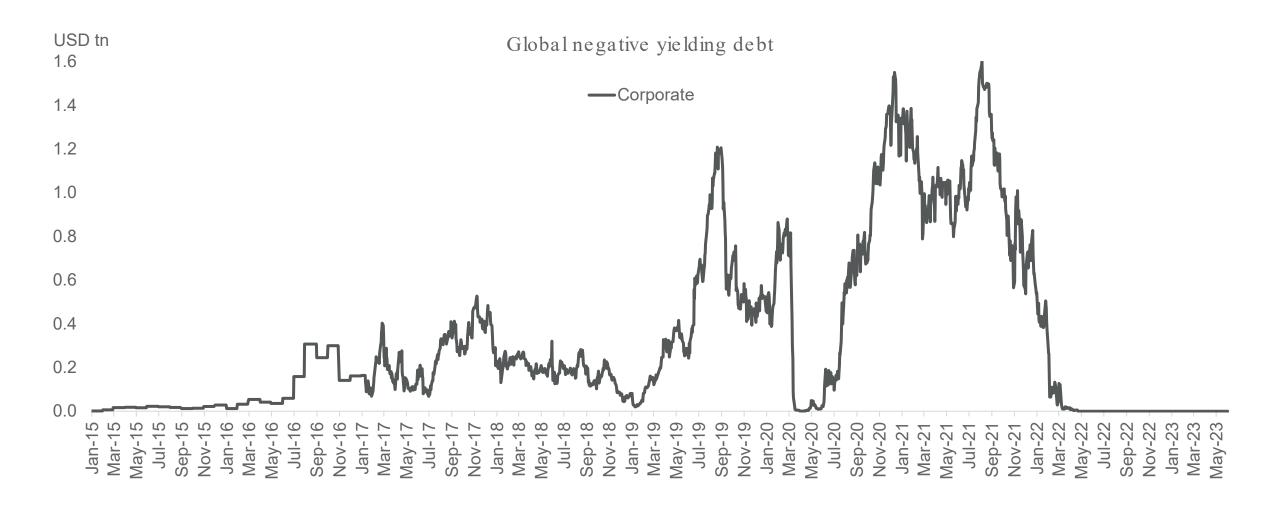
## Bonds outstanding trading at negative interest rates



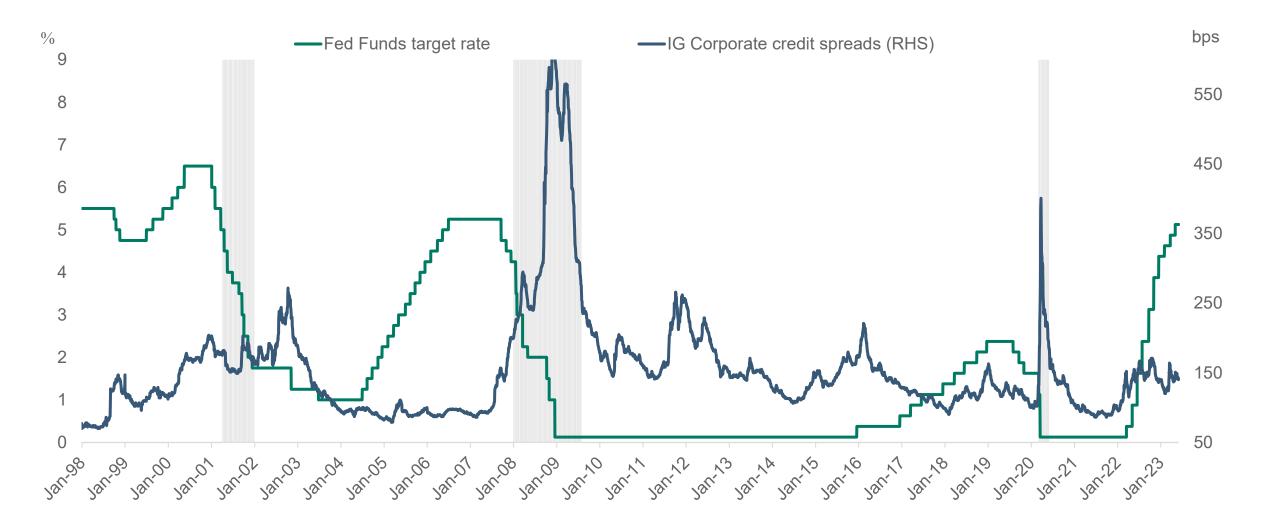
### The total value of negative yielding debt in the world



## All corporate bonds now have positive yields

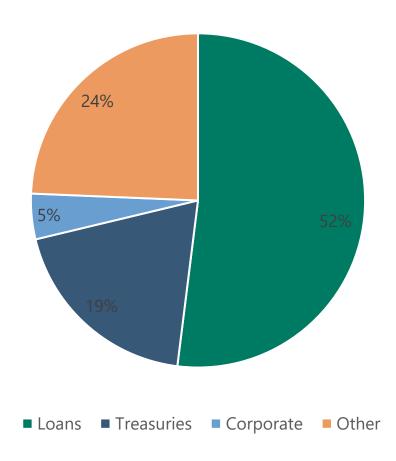


## Fed hiking and credit spreads widening

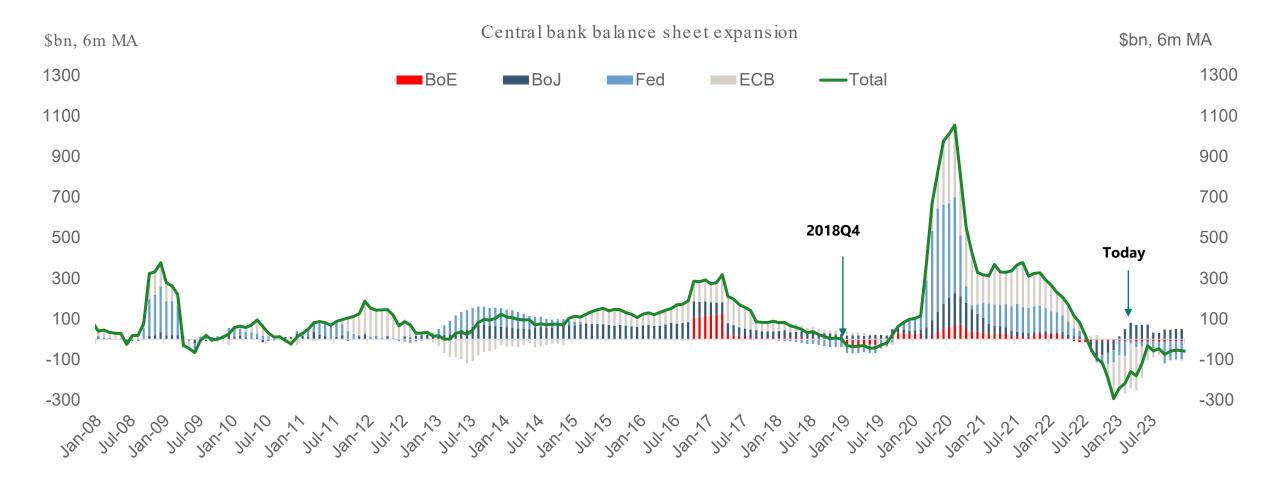


## US: Floating rate bonds outstanding, June 2023



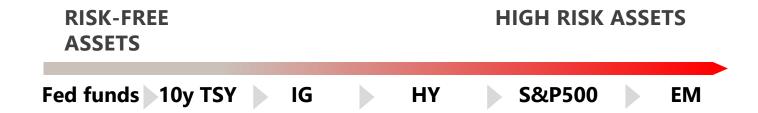


#### From QE to QT to BoJ QE (to maintain YCC)



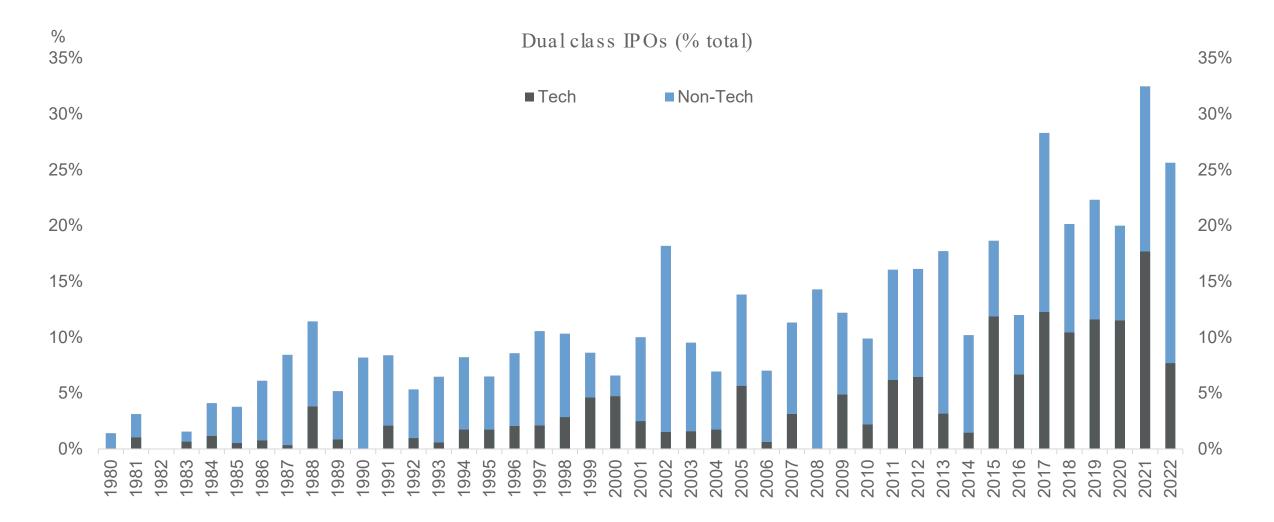
## Inflation is reversing the hunt for yield





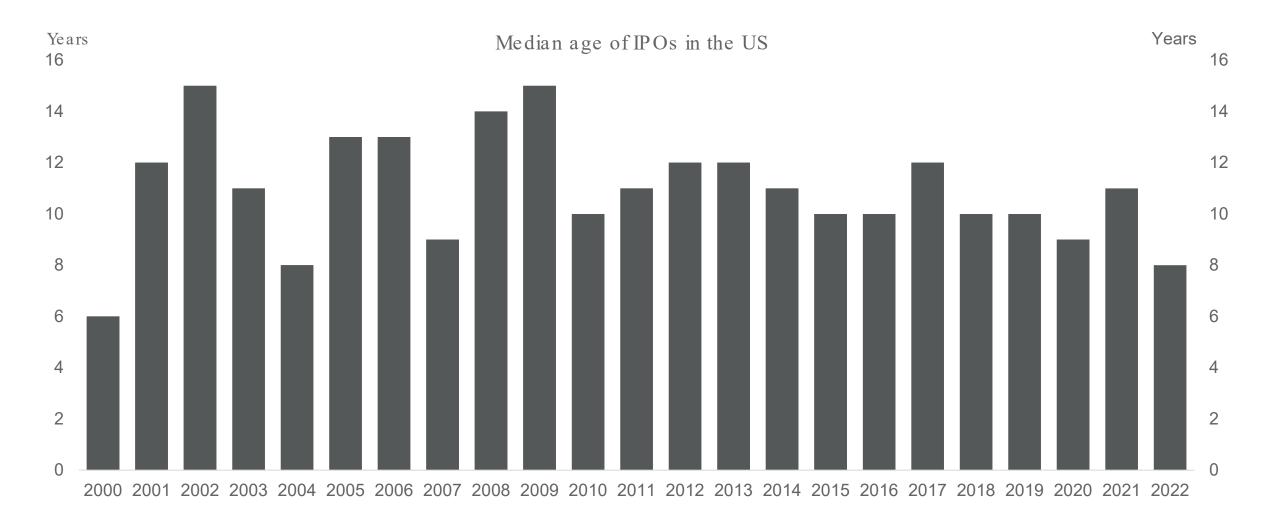
Source: Apollo Chief Economist

#### Dual class IPOs, driven by tech



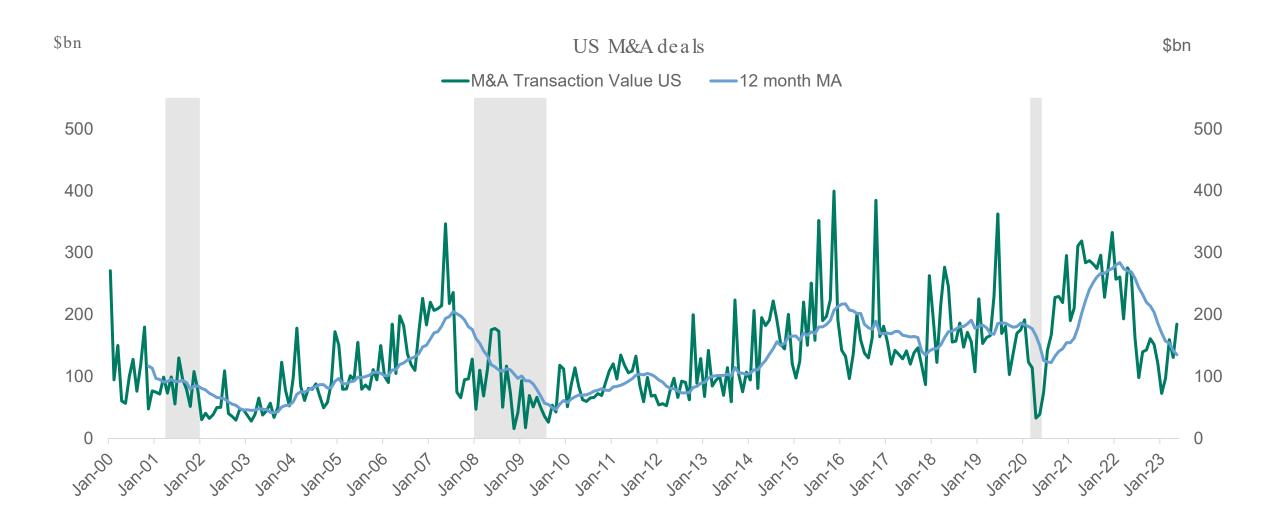
Source: Jay Ritter, Apollo Chief Economist

# Median age of IPOs

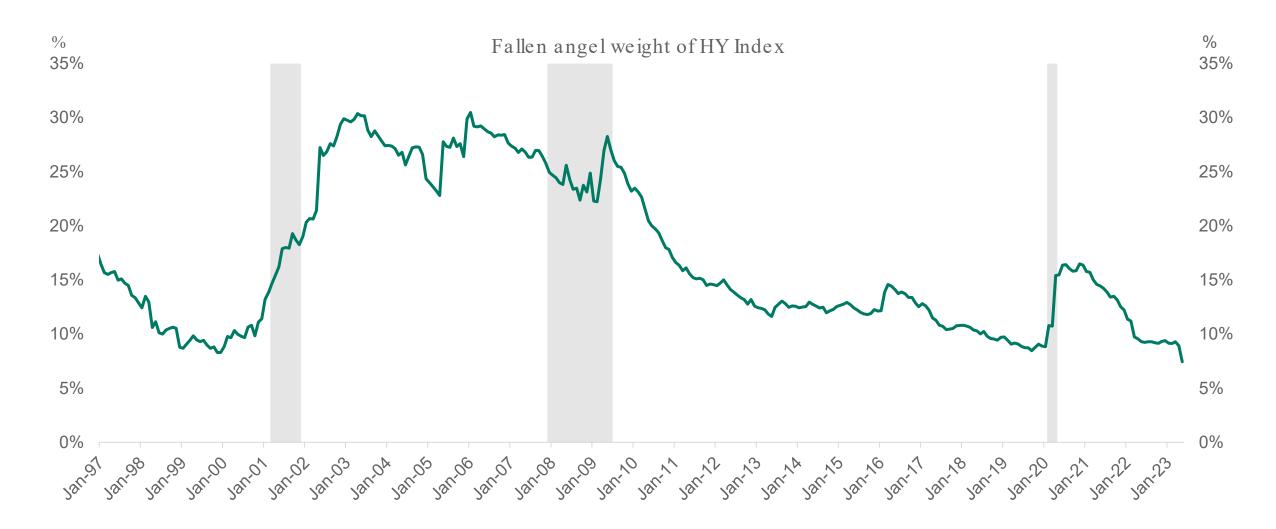


Source: Jay Ritter, Apollo Chief Economist

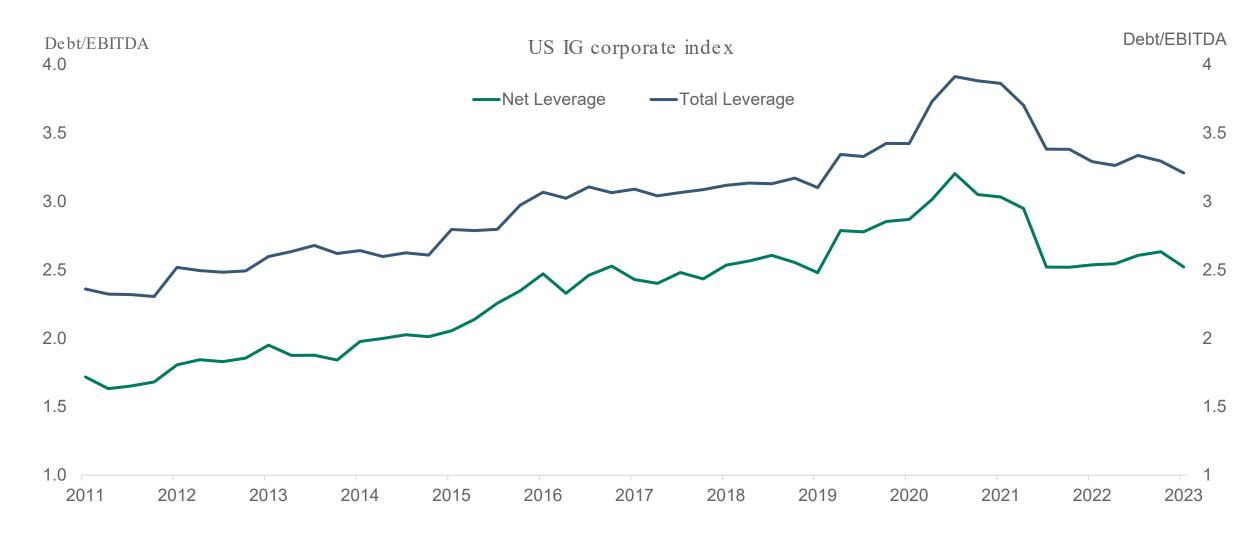
## M&A activity declining



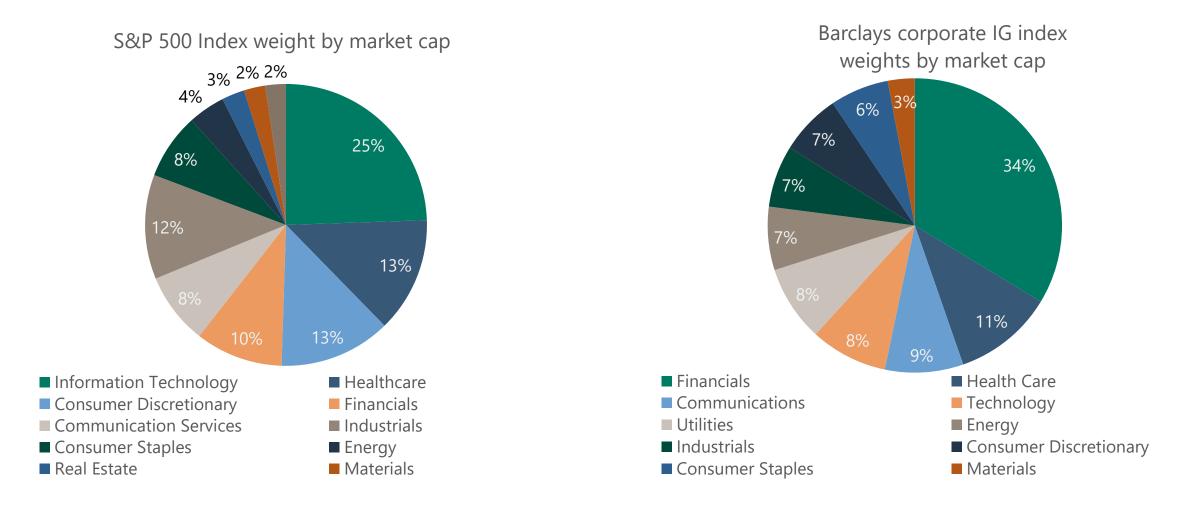
#### Declining share of fallen angels in the HY index



## IG leverage down after the pandemic

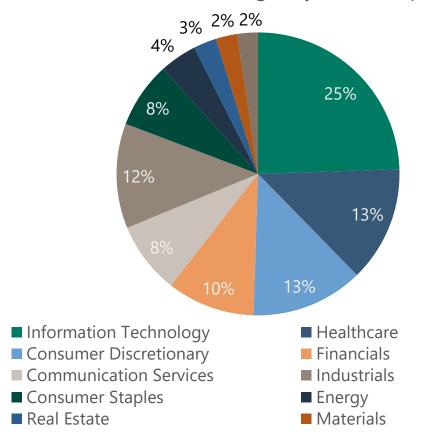


## Big differences between weights in S&P500 and IG index

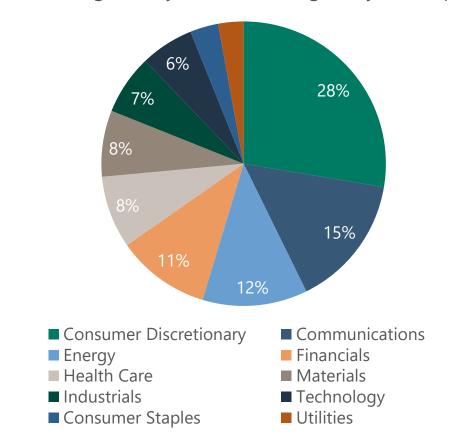


## Big differences between weights in S&P500 and HY index





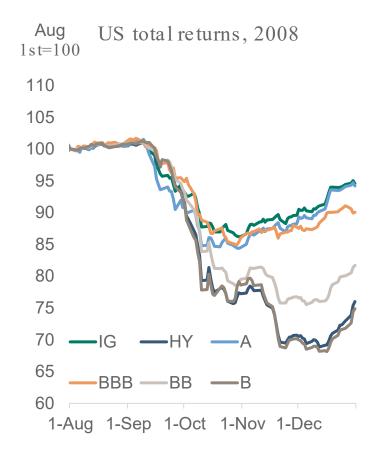
#### Bloomberg Barclays HY index weights by mkt cap

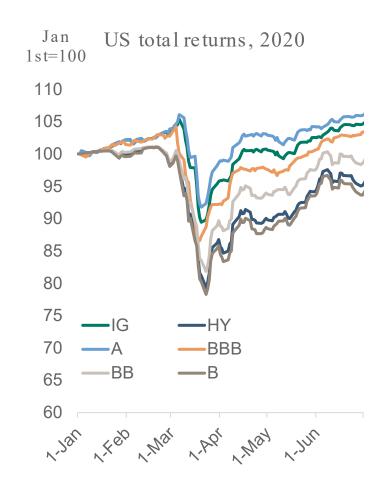


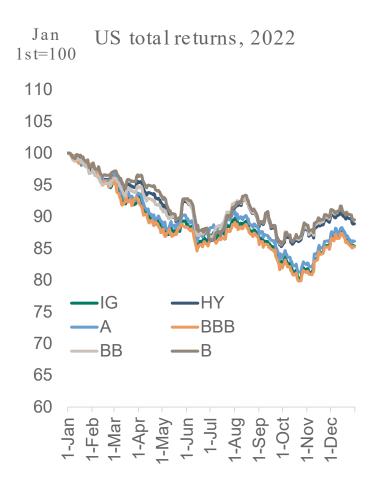
# Top issuer names for IG and HY

	Top 50 Investment Grade corporate bond issuers	Top 50 High Yield corporate bond issuers
	Bank of America Corporation	Ford Motor Credit Company LLC
2	JPMorgan Chase & Co.	CCO Holdings LLC/ CCO Holdings Capital Corp.
3	Morgan Stanley	Occidental Petroleum Corporation
4	Citigroup Inc.	Tenet Healthcare Corporation
5	Goldman Sachs Group Inc.	TransDigm Inc.
	Wells Fargo & Company	Carnival Corporation
7	HSBC Holdings PLC	Ford Motor Company
	Apple Inc.	Royal Caribbean Group
	AT&T Inc	CSC Holdings LLC
10	Verizon Communications Inc.	Community Health Systems Incorporated
11	Oracle Corporation	DISH DBS Corporation
12	Comcast Corporation	Caesars Entertainment Inc New
	Amazon.com Inc.	Bausch Health Companies Inc
14	UnitedHealth Group Inc.	Sirius Xm Radio Inc
	Amgen Inc.	Altice France S.A
16	T-Mobile USA Inc.	AAdvantage Loyalty IP Ltd/ American Airlines Inc
	AbbVie Inc.	Albertsons Cos Inc / Safeway Inc / New Albertsons LP / Albertsons LLC / (Albertsons Safeway LLC)
	CVS Health Corp	Nissan Motor Co Ltd
	Mitsubishi UFJ Financial Group Inc.	Mozart Debt Merger Subordinated Inc.
20	Intel Corporation	1011778 B.C. Unlimited Liability Company / New Red Finance Inc.
21	The Boeing Company	Equitrans Midstream Corporation
22	Sumitomo Mitsui Financial Group Inc	OneMain Financial Corporation
	Microsoft Corporation	Iron Mountain Incorporated
	Barclays PLC	T-Mobile US Inc
25	Walt Disney Company	Bombardier Inc.
26	Home Depot Inc	Sprint Capital Corporation
27	Charter Communications Operating LLC/Charter Communications Operating Capital Corp.	Icahn Enterprises L.P. / Icahn Enterprises Finance Corporation
	Anheuser-Busch InBev Worldwide Inc.	Hilton Domestic Operating Co Inc.
29	International Business Machines Corporation	Calpine Corporation
30	Broadcom Inc	Post Holdings Inc.
	Energy Transfer LP	United Rentals (North America) Inc.
	BNP Paribas SA	FirstEnergy Corp.
	Bristol-Myers Squibb Company	Univision Commmunications Inc.
	Raytheon Technologies Corporation	Vistra Operations Co LLC
35	Lowes Companies Inc.	The Goodyear Tire & Rubber Company
	Walmart Inc	Bath & Body Works Inc
	Pacific Gas and Electric Company	Intesa Sanpaolo S.p.A.
	Shell International Finance B.V.	Venture Global Calcasieu Pass LLC
39	HCA Inc.	Ball Corporation
	General Motors Financial Company Inc	Newell Brands Inc.
	Toyota Motor Credit Corp.	Service Properties Trust
	The Toronto-Dominion Bank	GFL Environmental Inc.
	Royal Bank of Canada	YUM Brands Inc
	Exxon Mobil Corporation	Prime Securities Services Borrower LLC and Prime Finance Inc.
	Pepsico Inc	Uber Technologies Inc
	The Cigna Group	Transocean Inc.
	Societe Generale S.A.	FMG Resources (August 2006) Pty Ltd.
	Union Pacific Corporation	Uniti Group LP/Uniti Fiber Holdings Inc/Uniti Group Finance 2019 Inc/CSL Capital LLC
	Enterprise Products Operating LLC	Mauser Packaging Solutions Holding Company
50	WarnerMedia Holdings Inc.	Standard Buildings Solutions Inc.

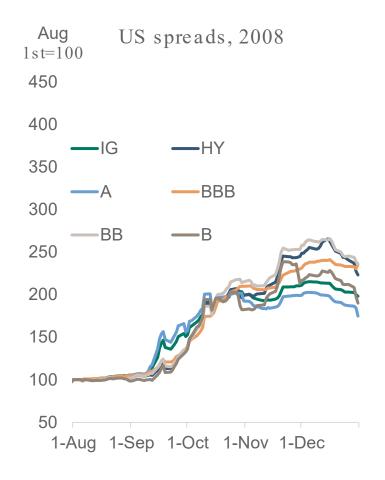
Synchronized sell-off in credit so far. Little differentiation between credits compared with 2008 and March 2020 episodes.

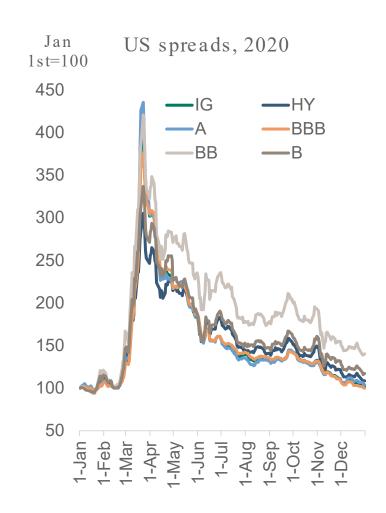


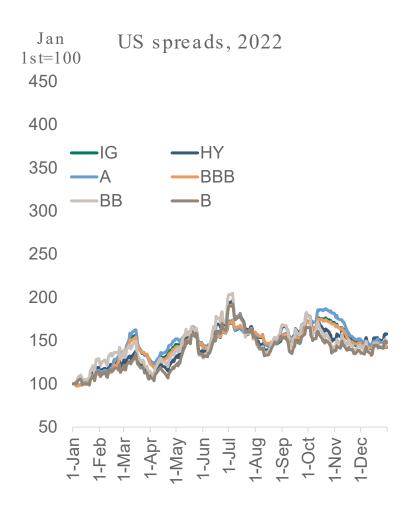




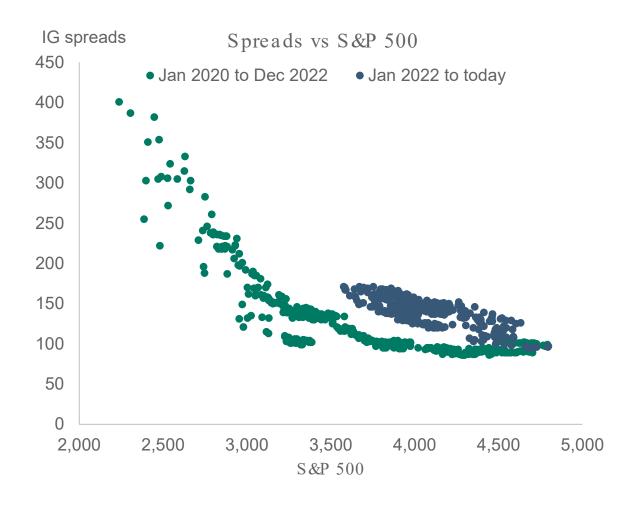
Synchronized sell-off in credit so far. Little differentiation between credits compared with 2008 and March 2020 episodes.

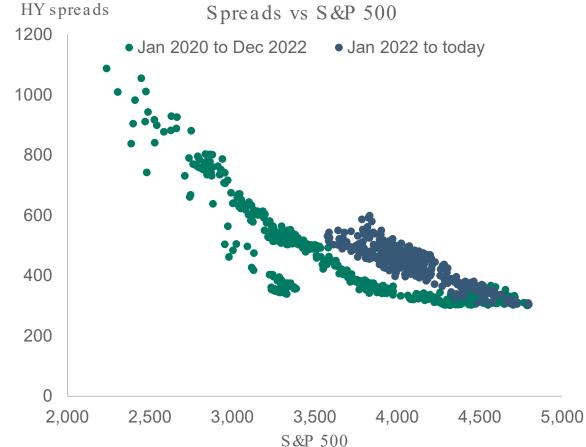




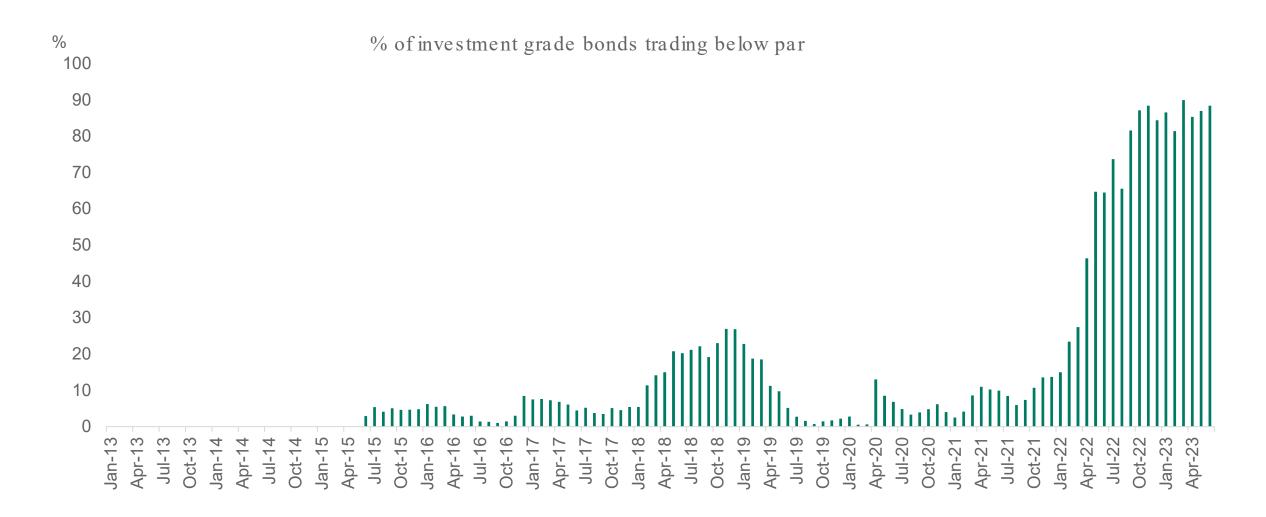


#### Valuation of credit versus equities

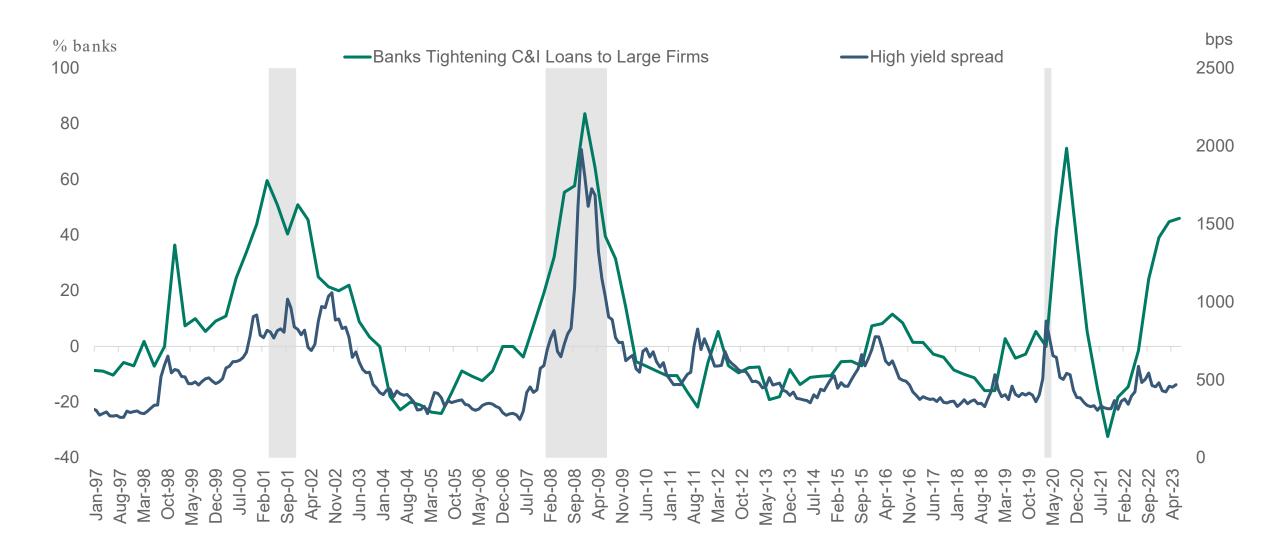




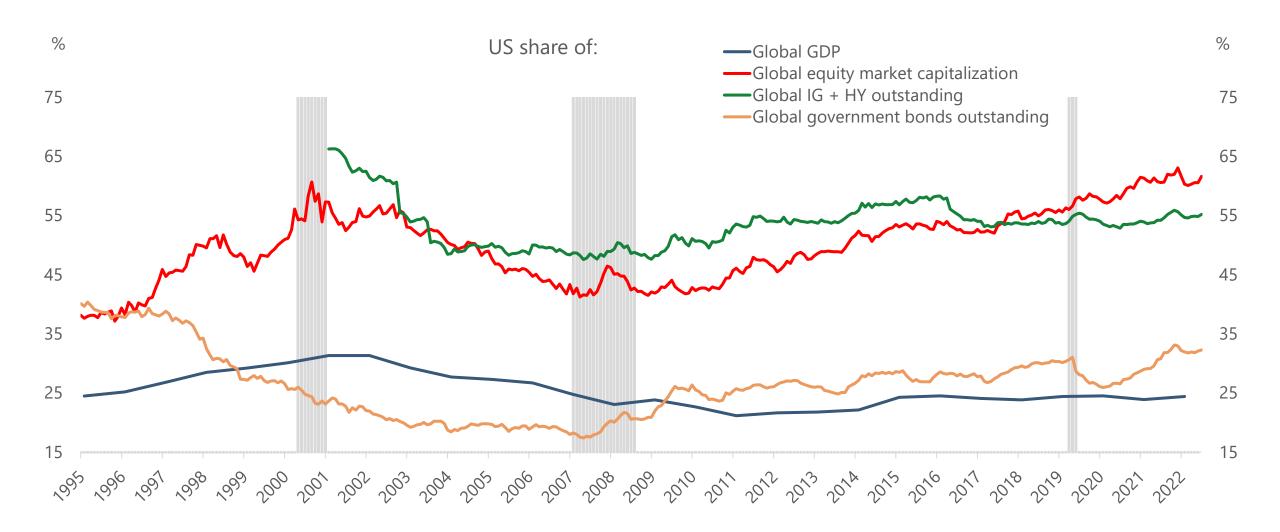
#### 84% of the US IG market trading below par



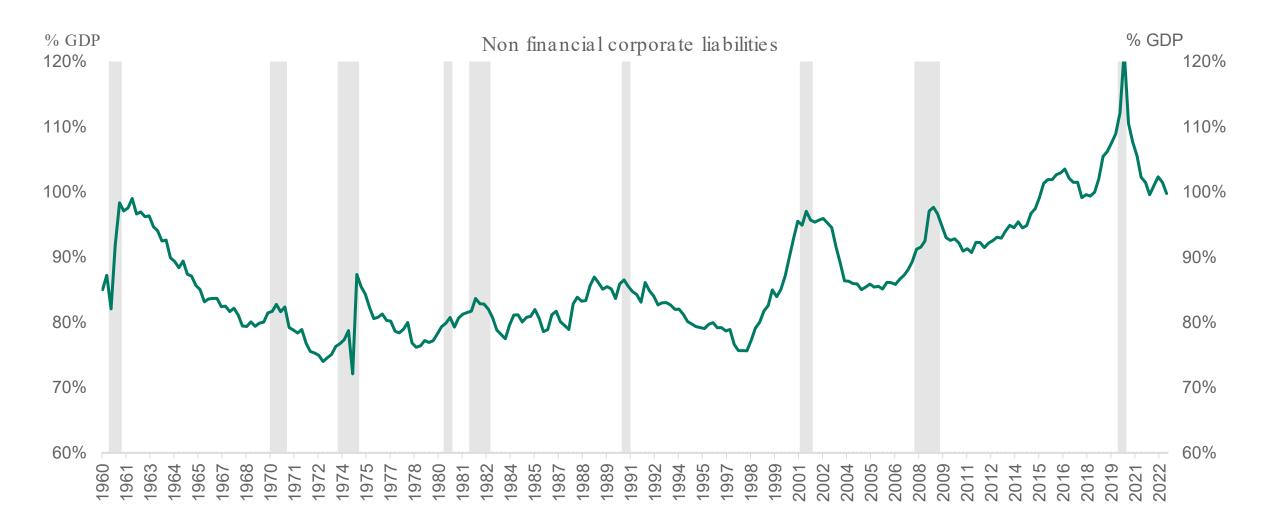
#### Banks tightening credit conditions, HY spread should be trading wider



#### US share of the world economy and global financial markets

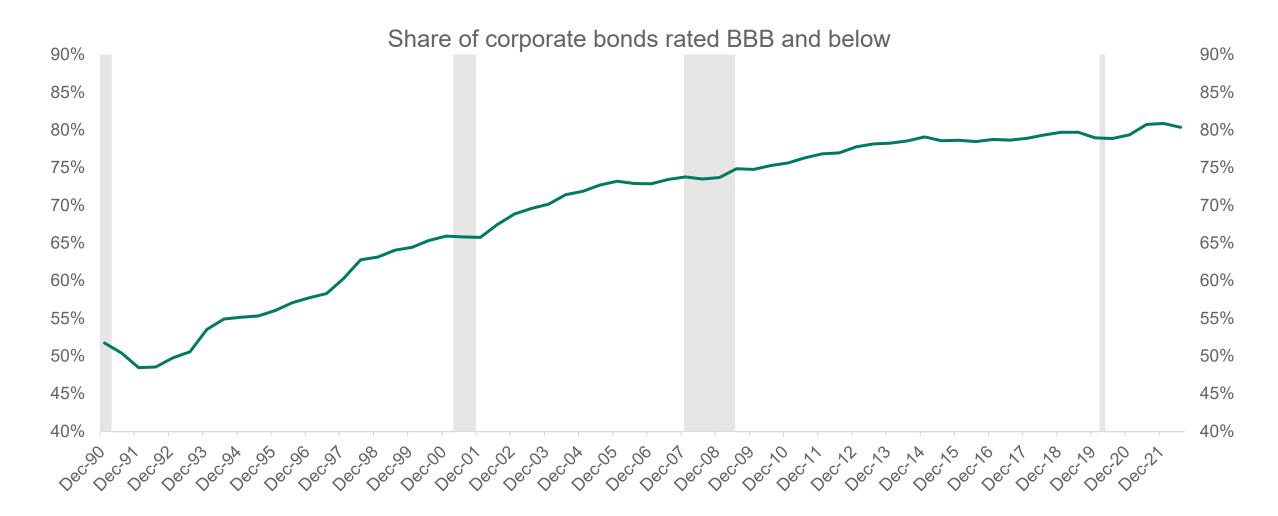


#### Corporate debt is coming down as a share of GDP



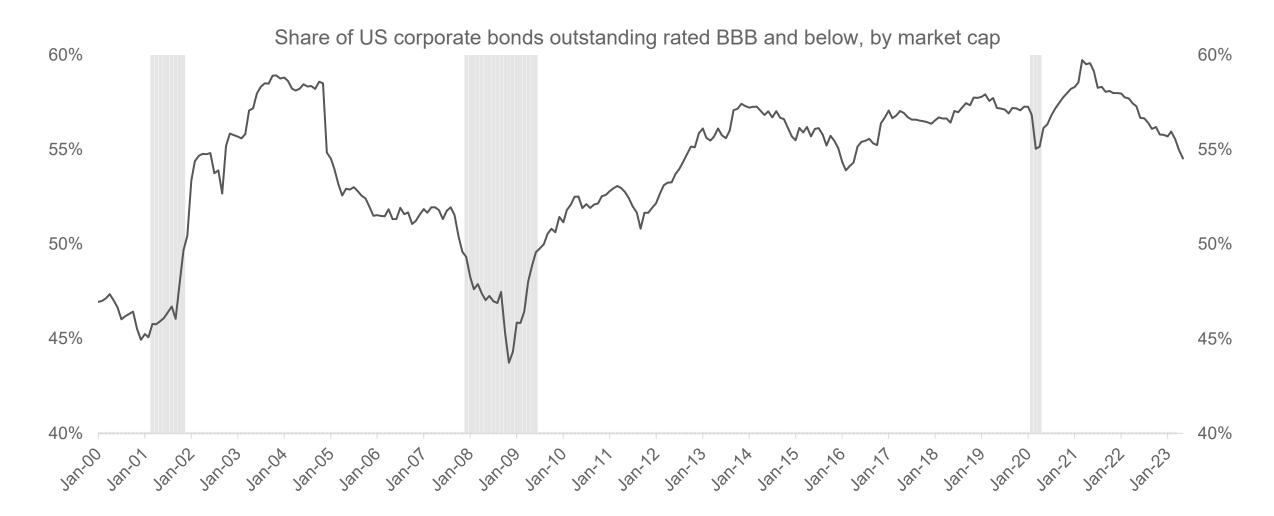
Source: FRB, Haver Analytics, Apollo Chief Economist

#### Lower-rated firms are by definition more vulnerable to rising interest rates



Source: S&P, Apollo Chief Economist

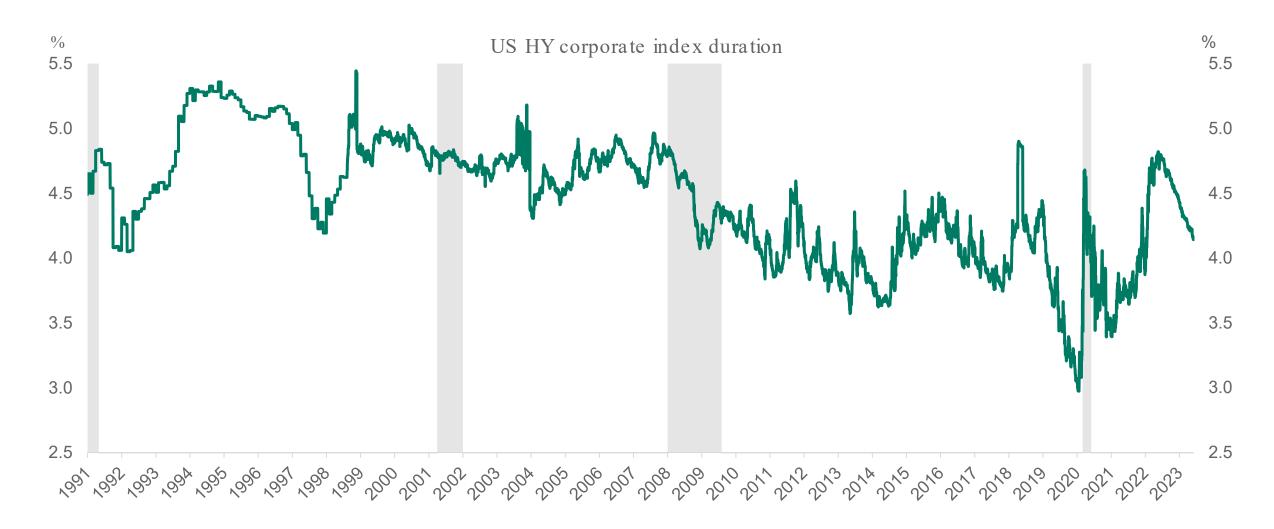
#### Share of corporate bond market value outstanding rated BBB and below



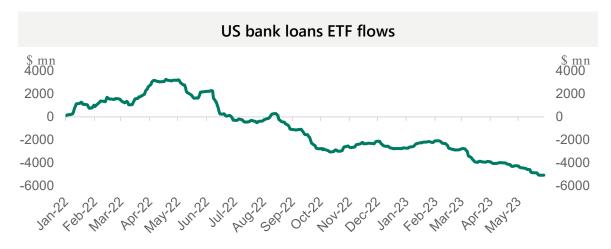
#### IG credit index duration declining

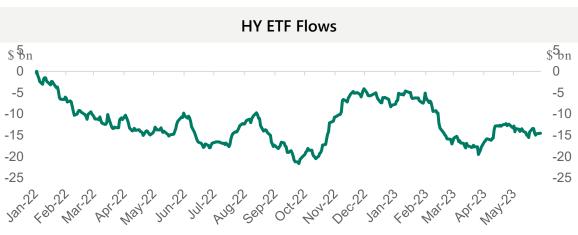


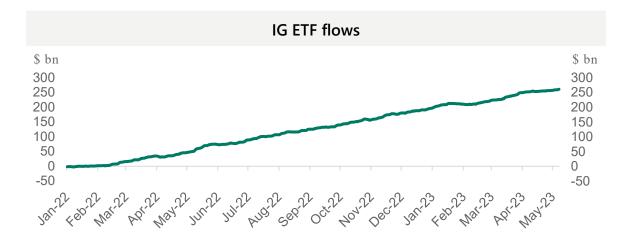
#### HY credit index duration

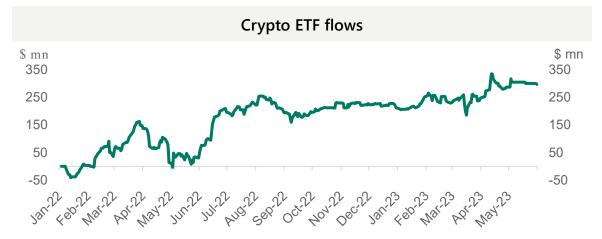


#### Flow monitor

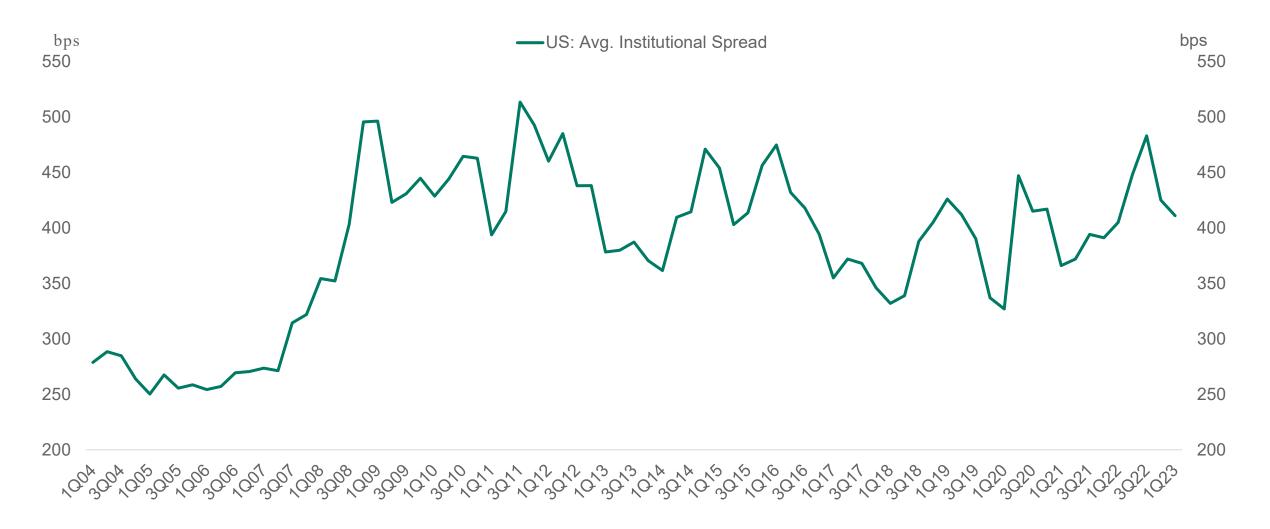






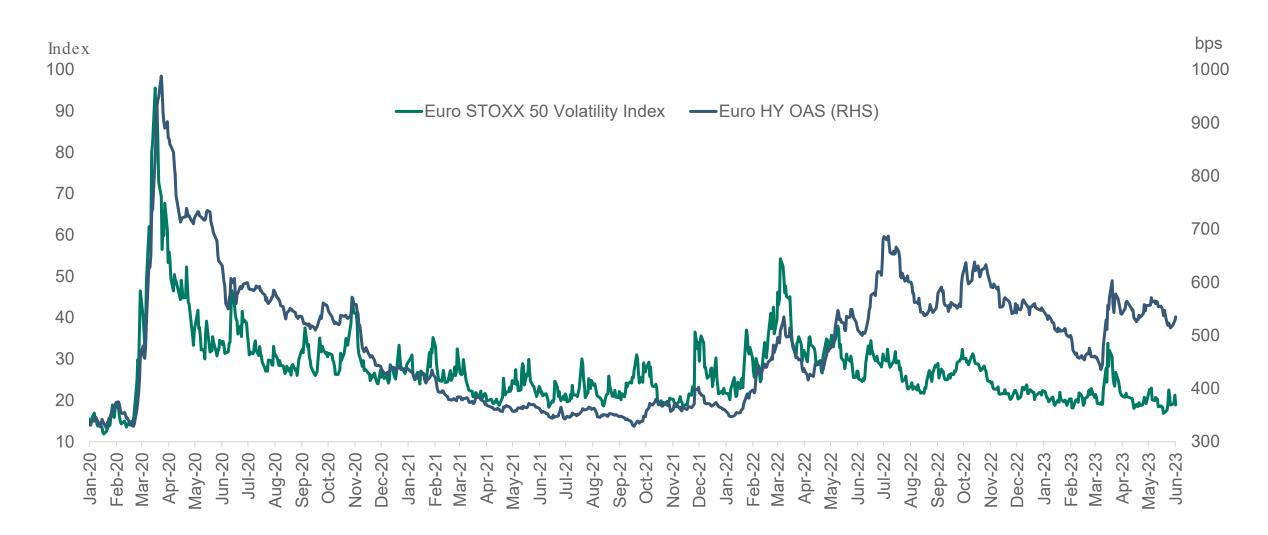


#### Loans: Institutional spread relative to bespoke loans

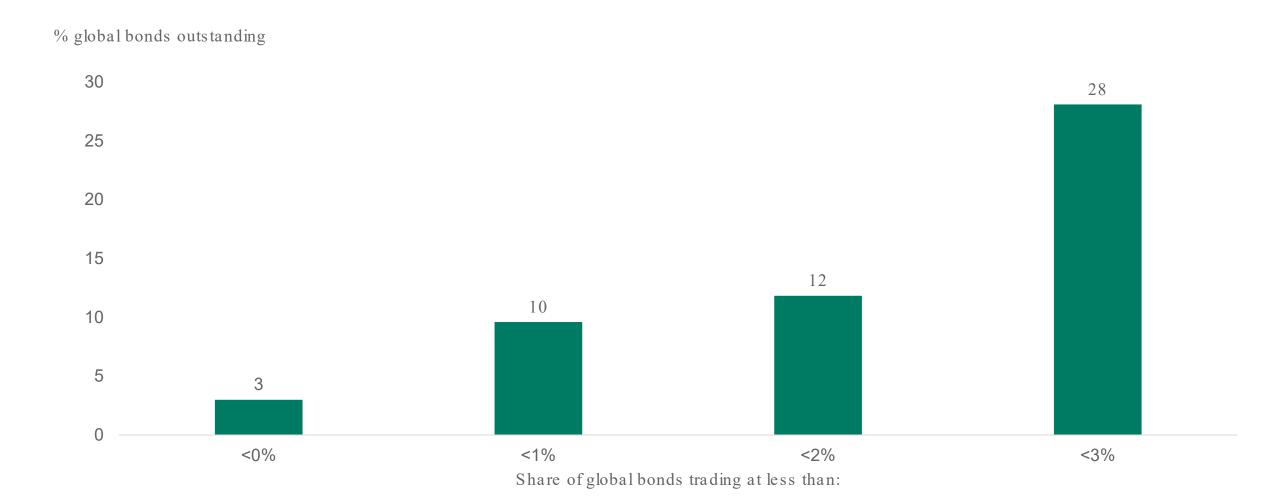


Source: Pitchbook LCD, Apollo Chief Economist

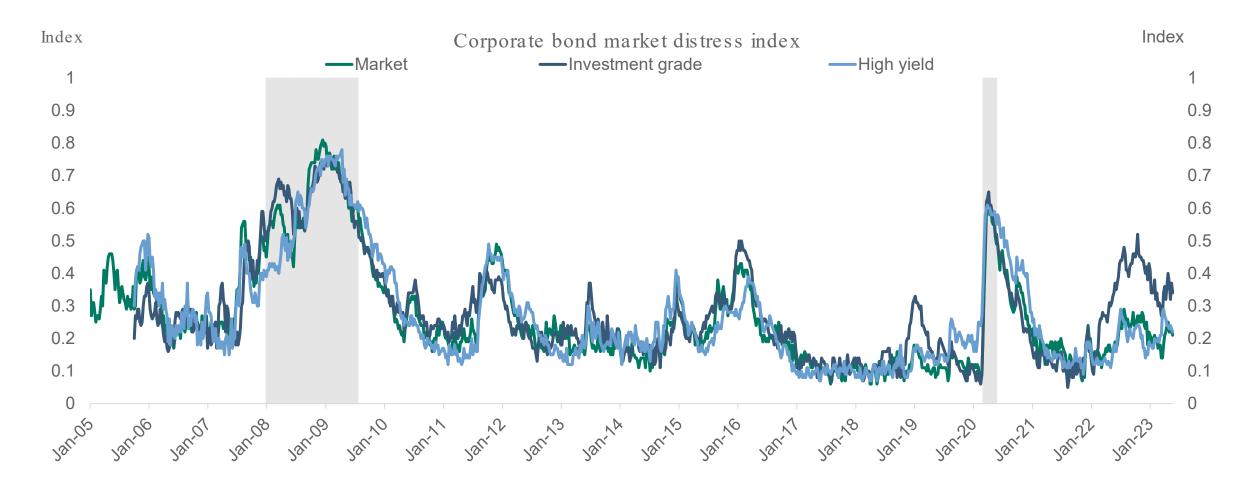
#### Convergence between EU equity vol and EU HY spreads



#### 12% of bonds in the world trading at less than 2% yield



#### NY Fed measure of corporate bond market functioning elevated level of distress in IG

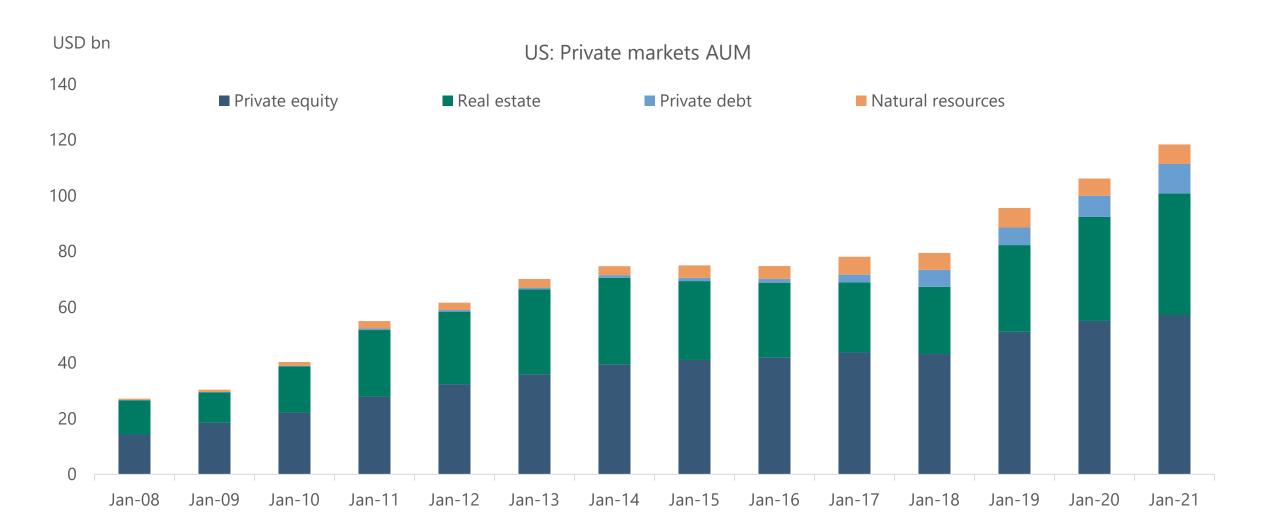


Source: FRB of New York, Apollo Chief Economist (Note: Corporate bonds are a key source of funding for U.S. non-financial corporations and a key investment security for insurance companies, pension funds, and mutual funds. Distress in the corporate bond market can thus both impair access to credit for 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.

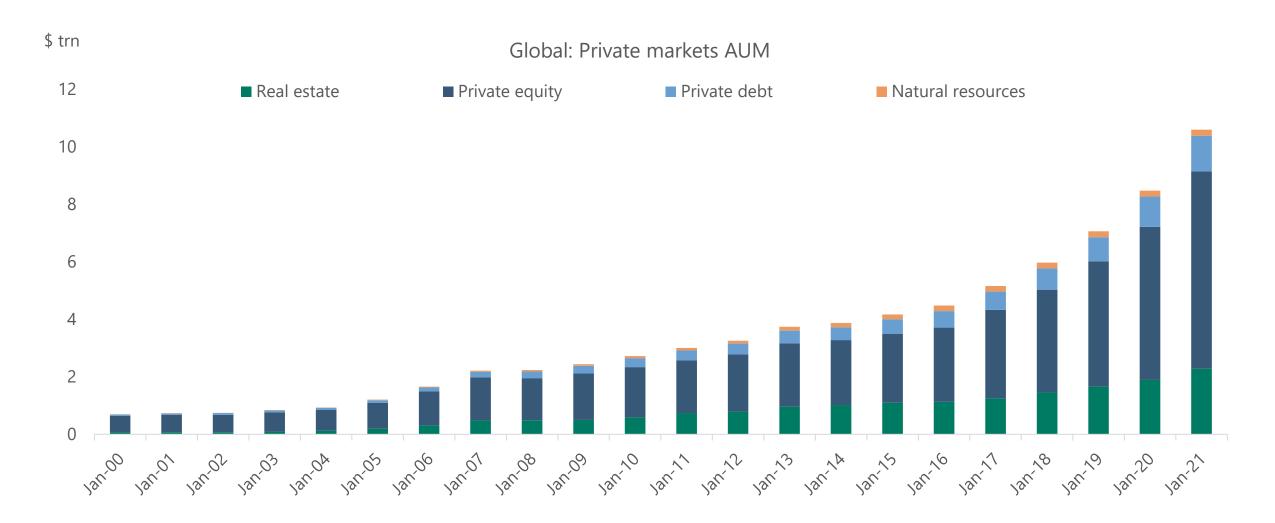
#### 24% of HY bonds trading with yield higher than 10%



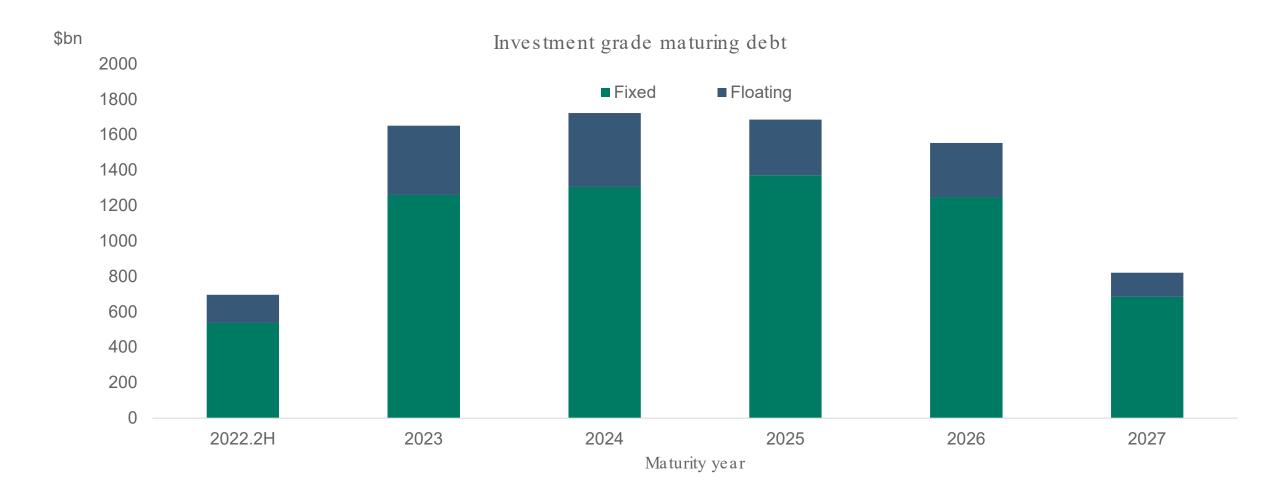
# US: Total assets under management in private markets



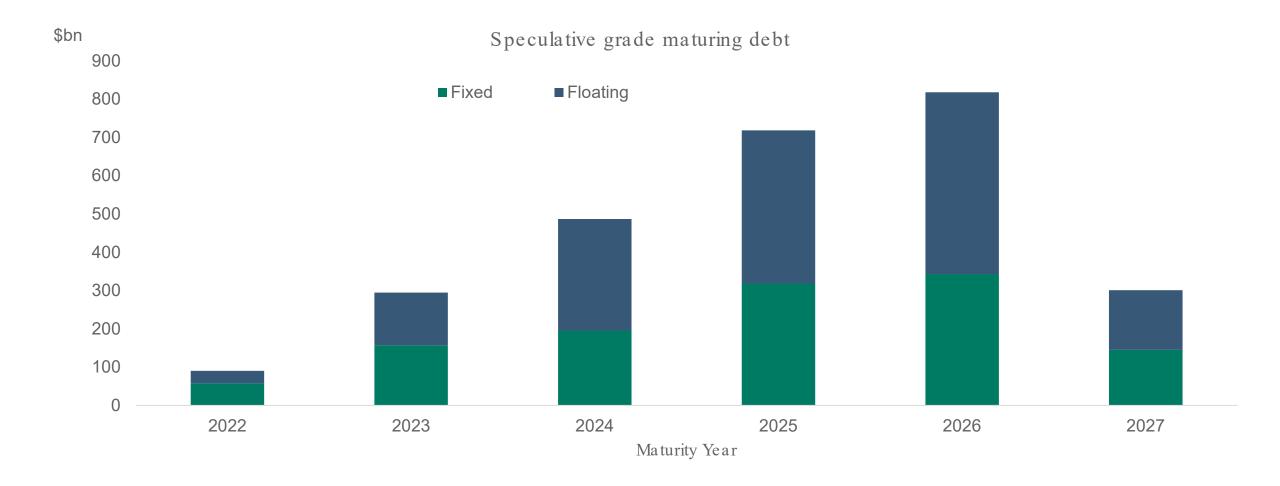
#### Total assets under management in private markets funds globally



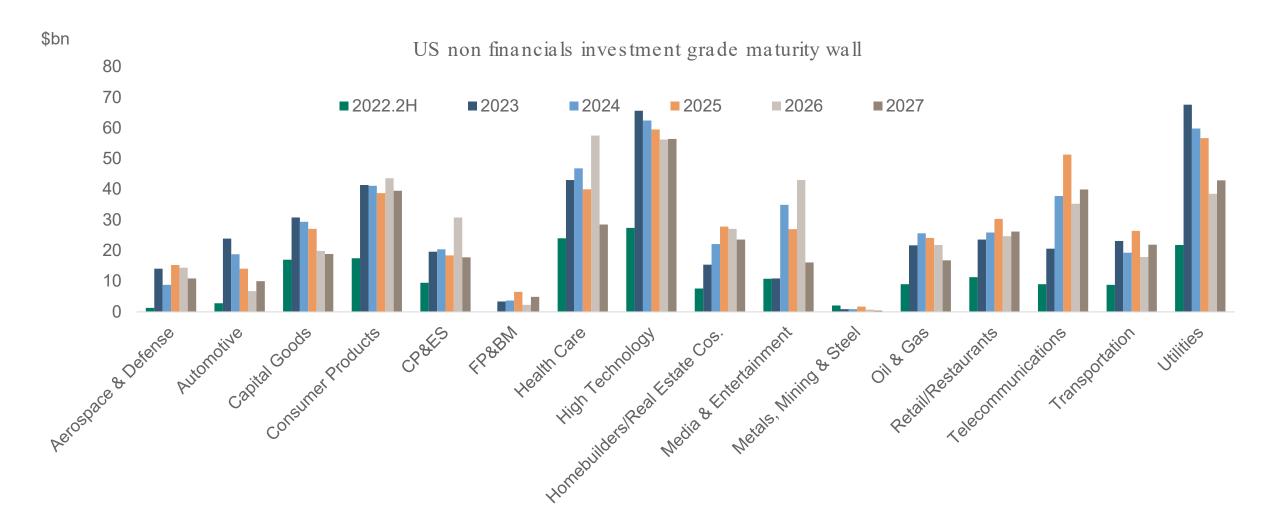
#### Investment grade maturity wall



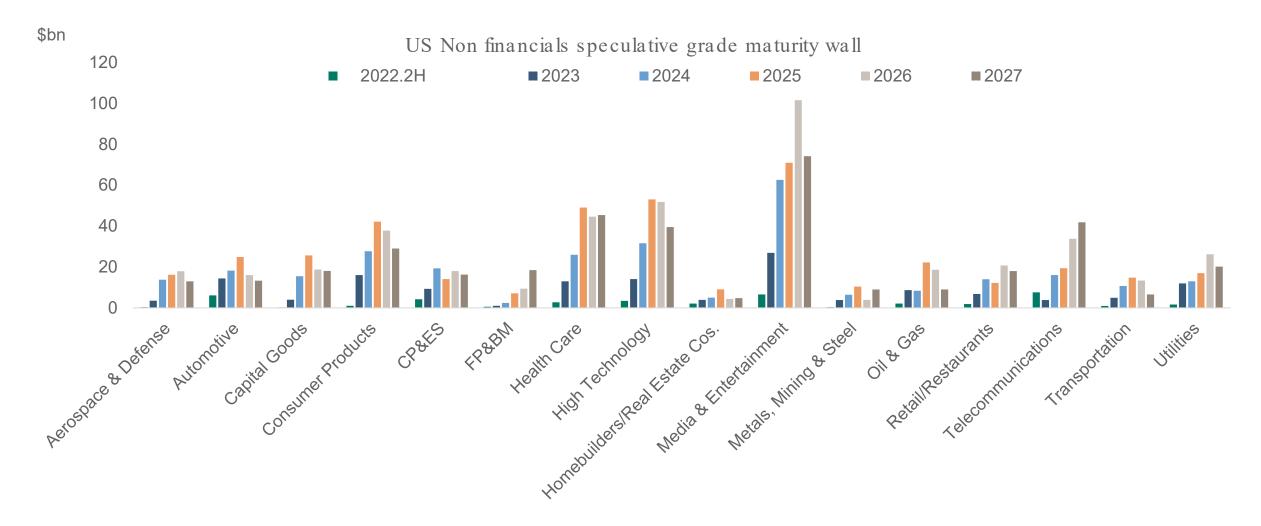
## High yield maturity wall



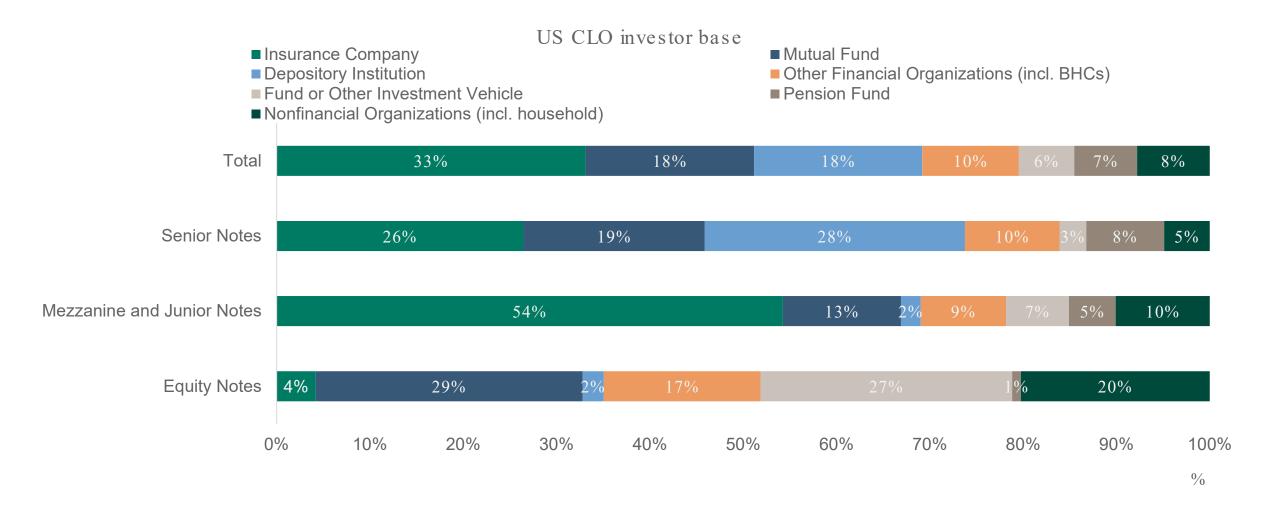
#### IG: US Non financials maturity wall



#### HY: US Non financials maturity wall

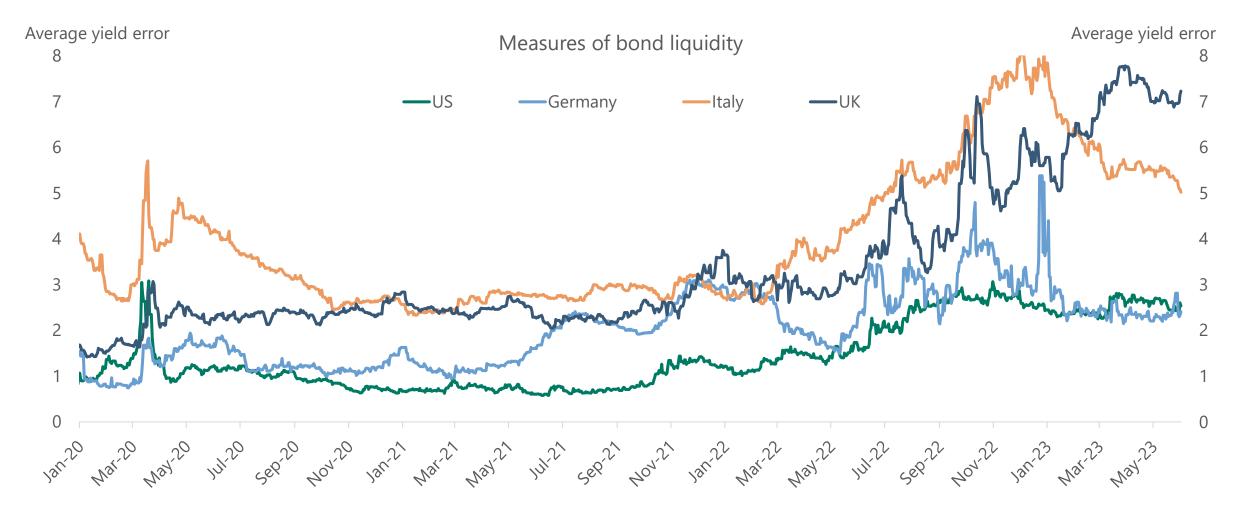


#### US CLO investor base by tranche



Source: TIC, Moody's data, Fed, Apollo Chief Economist

#### Liquidity deteriorating in UK bond market



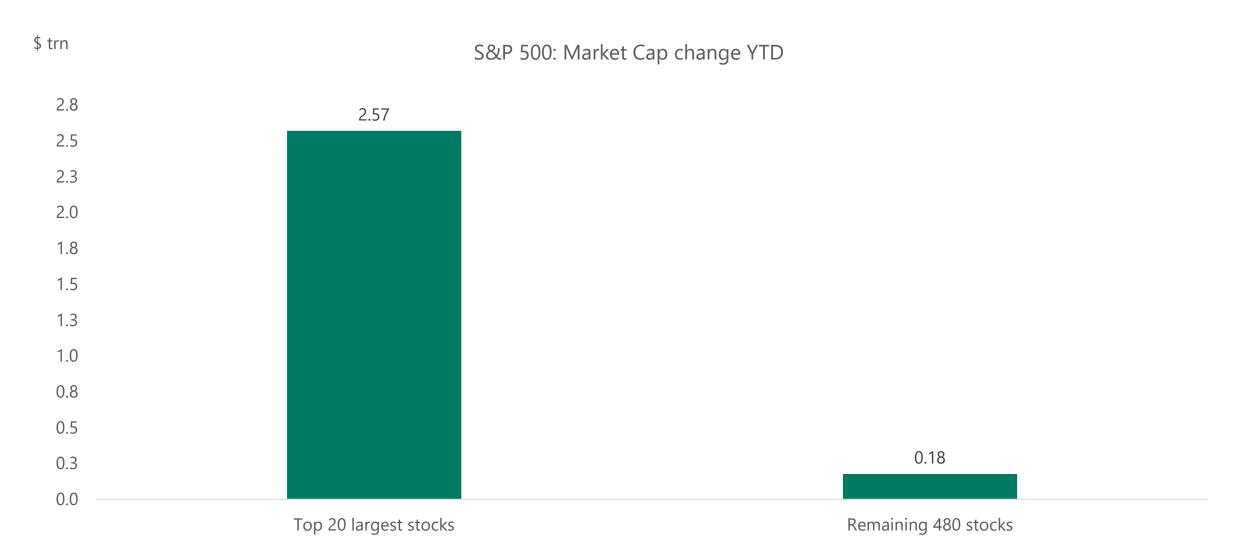
Source: Bloomberg, Apollo Chief Economist. Note: The index displays the average yield error across the universe of government notes and bonds with remaining maturity 1-year or greater, based off the intra-day Bloomberg relative value curve fitter. When liquidity conditions are favorable the average yield error 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.

#### 29% of the loans in the Morningstar LSTA Leveraged Loan Index are rated B-



Source: Morningstar, Apollo Chief Economist

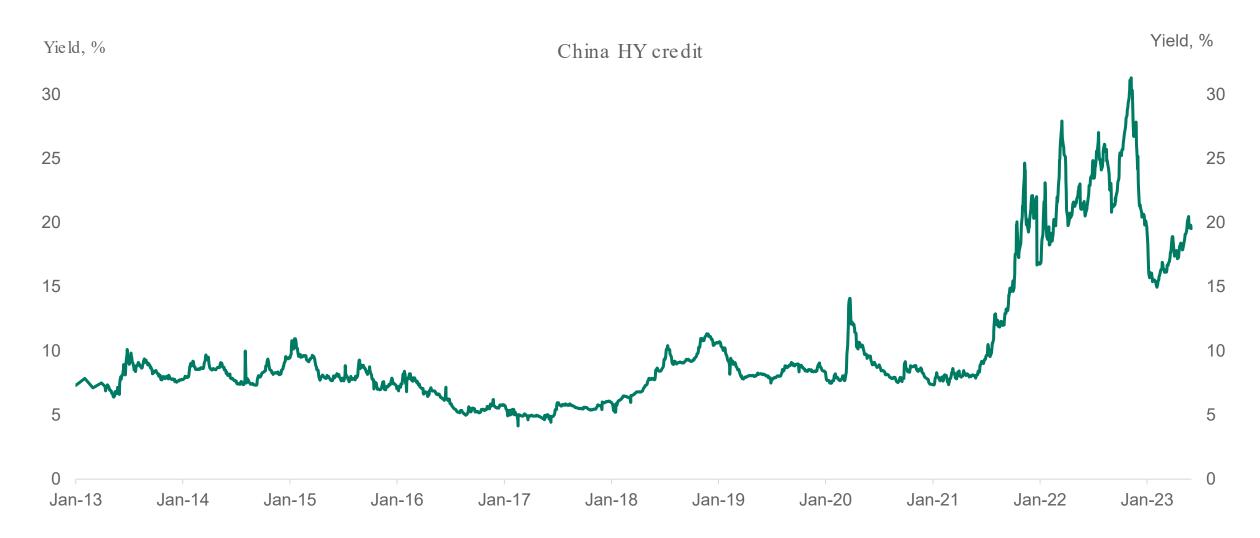
#### Not a broad-based rally in the S&P500



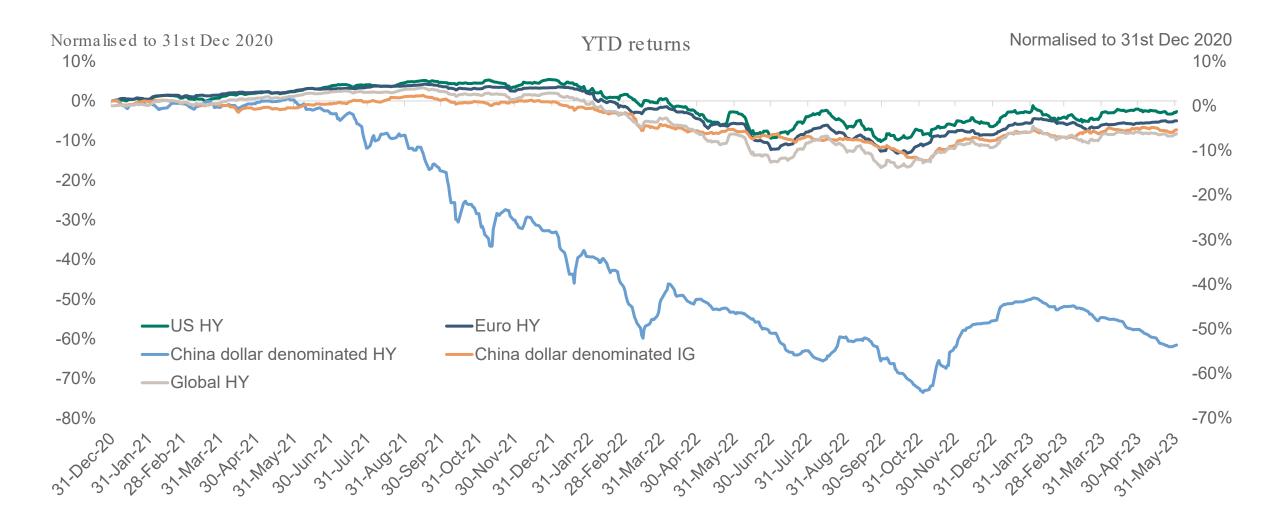
# China HY



## The yield on China HY is now at 20%

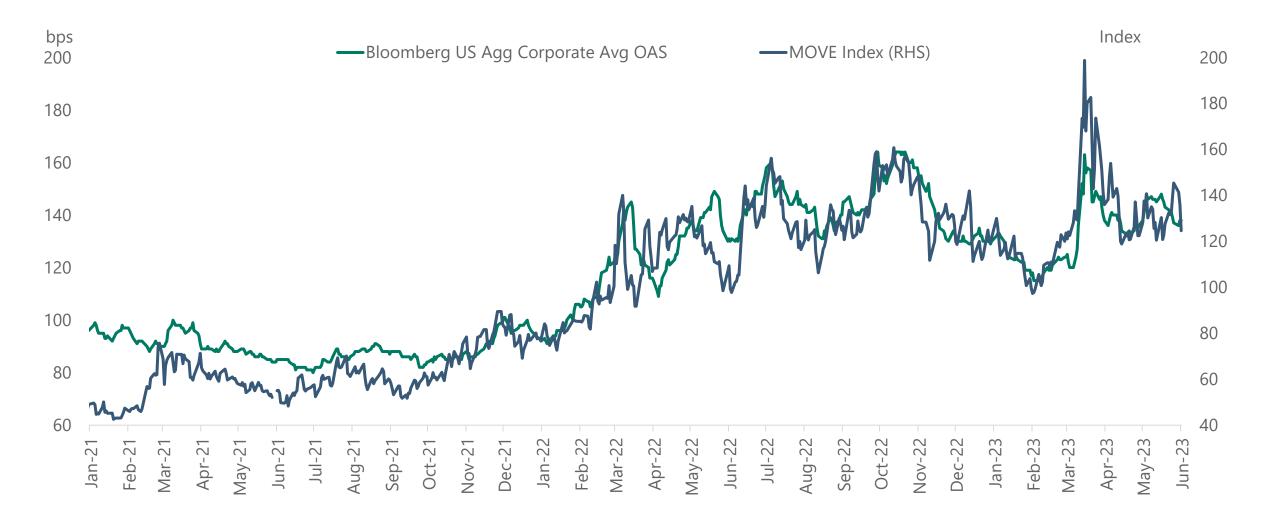


#### Little contagion from China HY to US and EU credit markets

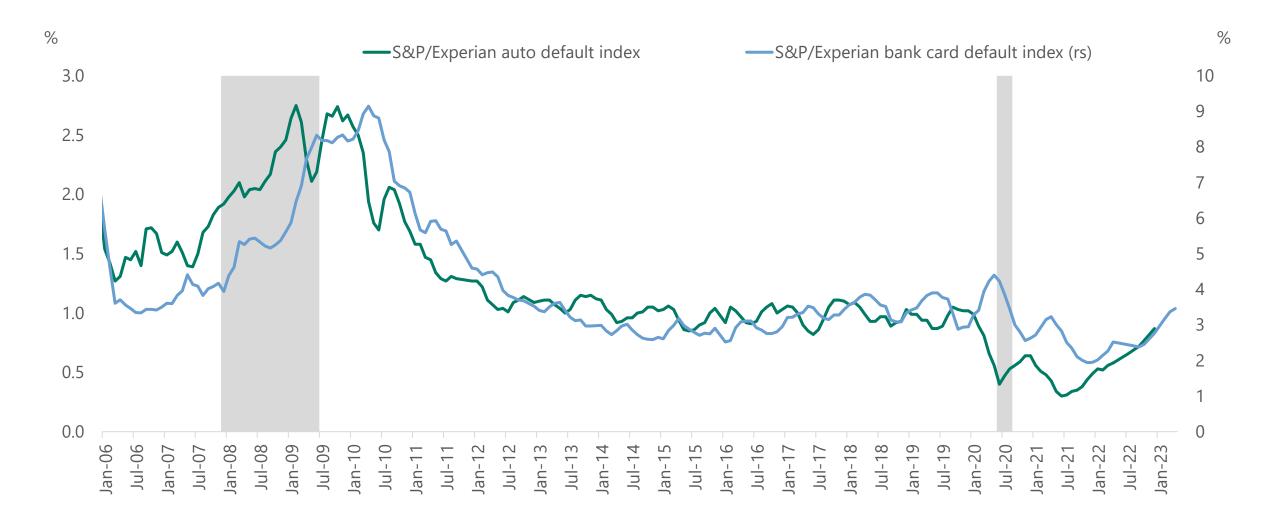


Source: ICE BofA, Bloomberg, Apollo Chief Economist,

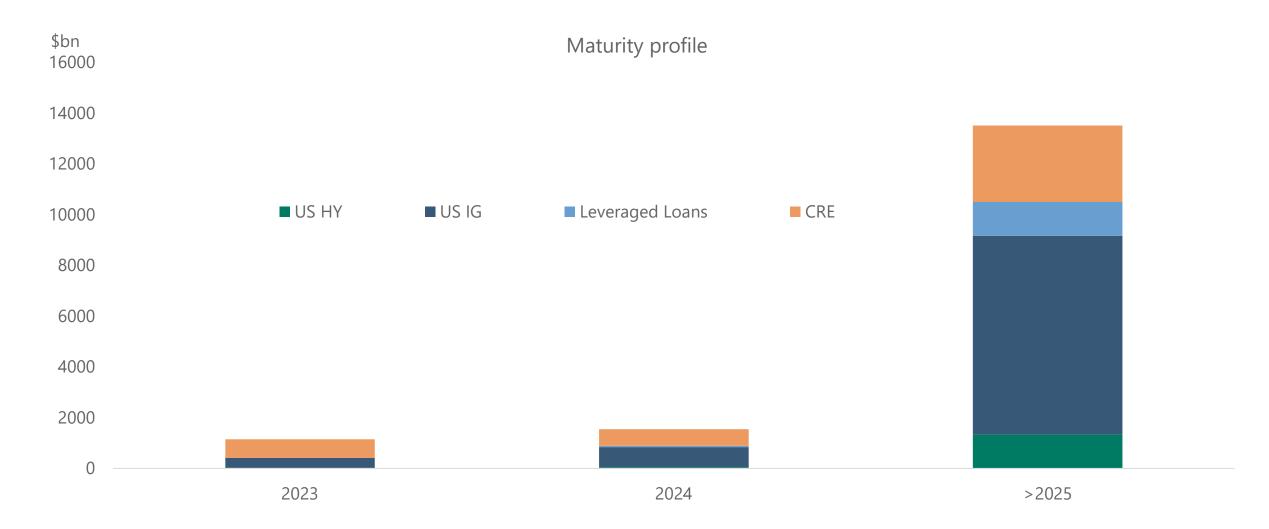
#### US IG spread widening



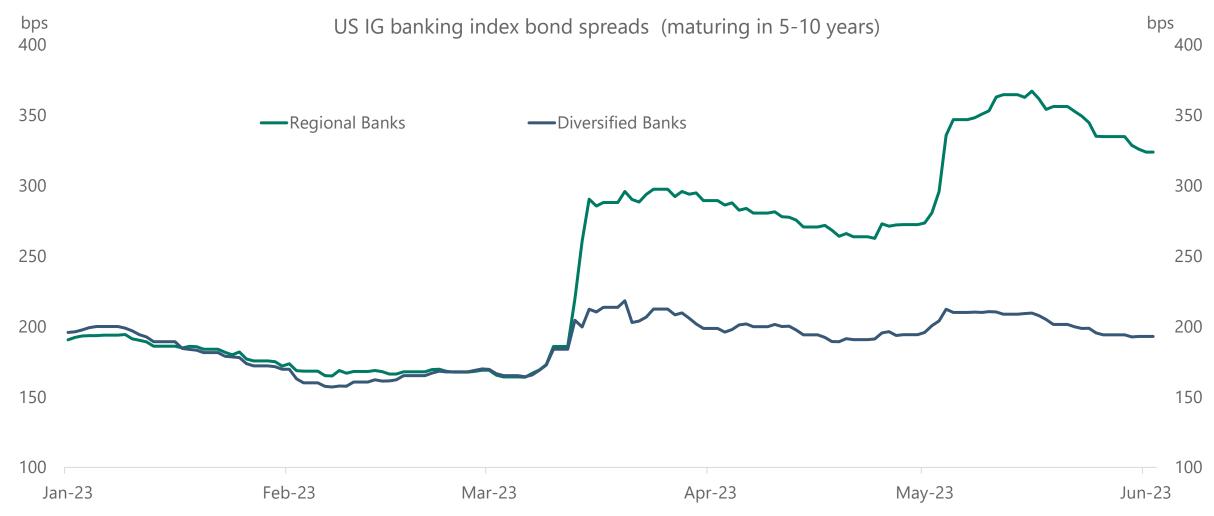
#### Default rates for auto loans and credit cards are moving higher



## Maturity profile for US fixed income

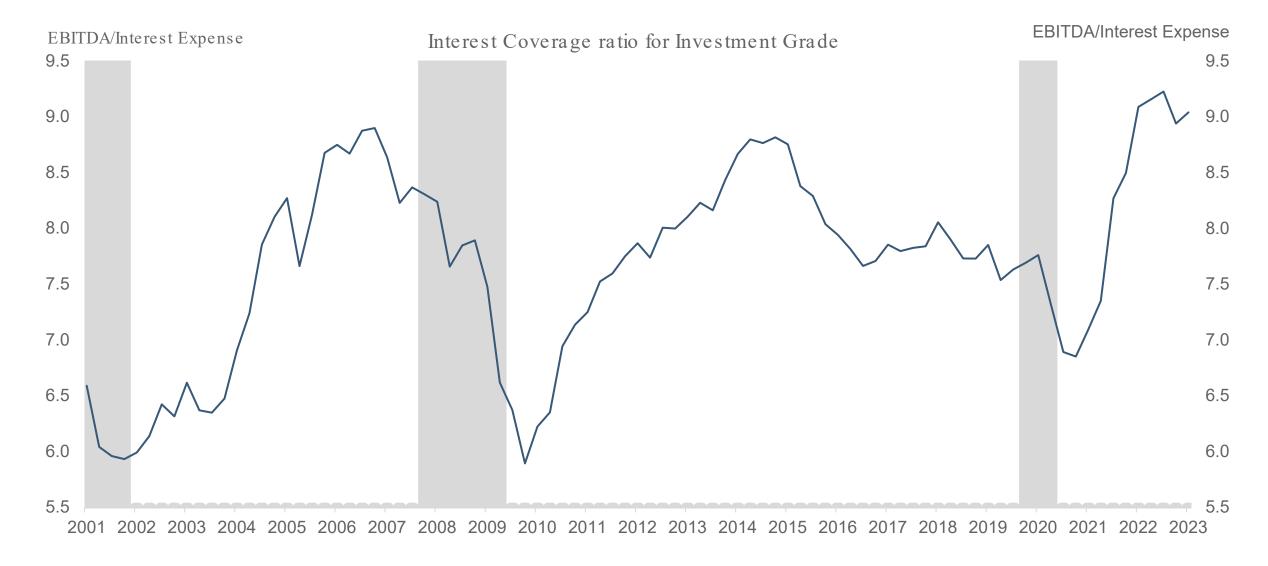


#### Regional bank spreads still very wide

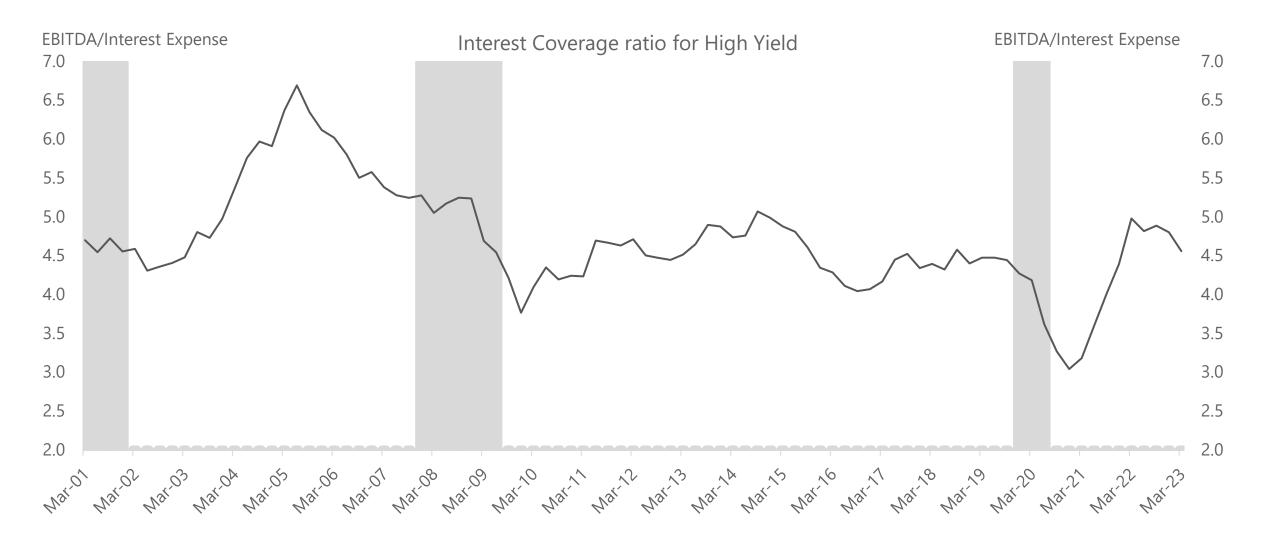


Source: ICE BofA, Bloomberg, Apollo Chief Economist. Note: Unweighted average spreads of bonds from ICE 5-10 Year US Banking Index, C6PX Index for bonds issued before 1st Jan 2023. There are 8 banks in the Regional index and 41 banks in the Diversified index, and Regional banks include BankUnited Inc,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

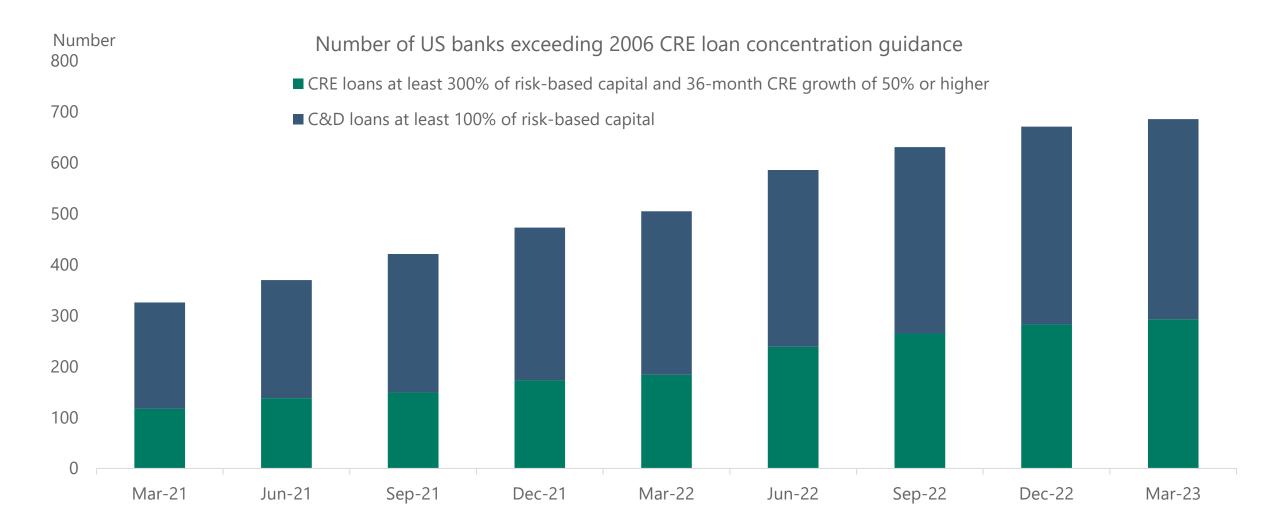
#### IG ICR



#### High yield ICR



#### Almost 700 US banks exceed the 2006 CRE loan concentration guidance





# Torsten Slok, Ph.D.

Chief Economist

Apollo Global Management
tslok@apollo.com

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.