

### Monthly HG Market Review

### Dec '23: Pricing a soft landing

#### Dec '23: Pricing a soft landing

The bullish market sentiment continued in December on a combination of a dovish Fed pivot, a further slowdown in inflation and a still resilient US economy. First, the dovish December FOMC arguably had the biggest market impact. Chair Powell stated during the press conference that the Fed started discussing cuts for 2024, reflecting the progress on inflation and an outlook for a soft landing (see <u>US Watch: FOMC quick reaction- A holiday gift: the dovish pivot arrives</u>). Second, US inflation data remained benign, with November core PCE coming in at just +0.1% MoM, as expected by our economists (see <u>US Watch: November PCE inflation tracking: Further progress towards target</u>). Third, the US economic growth remained resilient (see <u>US Watch: November employment: On a glide path, US Watch: November retail sales: shopping online and dining out).</u>

### The times are changing

Following the developments in December the markets are now pricing a close to 100% chance of a Fed cut by March and a total of 6.3 Fed cuts in 2024, up from 4.6 cuts on November 30<sup>th</sup>. Our economist also revised their forecast for Fed cuts in 2024 to four from three. They also revised the outlook for inflation lower and for growth – higher (see US Economic Viewpoint: Sticking the landing).

### Rally continued

Stocks delivered the highest return in December ( $\pm 4.54\%$ ), followed by IG credit ( $\pm 4.04\%$ ), high yield ( $\pm 3.69\%$ ) and Treasuries ( $\pm 3.41\%$ ), loans underperformed ( $\pm 1.65\%$ ).

### ICE BofA IG index spread 7bps tighter in December

The ICE BofA US IG index spread was 7bps tighter in December for an excess return of +31bps. The January monthly rebalancing did not impact the index spread, leaving it at 104bps. December top performing sectors in terms of excess returns were the interestrate sensitive REITs (+101bps) and Commercial & Consumer Finance (+82bps), followed by Paper and Forest Products (+64bps). Underperforming sectors were Tobacco (-39bps), Technology (-36bps) and Media & Entertainment (-9bps).

#### Outlook

The dovish Fed pivot reduced some of the key risks for US IG spreads. We mark to market our expected range for IG spreads over the next six months to 100 - 120bps, compared to 104bps currently.

### Supply

We look for January IG supply in \$150 - \$160bn range.

#### Fund flows

Net inflows to US IG bond funds & ETFs totaled +0.50% of assets in December (based only on funds reporting weekly), up from +0.39% of assets in November (based on all funds).

Bof A Securities does and seeks to do business with issuers covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Refer to important disclosures on page 18 to 20.

#### 02 January 2024

High Grade Credit Strategy United States

Yuri Seliger Credit Strategist BofAS +1 646 855 7209 yuri.seliger@bofa.com

Jean-Tiago Hamm Credit Strategist BofAS jean-tiago.hamm@bofa.com

**Srini Talagadadeevi** Credit Strategist BofAS sreenivasa.rao@bofa.com

### Dec '23: Pricing a soft landing

The bullish market sentiment continued in December on a combination of a dovish Fed pivot, a further slowdown in inflation and a still resilient US economy. First, the dovish December FOMC arguably had the biggest market impact. Chair Powell stated during the press conference that the Fed started discussing cuts for 2024, reflecting the progress on inflation and an outlook for a soft landing (see <u>US Watch: FOMC quick reaction- A holiday gift: the dovish pivot arrives</u>). Second, US inflation data remained benign, with November core PCE coming in at just +0.1% MoM, as expected by our economists (see <u>US Watch: November PCE inflation tracking: Further progress towards target</u>). Third, the US economic growth remained resilient (see <u>US Watch: November employment: On a glide path, US Watch: November retail sales: shopping online and dining out).</u>

### The times are changing

Following the developments in December the markets are now pricing a close to 100% chance of a Fed cut by March and a total of 6.3 Fed cuts in 2024, up from 4.6 cuts on November 30<sup>th</sup> (Exhibit 2). Our economist also revised up their forecast for Fed cuts in 2024 to four from three. They also revised the outlook for inflation lower and for growth – higher (see <u>US Economic Viewpoint: Sticking the landing</u>).

### Rally continued

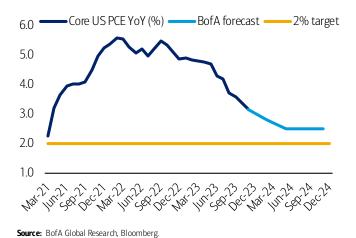
The higher chances of a soft landing and the dovish pivot by the Fed led to a rally in both risk assets and a decline in interest rates. Hence stocks delivered the highest return in December (+4.54%), followed by IG credit (+4.04%), high yield (+3.69%) and Treasuries (+3.41%), while loans underperformed due to low duration (+1.65%).

### ICE BofA IG index spread 7bps tighter in December

The ICE BofA US IG index spread was 7bps tighter in December for an excess return of +31bps. The January monthly rebalancing did not impact the index spread, leaving it at 104bps. December top performing sectors in terms of excess returns were the interestrate sensitive REITs (+101bps) and Commercial & Consumer Finance (+82bps), followed by Paper and Forest Products (+64bps). Underperforming sectors were Tobacco (-39bps), Technology (-36bps) and Media & Entertainment (-9bps).

### Exhibit 1: Benign US inflation

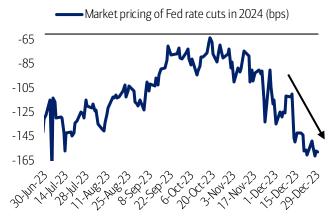
US inflation moderated further in November.



BofA GLOBAL RESEARCH

#### Exhibit 2: Pricing in more Fed cuts in 2024

Markets now price 6.3 Fed rate cuts in 2024, up from 4.6 at the end of November.

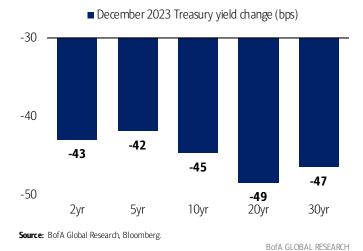


Source: BofA Global Research, Bloomberg.



#### **Exhibit 3: Rates rallied in December**

Treasury yields curve moved lower in a mostly parallel manner in December.



### **December 2023 Returns**

#### Exhibit 4: Broad Asset Class Total Return Performance, December 2023

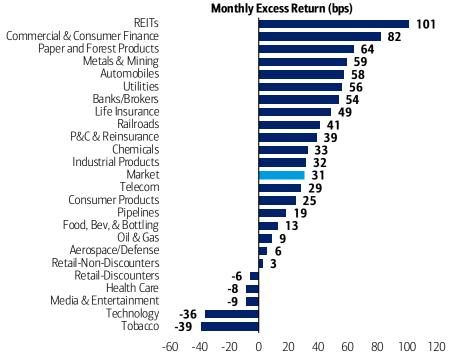
Monthly total return for broad asset classes in Dec 2023. Stocks outperformed (+4.54%).



Source: ICE Data Indices, LLC, Bloomberg

#### Exhibit 5: High grade sector excess return, December 2023

Market excess return: +31bps. REITs (+101bps) was the top performer, Tobacco (-39bps) was the bottom performer.



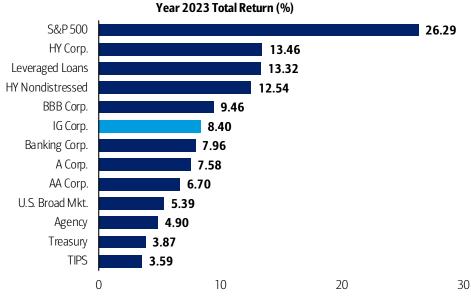
Source: ICE Data Indices, LLC

BofA GLOBAL RESEARCH

### Year 2023 Returns

#### Exhibit 6: Broad Asset Class Total Return Performance, Year 2023

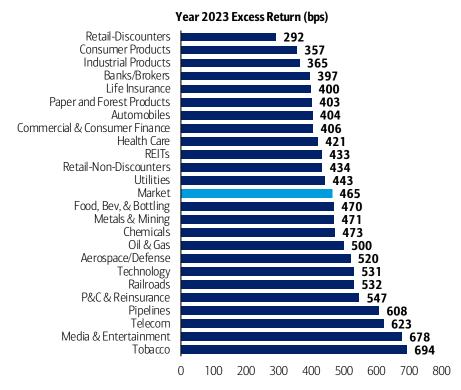
In 2023 stocks outperformed (+26.3%), followed by HY (+13.5%), loans (+13.3%) and IG corporates (+8.4%).



Source: ICE Data Indices, LLC, Bloomberg

#### Exhibit 7: High grade sector excess return, Year 2023

Tobacco (+694) and Media & Entertainment (+678bsp) delivered the best excess returns in 2024.



Source: ICE Data Indices, LLC

BofA GLOBAL RESEARCH

### **Outlook**

Previously published here

Credit Market Strategist: Pivoting positively 15 December 2023

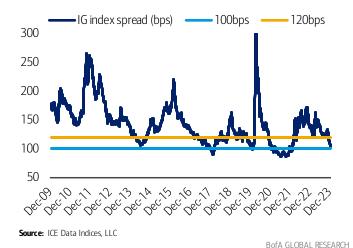
#### Pivoting positively

The dovish Fed pivot reduces some of the key risks for US IG spreads. The big decline in Treasury yields should also support financial issuer spreads by reducing the tail risk of "something breaking" on the back of the hiking cycle. Financials spreads also still have room to tighten, unlike most non-financials that are already near the historical tights (Exhibit 9). Given the recent reduction in risks and a stronger tailwind for financials we mark to market our expected range for IG spreads over the next six months to 100 - 120bps, compared to 104bps currently on the ICE BofA IG index (Exhibit 8). This implies we still see downside risks for IG spreads going forward.



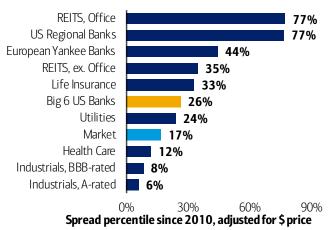
### Exhibit 8: We look for IG index to trade in 100 - 120bps range

That compares to 104bps currently on the ICE BofA US IG index.



#### Exhibit 9: Some IG sectors are reaching historical tights

Even after adjusting for the currently low bond dollar prices, single-A rated industrials are trading at 6th percentile since 2010.



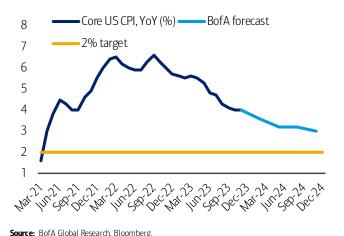
Source: BofA Global Research, ICE Data Indices, LLC

BofA GLOBAL RESEARCH

### The dovish pivot

At the December FOMC press conference chair Powell acknowledged that US inflation was largely driven by Covid supply and demand shocks rather than an overheating US economy (Exhibit 10). That suggests less pressure on the Fed to slow the US growth to fight inflation, increasing the chances of a softer landing. Such a more dovish Fed, therefore, is more likely to be more patient with some stickiness in inflation, as we saw in the November CPI report (see Situation Room: Nov CPI: high but in line), and more responsive to potential weakness in US data, which our economists forecast for 2024. Markets are now pricing about a 90% of a Fed cut in March (Exhibit 11).

#### Exhibit 10: US inflation has declined without slower US economy Core US PCI has declined to 4% YoY in November from the peak 6.6% YoY in September 2022.



BofA GLOBAL RESEARCH

Exhibit 11: Markets have almost fully priced in a March Fed cut Markets are currently pricing 20bps of Fed rate cuts by March 2024.



Source: BofA Global Research, Bloomberg.

BofA GLOBAL RESEARCH

#### Downside risks

On balance we continue to see downside risks to IG spreads from the current levels. Following the rapid rally over the prior two months valuations have turned into a bigger risk. Upside to credit valuations is now limited by the fact that some of the key sectors have already approached historically tight levels. At 65bps, single-A industrials are trading at 6th percentile since 2010, even after adjusting for the still low bond dollar prices. BBB industrials (121bps) are trading at 8<sup>th</sup> percentile (Exhibit 9).



Other important risks remain. Even after a dovish Fed pivot the US economy remains difficult to forecast. Given the soft-landing base case, surprises to either upside or downside could be negative for spreads. Interest rate implied volatility remains high, highlighting such growth risks. The recent drop in yields should be negative for demand, while encouraging opportunistic supply. Finally, the soft landing could encourage releveraging by IG issuers (see <a href="Situation Room: Soft landing = re-leveraging">Situation Room: Soft landing = re-leveraging</a>).

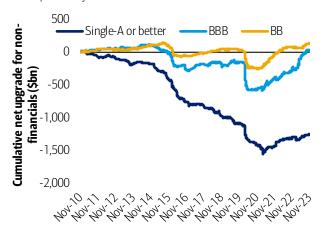
#### Upside risks

The key positive for IG credit is the combination of stronger balance sheets (Exhibit 12) at the end 2024, combined with the outlook for only a mild recession in the downside economic scenario (see <u>Credit Market Strategist: Nov '23 Credit Investor Survey: positioning for a mild recession</u>). Hence, risk of downgrades to HY should be low (see <u>Situation Room: Rising Stars > Fallen Angels</u>). That's the key reason why we expect only moderate spread widening in a downside scenario.

Equity implied volatility has reached the lowest levels since Covid, also suggesting limited risks to earnings (Exhibit 13). That has been supported by continued resilience in the US data, including retail sales (see <u>US Watch: November retail sales: shopping online and dining out</u>) and jobs (see <u>US Watch: November employment: On a glide path</u>). Finally, the strong bond returns in November and so far in December should attract stronger bond fund inflows in January.

**Exhibit 12: IG issuers have improved their balance sheets**Strong rating upgrades illustrate improvements in credit quality for IG issuers.

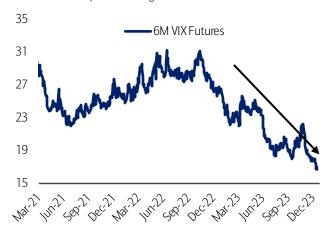
Strong rating upgrades illustrate improvements in credit quality for IG issues over the past two years.



Source: BofA Global Research

BofA GLOBAL RESEARCH

# **Exhibit 13: Equity volatility has reached post-Covid lows** 6M VIX futures have declined to 17 currently from the recent high of 22 in October 2023 and post-Covid highs of 31 in October 2022.



Source: Bloomberg.

BofA GLOBAL RESEARCH

### Supply

### January supply: tighter spreads, heavier supply

We look for January supply to come in a relatively busy \$150 - \$160bn range, as tighter spreads encourage more financial issuance. Currently the spread on the ICE BofA US IG Financial index is 115bps, down from 138bps average in January 2023 (Exhibit 19). That matters as financials accounted for 65% of January over the past three years (Exhibit 16). Moreover, the share of financial supply reached a high 69% in December, suggesting pent-up interest from financial issuers to come to the market at the current more attractive spreads. In contrast yields are unchanged relative to January of last year for the IG Industrial index (Exhibit 18). That implies no incremental support from valuations for non-financial supply.

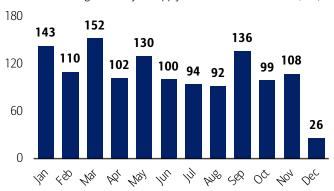


Our outlook implies a high net issuance in January. We estimate \$64bn of maturities in January. Adding to that the average LTM monthly call / tender volume of \$7bn implies net issuance of +\$84bn – up from +\$65bn net supply in January 2023.

### Exhibit 14: IG supply averaged \$33bn for the month of January

December tends to be the slowest month of the year for IG supply

■ Average monthly IG supply: 2017-2019, 2021-2023 (\$bn)

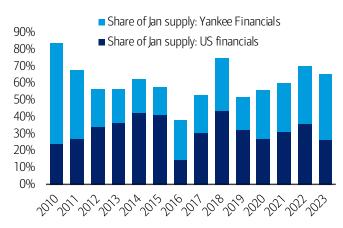


Source: BofA Global Research

BofA GLOBAL RESEARCH

## Exhibit 16: In 2021 – 2023 financials account for 65% of January supply

The share of January financial issuance was 66% in 2023 and 70% in 2022. Jan. issuance is about equally split between US and Yankee financials.

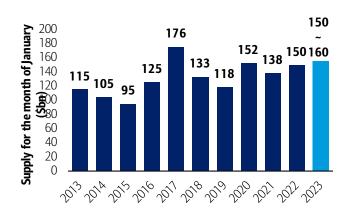


Source: BofA Global Research

BofA GLOBAL RESEARCH

#### Exhibit 15: We look for IG gross supply of \$35-45bn in Dec-2022.

 $$4035-$45 \mbox{bn}$  expected for Dec-2022 is down from  $$62 \mbox{bn}$  in Nov-2021 and similar to  $$42 \mbox{bn}$  in Nov-2020.

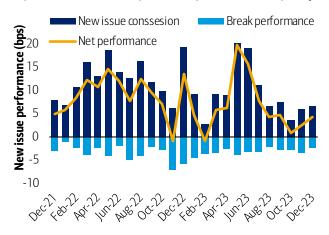


Source: BofA Global Research

BofA GLOBAL RESEARCH

#### Exhibit 17: New issue performance was strong in Oct – Dec 2023

IG new issue performance was relatively strong at 2.5bps in November and 4.2bps in December. That compares to 7.4bps median over the past 2yr.



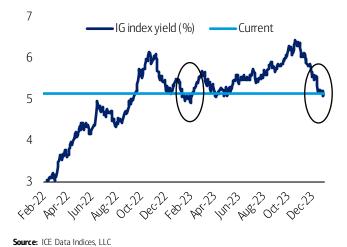
Note: IG new issue performance is new issue concessions less break performance.

Source: BofA Global Research



#### Exhibit 18: Yields are currently unchanged from Jan 2023

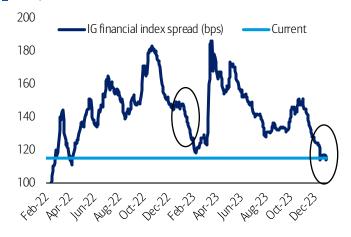
The US IG index yield averaged 5.14% in Jan 2023 – matching the yield as of Dec 29 2023.



BofA GLOBAL RESEARCH

#### Exhibit 19: Financial spreads are currently tighter than in Jan 2023

The US IG Financials index spread averaged 138bps in Jan 2023, wider than 115bps as of December 29.



Source: ICE Data Indices, LLC

BofA GLOBAL RESEARCH

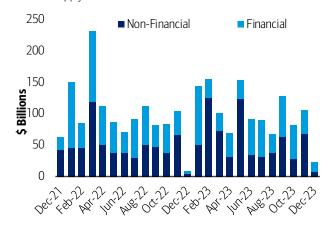
#### **December supply review**

IG gross supply totaled to 23.6bn in December down from 107.8bn in November. December supply consisted of \$7.4bn non-financials and \$16.2bn financials.

IG new issue performance weakened in December. The average new issue concession increased to 6.7bps from 6.0bps in November, while the average break performance tightened to 2.5bps from 3.5bps tighter. As a result, the overall performance of new issue performance, which we define as new issue concession plus break performance, widened to +4.2bps in December from 2.5bps in November (Exhibit 22).

#### Exhibit 20: Monthly US IG supply volume

December supply consisted of \$7.4bn non-financials and \$16.2bn financials.

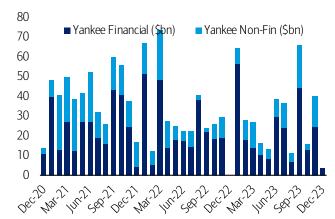


Source: Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

### Exhibit 21: US IG Yankee supply

US IG Yankee issuance = \$3.8bn in December

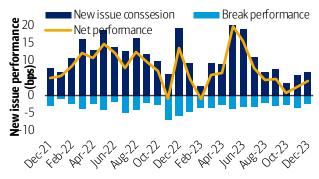


Source: Bloomberg, BofA Global Research



#### Exhibit 22: Monthly new issue supply performance

US IG new issue performance weakened in December.



Source: Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

### Exhibit 23: Monthly gross and 10-year equivalent supply volumes

10-year equivalent supply = \$14.3bn in January



Source: BofA Global Research, Bloomberg

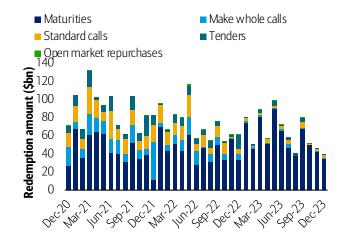
BofA GLOBAL RESEARCH

#### Redemptions

Redemptions totaled \$39.3bn in December, including \$34.6bn of contractual maturities and \$4.7bn of additional redemptions (Exhibit 24). Gross supply less all redemptions decreased to -\$15.7bn in December from +\$62.8bn in November (Exhibit 25).

#### Exhibit 24: US IG maturities and additional redemptions

US IG redemptions = \$39.3bn in December.



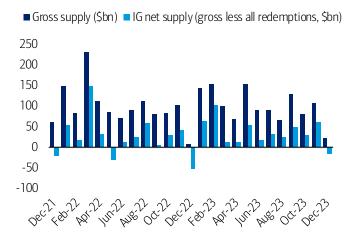
Note: Detailed redemption amounts data by type is grouped by effective dates.

 $\textbf{Source:} \ \ \mathsf{Bloomberg, ICE \ Data \ Indices, \ LLC, BofA \ Global \ Research}$ 

BofA GLOBAL RESEARCH

#### Exhibit 25: US IG gross and net supply

US IG gross supply = \$23.6bn and net supply = -\$15.7bn in December.



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

#### Exhibit 26: US IG gross supply and redemptions

Exhibit shows IG gross supply, maturities, additional redemptions and net supply by month

Month	Gross supply (\$bn)	Maturities	Make whole calls	Standard calls	Tenders	Open market repurchases	Total redemptions	IG net supply (gross less all redemptions, \$bn)	Coupons
Jan-18	133.3	72.4	4.1	5.3	6.9	0.0	88.7	44.6	24.4
Feb-18	98.4	46.4	2.0	5.8	4.1	0.0	58.2	40.1	22.0
Mar-18	125.2	65.6	15.4	4.2	14.1	1.6	100.8	24.4	28.4
Apr-18	124.3	74.3	20.0	1.7	1.7	0.0	97.7	26.5	22.7
May-18	127.6	80.6	3.5	18.3	3.1	0.0	105.5	22.1	24.9
Jun-18	120.4	43.9	10.9	9.3	5.7	1.8	71.6	48.8	22.5
Jul-18	67.3	47.9	6.3	5.9	0.2	0.2	60.5	6.8	24.4
Aug-18	91.8	36.3	2.9	2.8	1.3	0.3	43.6	48.2	22.0
Sep-18	146.2	29.0	6.0	4.1	8.9	1.8	49.7	96.4	28.4
Oct-18	96.2	29.7	7.4	4.0	3.8	0.4	45.4	50.7	22.7
Nov-18	97.4	52.6	6.8	1.4	3.9	0.2	64.8	32.5	24.9
Dec-18	9.1	31.2	16.9	3.5	12.8	0.8	65.1	-56.0	22.5
Jan-19	118.3	72.6	1.6	2.0	3.2	0.0	79.4	38.9	25.5

**Exhibit 26: US IG gross supply and redemptions**Exhibit shows IG gross supply, maturities, additional redemptions and net supply by month

EXHIBIT SI	nows 16 gro	oss suppiy, mat	turities, additi	onai redempt	ions and net	supply by month			
150-17	100.0	₩.1	<i>ي.</i> ح	7.7	د.اے	0.0	1 J.J	۷.٠	۷۷.٦
Mar-19	121.7	65.8	16.1	5.0	7.1	0.2	94.2	27.5	31.8
Apr-19	95.9	52.3	5.8	3.5	5.6	0.6	67.8	28.2	25.1
May-19	110.8	66.8	6.3	3.8	3.6	0.0	80.5	30.3	27.3
Jun-19	85.5	42.9	5.4	4.2	6.6	0.2	59.2	26.3	24.5
Jul-19	101.4	44.3	5.2	1.1	6.6	0.0	57.2	44.2	25.5
Aug-19	84.9	42.6	5.4	2.8	12.3	0.6	63.6	21.3	22.4
					14.2			52.7	
Sep-19	166.5	72.9	15.4	10.9		0.3	113.8		31.8
Oct-19	85.2	55.1	19.2	6.3	12.7	0.0	93.2	-8.0	25.1
Nov-19	104.2	39.2	8.5	9.1	7.6	0.4	64.9	39.3	27.3
Dec-19	24.0	26.6	18.0	26.6	11.2	0.0	82.4	-58.4	24.5
Jan-20	152.3	65.6	7.9	7.3	2.3	0.0	83.0	69.3	27.2
Feb-20	96.7	36.6	6.9	2.9	2.7	0.0	49.0	47.7	23.0
Mar-20	261.4	73.2	22.4	16.0	14.2	0.4	126.2	135.2	32.5
Apr-20	297.4	36.7	2.2	5.6	11.2	0.0	55.6	241.7	26.1
May-20	261.9	59.2	7.7	17.8	11.9	0.0	96.6	165.4	27.5
Jun-20	176.8	60.9	19.4	9.3	18.1	0.0	107.8	69.0	24.3
	68.9	46.9	14.3		9.2		81.9	-13.0	24.3
Jul-20				11.5		0.0			
Aug-20	143.5	35.3	11.1	9.4	14.7	0.6	71.2	72.3	21.3
Sep-20	168.4	45.7	19.9	18.3	25.1	0.0	109.1	59.4	31.4
Oct-20	87.0	65.9	14.6	18.8	11.0	0.1	110.4	-23.4	28.3
Nov-20	98.6	54.8	7.8	17.0	8.6	0.2	88.4	10.1	30.7
Dec-20	42.4	26.4	20.9	15.5	8.3	0.2	71.2	-28.8	26.8
Jan-21	137.9	67.2	7.5	18.1	12.1	0.0	104.8	33.1	24.6
Feb-21	119.9	35.3	9.4	11.2	11.0	0.0	67.0	52.9	21.2
Mar-21	202.5	60.7	23.1	30.1	17.0	0.0	130.9	71.6	31.7
Apr-21	124.3	63.9	16.1	19.4	3.5	0.0	102.8	21.5	27.8
May-21	136.7	61.8	14.2	10.5	7.7	0.0	94.3	42.5	30.3
Jun-21	139.1	40.9	15.9	30.7	16.6	0.0	104.2	34.9	26.2
Jul-21	90.7	39.6	15.4	12.3	4.8	0.0	72.1	18.6	25.0
Aug-21	88.3	31.0	9.1	16.3	5.5	0.0	61.9	26.5	20.6
Sep-21	160.4	52.1	19.8	15.9	16.1	0.0	103.9	56.6	30.2
Oct-21	120.4	33.8	10.1	10.6	8.7	0.0	63.3	57.0	27.8
Nov-21	112.6	38.1	6.9	14.3	22.8	0.0	82.2	30.3	30.3
Dec-21	62.4	10.7	42.0	19.1	11.3	0.0	83.2	-20.8	26.2
Jan-22	149.7	69.5	4.5	19.6	1.1	0.0	94.8	55.0	24.4
Feb-22	84.6	43.3	6.6	13.8	2.1	0.0	65.8	18.8	21.4
Mar-22	231.8	50.5	9.9	13.5	9.0	0.0	82.9	148.9	32.2
Apr-22	112.6	42.6	12.5	15.8	9.1	0.0	80.1	32.5	28.4
May-22	87.1	61.1	19.7	24.4	9.2	3.0	117.5	-30.4	29.6
Jun-22	70.6	28.1	14.6	7.7	5.9	0.0	56.3	14.2	24.3
Jul-22	90.9	45.9	2.1	12.9	5.3	0.0	66.2	24.7	24.4
Aug-22	112.6	30.6	9.2	6.9	7.1	0.6	54.5	58.1	21.4
Sep-22	81.4	49.1	9.9	11.5	5.9	0.0	76.4	5.0	32.2
Oct-22	83.2	33.3	6.4	11.8	1.4	0.2	53.1	30.1	28.4
Nov-22	103.9	56.6	1.0	1.3	2.0	0.3	61.2	42.6	29.6
Dec-22	8.1	33.3	6.1	5.5	15.5	0.1	60.5	-52.5	24.3
Jan-23	144.6	74.4	1.2	3.3	0.5	0.0	79.5	65.0	26.1
Feb-23	154.8	45.0	2.4	0.9	2.6	0.0	50.9	103.9	23.9
Mar-23	101.7	80.6	2.4	2.2	2.9	0.1	88.2	13.5	35.0
Apr-23	69.4	50.5	1.3	4.0	0.5	0.5	56.8	12.5	31.1
			0.9					55.5	29.6
May-23	153.9	89.8		2.4	5.3	0.0	98.3		
Jun-23	91.3	65.7	1.7	3.9	1.0	0.1	72.3	19.0	25.1
Jul-23	89.7	46.6	4.4	4.1	3.1	0.0	58.2	31.6	26.1
Aug-23	67.2	37.4	0.0	0.0	3.9	0.0	41.3	25.9	23.9
Sep-23	128.6	67.2	0.9	7.0	4.8	0.1	80.0	48.6	35.0
Oct-23	82.3	49.2	0.0	1.6	0.4	0.4	51.6	30.6	31.1
Nov-23	107.8	41.9	0.9	2.0	0.3	0.0	45.0	62.8	29.6
Dec-23	23.6	34.6	1.2	2.8	0.6	0.0	39.3	-15.7	25.1
	1 105 0	ta Indicas II C PofA			-		-		

**Source:** Bloomberg, ICE Data Indices, LLC, BofA Global Research



### **Quantitative Review**

#### Returns

Performance data include year-to-date sector returns, sector spreads, and a table summarizing a number of sector statistics such as size, performance and rating. At the issuer level, the top 25 names gained 99bps in terms of excess return in December while the bottom 25 large issuers lost 73bps in terms of excess return.

#### Ratings trends

Net upgrades (upgrades less downgrades, including Fallen Angels) for credits in ICE BofA US IG corporate index COAO declined to -\$.9bn (net downgrade) in December from +\$27.6bn in November. Net LTM upgrades moderated to +5.8% of index notional in December from +6.7% of index notional in November. At the sector level Healthcare and Metals & Mining contributed the most to the overall index negative rating actions in December (including watch (75% weight) and outlook (25% weight) changes), while Banks/Brokers, Technology and Pipelines contributed the most to positive rating actions.

#### Fund flows

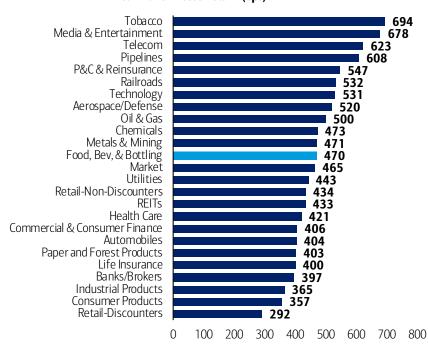
Net inflows to US IG bond funds and ETFs decreased to +0.50% of assets in December (based only on funds reporting daily) from +0.39% of assets in November (based on all funds).

### **Appendix: Performance Data**

#### Exhibit 27: High Grade YtD sector excess return

Year-to-date excess return for HG corporate market sectors, through December 31, 2023. Results include hybrid and subordinated securities.

#### Year 2023 Excess Return (bps)

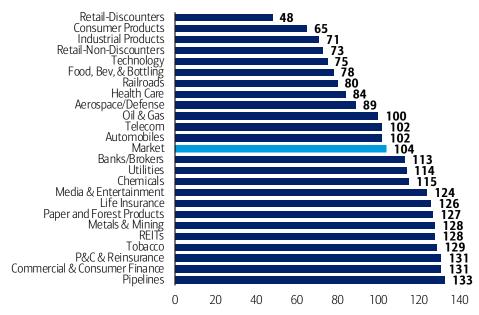


Source: ICE Data Indices, LLC



#### Exhibit 28: High grade spreads by sector (bps)

Sector spreads for BofA US IG Corporate Index COAO as of December 31 2023.



Note: Results include subordinated and hybrid securities.

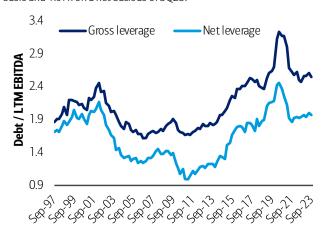
Source: ICE Data Indices, LLC

BofA GLOBAL RESEARCH

#### Leverage and coverage

#### Exhibit 29: Net and gross leverage: ex. Utilities

US IG industrial (ex. financial & utility) leverage ratio was 2.55x on a gross basis and 1.97x on a net basis as of 3Q23.



Note: Medians based on the US HG universe (ex. Fins and Utilities). Universe is rebalanced each quarter.

Source: Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

#### Exhibit 30: Coverage: ex. Utilities

US IG industrial (ex. financial & utility) coverage ratio was 10.6x as of 3Q23.



Note: Medians based on the US HG universe (ex. Fins and Utilities). Universe is rebalanced each quarter

Source: Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

Note: High grade market fundamental statistics are all median values for U.S. nonfinancial issuers in our benchmark USD high grade index COAO.



## High grade sector historical performance

Exhibit 31: High Grade Sector Performance as of December 31, 2023
Sector spreads and performance for BofA HG U.S. Corporate Master COAO. Results include subordinated and hybrid securities

						Face	% Mkt	Excess Return (bps)	Spread Change (bps)	Total Return						
Sector	Rating	ΩΔS	Duration	Vield	Price	(\$bn)	Value	MTD	OTD	YTD	VΩV	MTD	OTD	YTD	νον	OTD
Aerospace/Defense	BBB2	89	7.8	4.97	95.4	156.0	1.83	6	189	520	520	-3	-21	-38	-38	878
Automobiles	BBB1	102	3.9	5.12	96.9	241.7	2.89	58	149	404	404	-15	-10	-27	-27	557
Banks/Brokers	A2	113	4.6	5.34	95.3	1.921.6	22.59	54	177	397	397	-11	-26	-31	-31	636
Basic Materials	BBB2	121	7.1	5.26	94.7	338.5	3.95	53	189	482	482	-14	-27	-40	-40	825
Building Materials	BBB2	104	7.4	5.11	92.6	24.9	0.28	85	260	654	654	-12	-28	-55	-55	905
Chemicals	BBB2	115	7.4	5.22	92.9	125.3	1.43	33	177	473	473	-22	-34	-41	-41	827
Homebuilders	BBB2	114	4.7	5.14	94.6	15.2	0.18	87	214	592	592	-16	-25	-54	-54	694
Metals & Mining	BBB1	128	7.6	5.31	96.7	127.0	1.52	59	195	471	471	-8	-22	-40	-40	871
Paper and Forest Products	BBB2	127	5.5	5.34	95.0	46.1	0.54	64	154	403	403	-10	-22	-28	-28	684
Commercial Services	А3	89	8.5	4.93	90.4	114.4	1.27	40	136	531	531	-7	-16	-40	-40	861
Consumer Products	A2	65	6.6	4.67	94.7	78.9	0.92	25	101	357	357	-4	-13	-31	-31	703
Energy	BBB1	115	7.5	5.23	94.5	721.4	8.41	13	171	546	546	-3	-18	-37	-37	837
Oil & Gas	A3	100	7.7	5.07	93.2	409.0	4.70	9	152	500	500	-3	-17	-34	-34	837
Pipelines	BBB2	133	7.1	5.43	96.2	312.4	3.72	19	194	608	608	-4	-23	-45	-45	837
Finance	A3	114	5.3	5.24	93.9	441.3	5.10	51	170	426	426	-10	-23	-36	-36	679
Commercial & Consumer Finance	BBB1	131	3.9	5.42	96.1	160.4	1.90	82	179	406	406	-14	-25	-36	-36	592
Finance-Other Services	A3	103	6.1	5.13	92.6	280.9	3.20	32	164	437	437	-8	-22	-36	-36	728
Food, Bev, & Bottling	A3	78	7.8	4.83	93.8	318.3	3.68	13	149	470	470	-3	-16	-35	-35	844
Health Care	A3	84	8.5	4.91	92.5	837.9	9.54	-8	130	421	421	-1	-13	-27	-27	866
Industrial Products	A3	71	6.2	4.79	94.1	210.5	2.44	32	119	365	365	-4	-14	-26	-26	685
Insurance	A3	128	7.2	5.39	92.9	367.6	4.21	45	163	453	453	-4	-17	-27	-27	801
Insurance-Other	BBB1	121	8.3	5.23	92.8	37.0	0.42	13	174	527	527	19	-20	-34	-34	885
Life Insurance	A2	126	6.3	5.40	93.1	230.3	2.64	49	156	400	400	-7	-17	-26	-26	736
Multi-Line Insurance	BBB1	146	9.0	5.59	95.0	22.7	0.27	67	185	554	554	-9	-13	-18	-18	947
P&C & Reinsurance	A3	131	8.5	5.37	91.8	77.6	0.88	39	173	547	547	-4	-16	-30	-30	915
Leisure	BBB2	117	3.8	5.22	95.7	29.8	0.35	66	165	501	501	-14	-28	-76	-76	580
Media & Entertainment	BBB1	124	8.6	5.29	89.4	331.5	3.66	-9	254	678	678	1	-22	-46	-46	994
Media-Cable	BBB1	132	9.4	5.38	88.4	157.6	1.72	-28	225	622	622	1	-19	-36	-36	1,021
Media-Diversified	BBB1	116	8.0	5.22	90.4	173.8	1.94	9	280	728	728	-1	-26	-56	-56	970
Real Estate Dev & Mgt	A3	143	5.3	5.36	92.6 91.1	8.4	0.10	65 101	178 206	453 433	453	-13	-24 -29	-35	-35	707
REITs Retail	BBB1 A2	128 72	5.5 7.9	5.30 4.77	91.1	284.3	3.19 3.58	8	206 174	433	433	-19 -4	-29 -18	-40 -27	-40 -27	731 862
						315.7						-20		-27		
Food & Drug Retailers Retail-Discounters	BBB2 A1	114 48	7.7 7.5	5.20 4.54	89.9 95.5	23.2 55.3	0.26 0.65	-6	201 159	399 292	399 292	-20 -1	-30 -20	-27	-27 -20	876 821
Retail-Discounters Retail-Non-Discounters	A3	73	8.0	4.79	91.5	237.2	2.67	3	175	434	434	-1 -4	-16	-20	-20	870
	A2	75	7.7		91.5	555.7	6.27	-36	173	531		-4 1	-10	-39	-39	
Technology Telecom	BBB2	102	7.7 8.6	4.81 5.05	90.8	334.0	3.74	-36 29	326	623	531 623	-4	-32	-39 -47	-39 -47	852 1.065
Tobacco	BBB1	129	7.0	5.35	90.8	334.0 87.8	1.02	-39	217	694	694	-4 3	-32 -23	-47 -54	-47 -54	854
Transportation	BBB1	100	9.1	5.09	92.3	192.9	2.20	-39 47	156	503	503	-7	-23	-36	-36	921
Railroads	A3	80	11.2	4.88	92.3	192.9	1.24	47	186	532	532	-/ -4	-13	-31	-30	1.088
Transportation-Other	BBB2	125	6.5	5.35	95.0	81.8	0.96	54	121	463	463	-12	-14	-42	-31 -42	711
Utilities	A3	114	8.4	5.20	92.2	797.6	9.06	56	166	443	443	-12 -7	-16	-30	-30	894
Market	A3	104	6.8	5.14		8.685.8	100.00	31	175	443	465	- <i>7</i>	-10	-34	-34	791
WILLI NCC	7.5	104	0.0	J. 17	JJ. <del>T</del>	0,005.0	100.00	21	175	TU3	COF	,	۷1	7	JT	131

Source: ICE Data Indices, LLC BofA GLOBAL RESEARCH



#### Exhibit 32: Summary of fallen angels, December 2023

Number of IG issuers downgraded to HY in December 2023: 4.

Ticker	Rating	N Bonds	Par, \$mn	Avg. Price	Avg. Yield	Avg. OAS
BRASKM	BB1	6	5,923	80.75	9.72	577
VNO	BB1	3	1,200	88.99	6.84	251
WBA	BB1	7	4,403	85.58	5.93	181
Total		16	11,526	83.53	7.93	388

Source: BofA Global Research, ICE Data Indices, LLC

BofA GLOBAL RESEARCH

#### **Exhibit 33: Summary of rising stars, December 2023**

Number of HY issuers upgraded to IG in December 2023: 1.

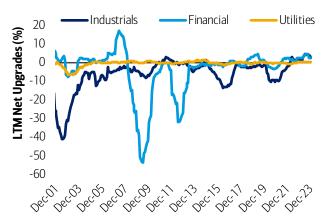
Ticker	Rating	N Bonds	Par, \$mn	Avg. Price	Avg. Yield	Avg. OAS
ICLR	BBB3	1	500	93.44	5.68	154
Total		1	500	93.44	5.68	154

Source: BofA Global Research, ICE Data Indices, LLC

BofA GLOBAL RESEARCH

## Exhibit 34: Net LTM upgrades and rising stars as percent of HG index notional.

LTM net downgrades as shares of index notional moderated across sectors in  $\mbox{\sc May}$ 



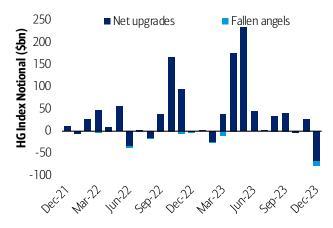
Note: Net upgrades equal to the total notional upgraded each month less the total notional that was downgraded. Rising stars are credit that migrated from HY Master (H0A0) to HG Master (C0A0) during the month.

Source: BofA Global Research, ICE Data Indices, LLC

BofA GLOBAL RESEARCH

#### Exhibit 35: HG Index upgrade and fallen angel volumes.

Net upgrades for credits in the US IG corporate Index totaled -\$78bn in Dec.



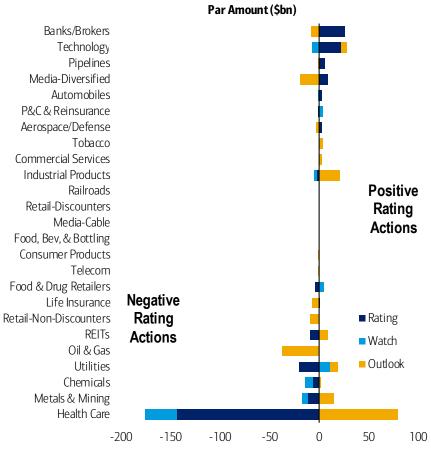
Note: Net upgrades equal to the total notional upgraded each month less the total notional that was downgraded. Fallen angels are credit that migrated from HG Master (COAO) to HY Master (HOAO) during the month.

Source: BofA Global Research, ICE Data Indices, LLC



#### Exhibit 36: December 2023 rating actions by sector, percent of HG index market value

Data include rating action by any of the three agencies (Moody's, S&P, Fitch).

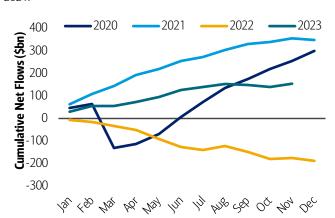


Source: BofA Global Research, ICE Data Indices, LLC

BofA GLOBAL RESEARCH

#### Exhibit 37: LTM mutual fund net flows in HG credit funds

Cumulative outflows YtD have been stronger than in 2022, but below than in 2021.

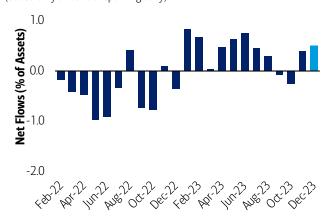


Note: Weekly-only mutual fund flows for the latest month, all-funds flows for earlier months. **Source:** BofA Global Research, EPFR

BofA GLOBAL RESEARCH

#### **Exhibit 38: Monthly HG fund and ETF flows**

Net inflows to US IG bond funds and ETFs = +0.50% of assets in December (based only on funds reporting daily)



Note: Weekly-only mutual fund flows for the latest month, all-funds flows for earlier months. **Source**: BofA Global Research, EPFR



**Exhibit 39: Monthly top and bottom performers**Top and bottom excess-return performers in BofA HG Master Index (COAO). Results include hybrids and subordinated securities

		Top 25 Credits						Bottom 25 Credits				
Rnk	Name	Ticker	<b>Excess Return</b>	OAS Chg	Weight	Rnk	Name	Ticker	<b>Excess Return</b>	OAS Chg	Weight	
1	Deutsche Bank AG	DB	181	-40	0.27	1	Microsoft Corporation	MSFT	-149	10	0.51	
2	Capital One Financial	COF	164	-37	0.33	2	Apple Inc.	AAPL	-133	9	0.94	
3	MidAmerican Energy Company	BRKHEC	138	-13	0.43	3	Bristol-Myers Squibb Company	BMY	-126	9	0.38	
4	Barclays PLC	BACR	133	-28	0.54	4	Altria Group	MO	-120	9	0.24	
5	Banco Santander SA	SANTAN	120	-26	0.34	5	Pfizer	PFE	-115	10	0.69	
6	Societe Generale	SOCGEN	114	-22	0.31	6	Johnson & Johnson	JNJ	-83	7	0.28	
7	Standard Chartered plc	STANLN	103	-12	0.31	7	Exxon Mobil Corp.	XOM	-82	5	0.31	
8	Lloyds Banking Group plc	LLOYDS	103	-20	0.29	8	Charter Communications Inc	CHTR	-79	5	0.47	
9	The Charles Schwab Corporation	SCHW	103	-22	0.25	9	Oracle Corp	ORCL	-79	5	0.85	
10	AerCap Holdings NV	AER	98	-19	0.29	10	Amazon.com Inc	AMZN	-76	6	0.65	
11	Truist Bank	TFC	94	-23	0.32	11	Berkshire Hathaway	BRK	-76	6	0.20	
12	PG&E Corp	PCG	91	-15	0.40	12	Shell International Finance BV	RDSALN	-68	5	0.32	
13	Ford	F	90	-23	0.51	13	AbbVie Inc.	ABBV	-67	3	0.53	
14	Enbridge Inc	ENBCN	87	-12	0.30	14	Enterprise Products Partners LP	EPD	-61	1	0.32	
15	US Bancorp	USB	85	-15	0.34	15	The Coca-Cola Company	KO	-59	2	0.21	
16	Saudi Arabian Oil Co	ARAMCO	85	-10	0.22	16	AMBEV	ABIBB	-59	4	0.61	
17	Natwest Group PLC	NWG	83	-18	0.21	17	Intel Corporation	INTC	-53	3	0.54	
18	BPCE SA	BPCEGP	81	-17	0.29	18	Walt Disney Co	DIS	-49	4	0.42	
19	Prudential Financial Inc	PRU	81	-11	0.25	19	Wal-Mart Stores	WMT	-35	3	0.38	
20	UBS AG	UBS	79	-17	0.78	20	BAT Capital Corp	BATSLN	-34	3	0.39	
21	PNC Financial Services Group	PNC	76	-15	0.33	21	IBM Corp	IBM	-33	1	0.35	
22	BNP Paribas	BNP	75	-13	0.36	22	Merck & Co., Inc.	MRK	-29	0	0.34	
23	Edison International	EIX	70	-11	0.30	23	Gilead Sciences, Inc.	GILD	-29	-1	0.25	
24	Macquarie Group Ltd.	MQGAU	69	-11	0.22	24	United Health Group	UNH	-27	1	0.68	
25	The Toronto-Dominion Bank	TD	66	-16	0.33	25	Amgen	AMGN	-24	0	0.68	
	Average (Market Weighted)		99	-19	8.52		Average (Market Weighted)		-73	5	11.53	

Source: BofA Global Research, ICE Data Indices, LLC



### **Disclosures**

### **Important Disclosures**

Due to the nature of strategic analysis, the issuers or securities recommended or discussed in this report are not continuously followed. Accordingly, investors must regard this report as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or securities.

BofA Global Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.

BofA Securities fixed income analysts regularly interact with sales and trading desk personnel in connection with their research, including to ascertain pricing and liquidity in the fixed income markets

### **Other Important Disclosures**

Prices are indicative and for information purposes only. Except as otherwise stated in the report, for any recommendation in relation to an equity security, the price referenced is the publicly traded price of the security as of close of business on the day prior to the date of the report or, if the report is published during intraday trading, the price referenced is indicative of the traded price as of the date and time of the report and in relation to a debt security (including equity preferred and CDS), prices are indicative as of the date and time of the report and are from various sources including BofA Securities trading desks.

The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

This report may refer to fixed income securities or other financial instruments that may not be offered or sold in one or more states or jurisdictions, or to certain categories of investors, including retail investors. Readers of this report are advised that any discussion, recommendation or other mention of such instruments is not a solicitation or offer to transact in such instruments. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor for information relating to such instruments. Rule 144A securities may be offered or sold only to persons in the U.S. who are Qualified Institutional Buyers within the meaning of Rule 144A under the Securities Act of 1933, as amended. SECURITIES OR OTHER FINANCIAL INSTRUMENTS DISCUSSED HEREIN MAY BE RATED BELOW INVESTMENT GRADE AND SHOULD THEREFORE ONLY BE CONSIDERED FOR INCLUSION IN ACCOUNTS QUALIFIED FOR SPECULATIVE INVESTMENT.

Recipients who are not institutional investors or market professionals should seek the advice of their independent financial advisor before considering information in this report in connection with any investment decision, or for a necessary explanation of its contents.

The securities or other financial instruments discussed in this report may be traded over-the-counter. Retail sales and/or distribution of this report may be made only in states where these instruments are exempt from registration or have been qualified for sale.

Officers of BofAS or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

This report, and the securities or other financial instruments discussed herein, may not be eligible for distribution or sale in all countries or to certain categories of investors, including retail investors.

Information relating to Affiliates of BofAS, MLPF&S and Distribution of Affiliate Research Reports:

Refer to BofA Global Research policies relating to conflicts of interest.

"BofA Securities" includes BofA Securities, Inc. ("BofAS") and its affiliates. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor if they have questions concerning this report or concerning the appropriateness of any investment idea described herein for such investor. "BofA Securities" is a global brand for BofA Global Research.

BofAS and/or Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") may in the future distribute, information of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers (AMF). BofA Securities Europe SA ("BofASE") with registered address at 51, rue La Boétie, 75008 Paris is registered under no 842 602 690 RCS Paris. In accordance with the provisions of French Code Monétaire et Financier (Monetary and Financial Code), BofASE is an établissement de crédit et d'investissement (credit and investment institution) that is authorised and supervised by the European Central Bank and the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers. BofASE's share capital can be found at www.bofaml.com/BofASEdisclaimer, BofA Europe (Milan): Bank of America Europe Designated Activity Company, Milan Branch, regulated by the Bank of Italy, the European Central Bank (ECB) and the Central Bank of Ireland (CBI); BofA Europe (Frankfurt): Bank of America Europe Designated Activity Company, Frankfurt Branch regulated by BaFin, the ECB and the CBI, BofA Europe (Madrid): Bank of America Europe Designated Activity Company, Sucursal en España, regulated by the Bank of Spain, the ECB and the CBI; Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited, regulated by the Australian Securities and Investments Commission; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSFC); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch (Canada): Merrill Lynch (Mexico): Merrill Ly de Bolsa, regulated by the Comisión Nacional Bancaría y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; BofAS Japan: BofA Securities Japan Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; BofAS India: BofA Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill Lynch Israel Limited, regulated by Israel Securities Authority; Merrill Lynch (DIFC): Merrill Lynch International (DIFC Branch), regulated by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Brazil): Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company:



Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.

This information: has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been approved for publication and is distributed in the European Economic Area (EEA) by BofASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has been considered and distributed in Japan by BofAS Japan, a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSFC; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Securities entity acting f

This information has been prepared and issued by BofAS and/or one or more of its non-US affiliates. The author(s) of this information may not be licensed to carry on regulated activities in your jurisdiction and, if not licensed, do not hold themselves out as being able to do so. BofAS and/or MLPF&S is the distributor of this information in the US and accepts full responsibility for information distributed to BofAS and/or MLPF&S clients in the US by its non-US affiliates. Any US person receiving this information and wishing to effect any transaction in any security discussed herein should do so through BofAS and/or MLPF&S and not such foreign affiliates. Hong Kong recipients of this information should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this information. Singapore recipients of this information should contact Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this information. For clients that are not accredited investors, expert investors or institutional investors Merrill Lynch (Singapore) Pte Ltd accepts full responsibility for the contents of this information distributed to such clients in Singapore.

#### General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Securities. This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Securities clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute, investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

Securities and other financial instruments referred to herein, or recommended, offered or sold by BofA Securities, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. Digital assets are extremely speculative, volatile and are largely unregulated. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

BofA Securities is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

This report may contain a trading idea or recommendation which highlights a specific identified near-term catalyst or event impacting a security, issuer, industry sector or the market generally that presents a transaction opportunity, but does not have any impact on the analyst's particular "Overweight" or "Underweight" rating (which is based on a three month trade horizon). Trading ideas and recommendations may differ directionally from the analyst's rating on a security or issuer because they reflect the impact of a near-term catalyst or event.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned in this report. Investors in such securities and instruments effectively assume currency risk

BofAS or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. BofAS or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Securities, through business units other than BofA Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented herein. Such ideas or recommendations may reflect different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Securities is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this information. In the event that the recipient received this information pursuant to a contract between the recipient and BofAS for the provision of research services for a separate fee, and in connection therewith BofAS may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom BofAS has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by BofAS). If such recipient uses the services of BofAS in connection with the sale or purchase of a security referred to herein, BofAS may act as principal for its own account or as agent for another person. BofAS is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities referred to herein.

#### Copyright and General Information:

Copyright 2024 Bank of America Corporation. All rights reserved. iQdatabase® is a registered service mark of Bank of America Corporation. This information is prepared for the use of BofA Securities clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Securities. BofA Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Securities and is not publicly-available material. Any unauthorized use or disclosure is prohibited. Receipt and review of this information constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained herein (including any investment recommendations, estimates or price targets) without first obtaining express permission from an authorized officer of BofA Securities. Materials prepared by BofA Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Securities, including investment banking personnel. BofA Securities has established information barriers between BofA Global Research and certain business groups. As a result, BofA Securities does not disclose certain client relationships with, or compensation received from, such issuers. To the extent this material discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this material. BofA Global Research personnel's knowledge of legal proceedings in which any BofA Securities entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this material is based on public inform

This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing

such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Securities and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This information may contain links to third-party websites. BofA Securities is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this information and is not incorporated by reference. The inclusion of a link does not imply any endorsement by or any affiliation with BofA Securities. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Securities is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

All opinions, projections and estimates constitute the judgment of the author as of the date of publication and are subject to change without notice. Prices also are subject to change without notice. BofA Securities is under no obligation to update this information and BofA Securities ability to publish information on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Securities will not update any fact, circumstance or opinion contained herein.

Certain outstanding reports or investment opinions relating to securities, financial instruments and/or issuers may no longer be current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with BofAS or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies. Neither BofA Securities nor any officer or employee of BofA Securities accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this information.

