Accessible version
BofA GLOBAL RESEARCH
BofA SECURITIES

Systematic Flows Monitor

CTAs could have more USD to buy; systematic equity leverage stretched

Model CTA shows equity longs remain stretched

CTAs are likely benefiting from their long equity positions in the S&P 500 and NASDAQ-100 which according to our model were put on in size in early December. Both indices closed the week at new all-time highs implying that CTA positions are at or near high-water marks leaving the move required for a stop-loss unwind relatively farther. Similarly, in Japan our model shows CTA longs in the Nikkei 225 are also stretched. In Europe, however, CTA longs in the EURO STOXX 50 are closer to median levels. Next week we see a dislocation between EURO STOXX 50 longs which look to grow versus EURO STOXX Banks (SX7E) longs which look to come off.

Rally in USD could still have legs as CTAs continue buying

The US dollar strengthened this week on the back of the blowout January employment report, and our CTA model had trend followers unwinding long EUR, AUD, MXN, and CAD positions through the week. Next week USD buying could continue even more as CTAs could turn short EUR, AUD, and CAD. Our model also indicates that CTAs put on a JPY short that also could continue growing next week. Lastly, our model forecasts that the GBP long, which to date remained most intact, could decline meaningfully next week.

CTA bond positions likely not too large

The 10yr US Treasury future (TY) rallied strongly through the first four days of the week but then saw a large decline Friday. However, CTAs, according to our model, were likely not too long TY futures and correspondingly the moves could have had less impact on their portfolios. Trend strength in US bond futures remains near flat which should keep positioning at lower levels in the near-term.

Soybean complex remains stretched short

Trend follower commodity positions are skewed short with positions in Soybeans, Soybean Oil, and Soybean Meal quite stretched. Next week Copper (LP) could see some larger short covering. Oil is short, Gold is long but both positions are not large.

S&P vol control strategies could be forced to unwind

S&P 500 realized vol touched its lowest levels since Nov-21 before notching three straight days of greater than one percent moves. Realized vol correspondingly moved higher and leverage in S&P 500 vol control strategies could be forced to unwind. Strategies could have been selling into this past Friday's close and as well may need to unwind more on Monday next week.

02 February 2024

Equity Derivatives
Global

BofA
Data Analytics

Table of Contents

Trend Following (CTA) Model	2
Risk Parity Model	9
S&P 500 Equity Vol Control	9
Appendix	18
Research Analysts	25

Global Equity Derivatives Rsch
BofAS

Chintan Kotecha
Equity-Linked Analyst
BofAS
+1 646 855 5478
chintan.kotecha@bofa.com

Nicholas Dunne
Equity-Linked Analyst
BofAS
+1 646 855 2631
nicholas.dunne@bofa.com

Benjamin Bowler
Equity-Linked Analyst
BofAS
benjamin.bowler@bofa.com

Nitin Saksena
Equity-Linked Analyst
BofAS
nitin.saksena@bofa.com

Abhinandan Deb >>
Equity-Linked Analyst
MLI (UK)
abhinandan.deb@bofa.com

Lars Naeckter >>
Equity-Linked Analyst
Merrill Lynch (DIFC)
lars.naeckter@bofa.com

See Team Page for List of Analysts

Trend Following (CTA) Model

For each component we apply our CTA model over the next five trading sessions under bullish, neutral, and bearish price paths. Exhibit 1 summarizes our model applied to 13 common CTA underlyings within equities, fixed income, commodities and FX.

To illustrate how to interpret Exhibit 1, using the first row as an example, the takeaways are: (1) Our CTA model's S&P 500 position is long, (2) The current trend signal is 76% where -100% is max short and +100% is max long, (3) Over the next 5 trading sessions and based on price paths using historical data, the trend signal is not projected to see large moves, and (4) a full unwind (sell trigger) of the long position could come with a 3.9% decline (4767 index level).

Exhibit 1: Summary of BofA Trend Following (CTA) Model Positions, Projections, and Key Levels

An important consideration with buy & sell triggers is they are hard to model as they can vary based on trend-following model construction. Our analysis supports the idea that the further we get from our model's trigger, it's increasingly likely more (and eventually most) CTAs will have executed their position. *Please see the appendix for details on how we determine trend strength, bearish/median/bullish price projections, and buy & sell triggers.*

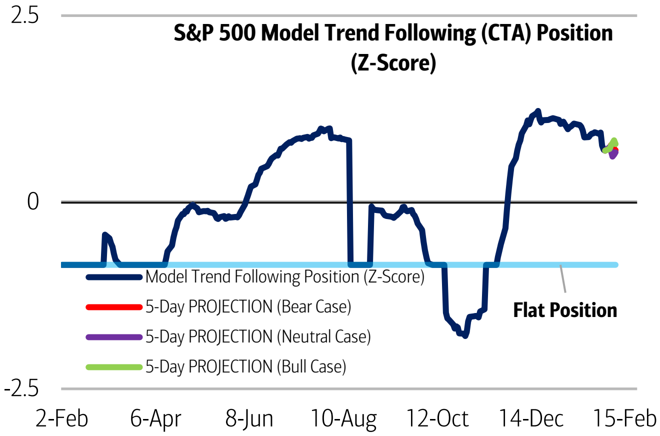
				5-day Trend Projection							
Asset Class	Underlying	Model CTA Position	Trend Strength	Bearish	Median	Bullish	Current Spot	Sell Trigger	%-age	Buy Trigger	%-age
Equities	S&P 500	Long	76%	75%	77%	80%	4959	4767	-3.9%	--	--
	NASDAQ-100	Long	75%	74%	81%	81%	17643	--	--	--	--
	Russell 2000	Long	42%	12%	39%	39%	1963	--	--	--	--
	SX5E	Long	55%	57%	63%	66%	4655	4425	-4.9%	--	--
	SX7E	Long	56%	41%	49%	52%	119	114	-4.8%	--	--
	NIKKEI 225	Long	94%	90%	99%	100%	36158	34860	-3.6%	--	--
Bonds	10yr Tsy Futures (TY)	Long	9%	-2%	5%	10%	111.70	--	--	--	--
	Bund Futures (RX)	Long	36%	16%	31%	35%	135.09	129.82	-3.9%	--	--
	Korea Treasury Bond (KAA)	Long	60%	50%	54%	56%	114.32	112.60	-1.5%	--	--
Commodities	Gold	Long	15%	-4%	16%	21%	2053.7	--	--	--	--
	Oil	Short	-15%	-21%	-12%	1%	72.1	--	--	--	--
	Aluminum	Short	-32%	-49%	-37%	-28%	2217.5	--	--	--	--
	Copper (BCOM, HG)	Short	-12%	-21%	-10%	-5%	382.0	--	--	--	--
	Copper (GSCI, LP)	Short	-21%	-20%	-6%	2%	8451.0	--	--	8819	4.4%
	Soybeans	Short	-93%	-95%	-91%	-88%	1188.0	--	--	1244	4.7%
	Soybean Oil	Short	-73%	-76%	-77%	-67%	44.7	--	--	--	--
	Soybean Meal	Short	-87%	-77%	-84%	-79%	356.9	--	--	374	4.7%
FX	EUR/USD	Long	14%	-16%	-8%	11%	1.0793	1.0460	-3.1%	--	--
	GBP/USD	Long	51%	29%	40%	46%	1.2638	1.2411	-1.8%	--	--
	AUD/USD	Long	3%	-36%	-17%	-9%	0.6515	--	--	--	--
	USD/JPY	Long	52%	46%	68%	63%	148.3	140.9	-5.0%	--	--
	USD/MXN	Short	-36%	-30%	-21%	-7%	17.1217	--	--	17.6872	3.3%
	USD/CAD	Short	-12%	-9%	2%	17%	1.3459	--	--	--	--

Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Equities

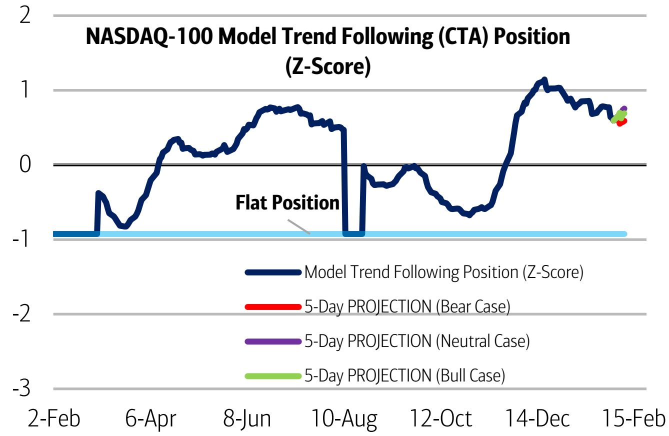
Exhibit 2: BofA Model Trend Following (CTA) S&P 500 Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios



Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

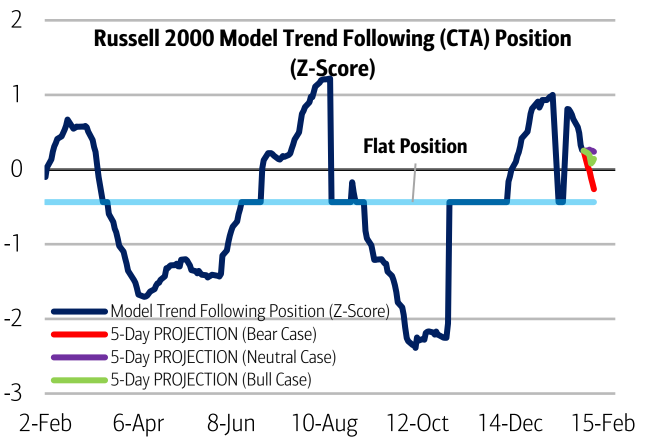
Exhibit 3: BofA Model Trend Following (CTA) NASDAQ-100 Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios



Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

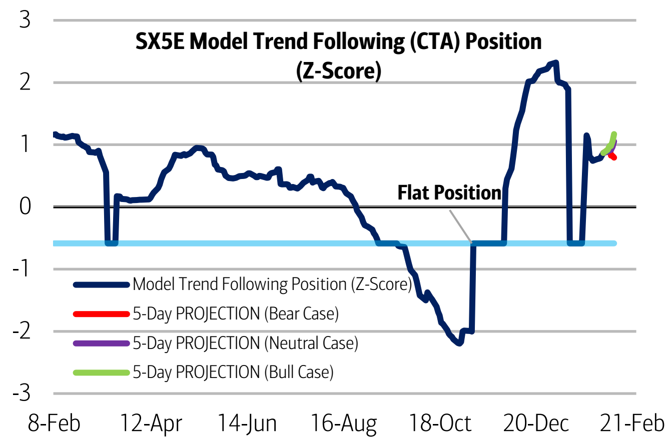
Exhibit 4: BofA Model Trend Following (CTA) Russell 2000 Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios



Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Exhibit 5: BofA Model Trend Following (CTA) ESTX50 Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios



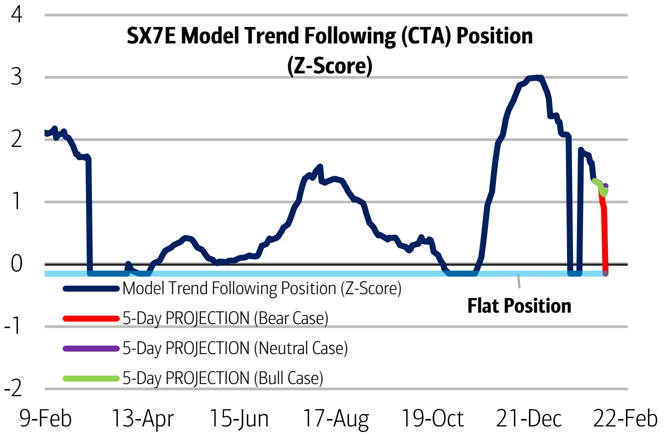
Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Equities (continued)

Exhibit 6: BofA Model CTA EURO STOXX Banks Position

Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios

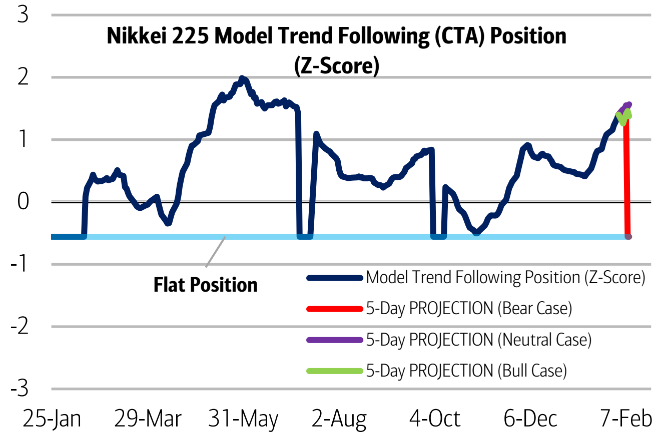


Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Exhibit 7: BofA Model Trend Following (CTA) NIKKEI 225 Position

Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios



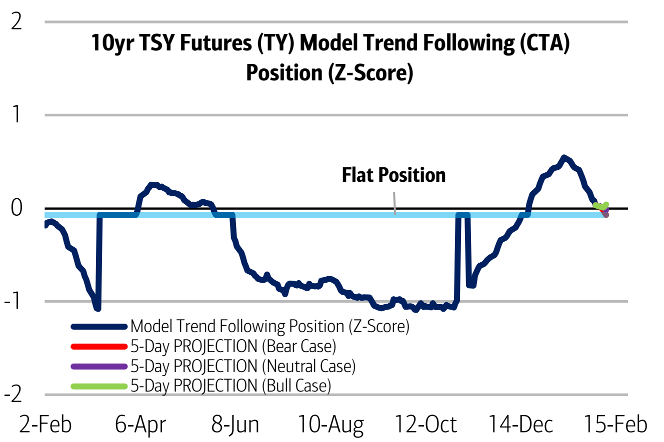
Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Fixed Income

Exhibit 8: BofA Model Trend Following (CTA) TY Futures Position

Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios

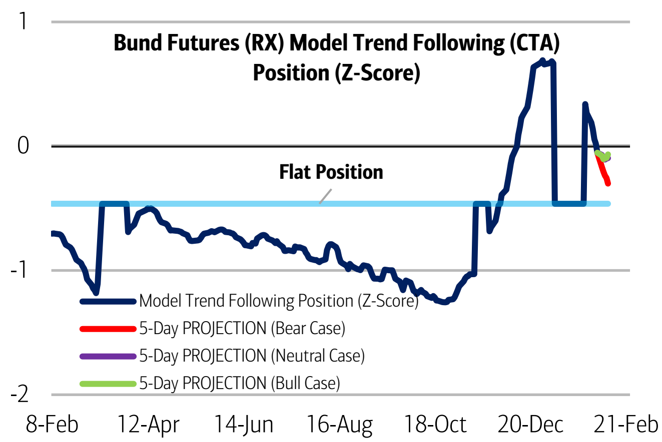


Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Exhibit 9: BofA Model Trend Following (CTA) Bund Position

Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios

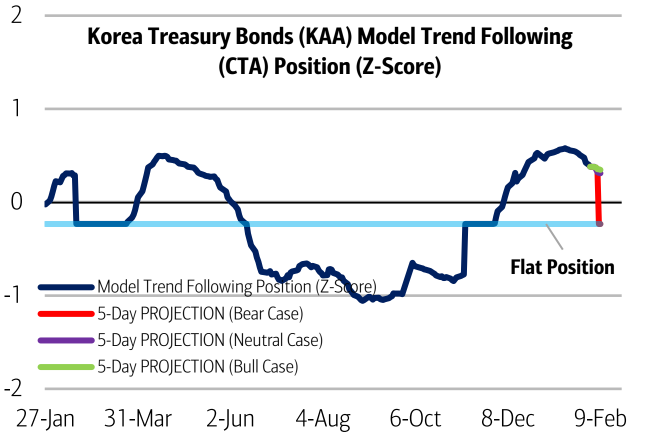


Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Fixed Income (continued)

Exhibit 10: BofA Model Trend Following (CTA) KTB Futures Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios

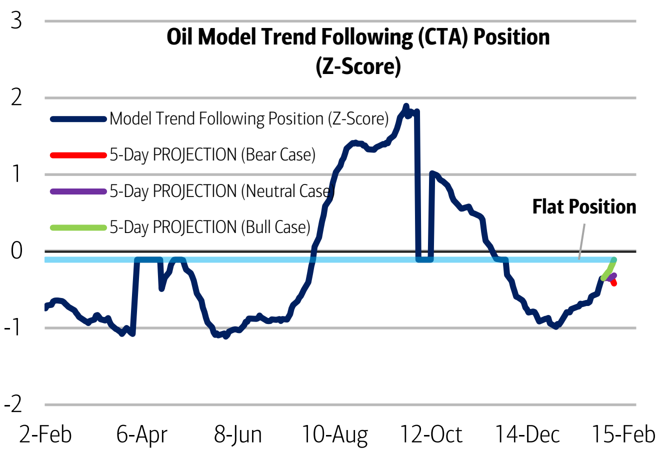


Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Commodities

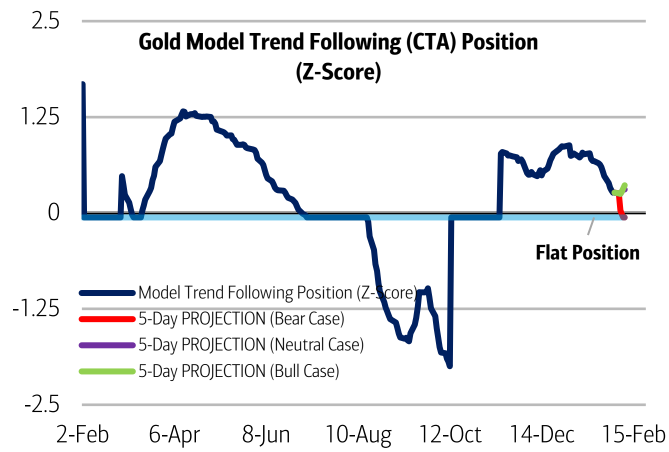
Exhibit 11: BofA Model Trend Following (CTA) Oil Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios



Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Exhibit 12: BofA Model Trend Following (CTA) Gold Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios

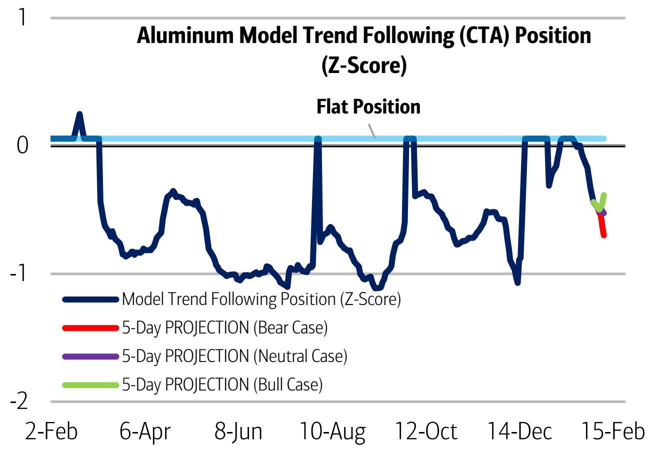


Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Commodities (continued)

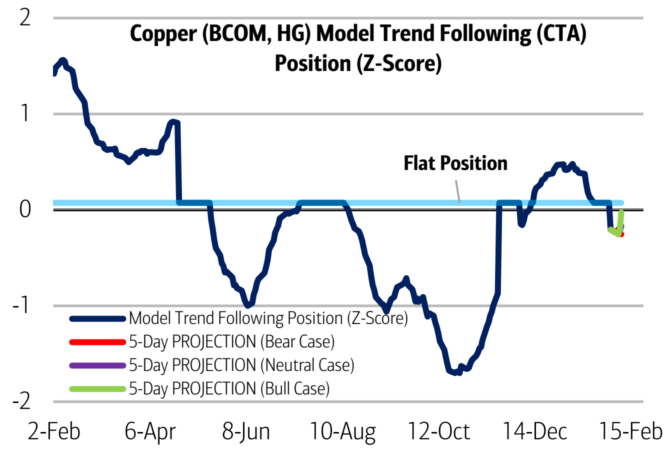
Exhibit 13: BofA Model Trend Following (CTA) Aluminum Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios



Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

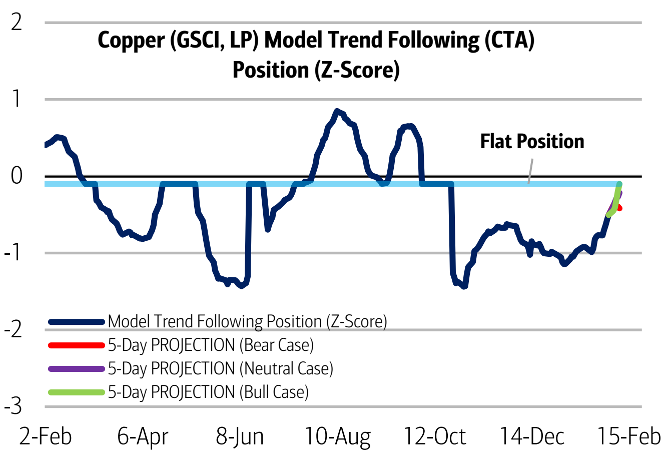
Exhibit 14: BofA Model Trend Following (CTA) Copper (HG) Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios



Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

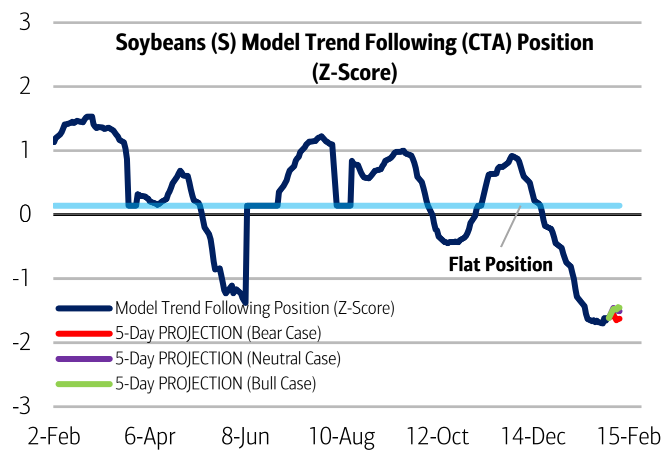
Exhibit 15: BofA Model Trend Following (CTA) Copper (LP) Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios



Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Exhibit 16: BofA Model Trend Following (CTA) Soybean (S) Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios

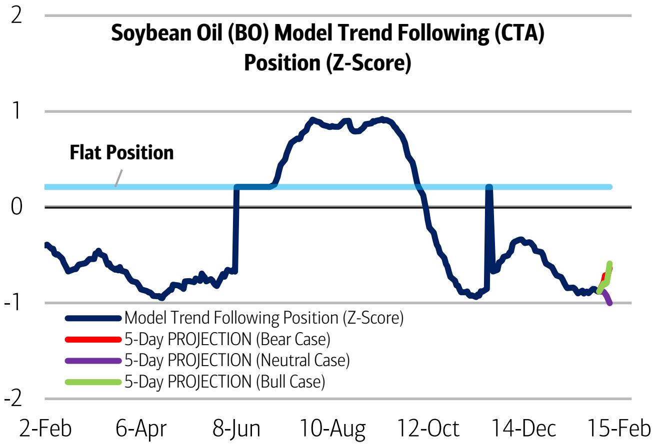


Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Commodities (continued)

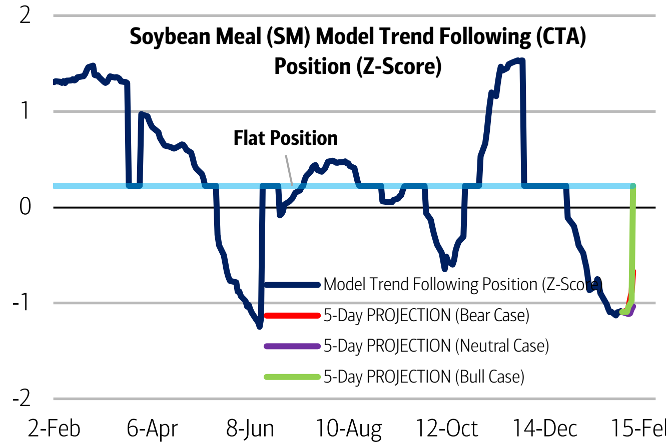
Exhibit 17: BofA Model Trend Following (CTA) Soybean Oil Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios



Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Exhibit 18: BofA Model Trend Following (CTA) Soybean Meal Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios

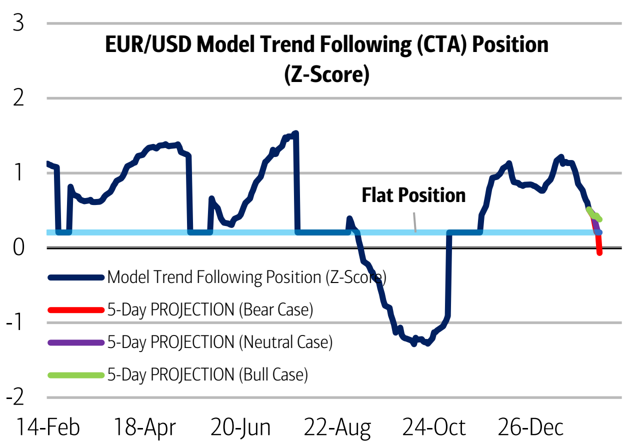


Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Foreign Exchange (FX)

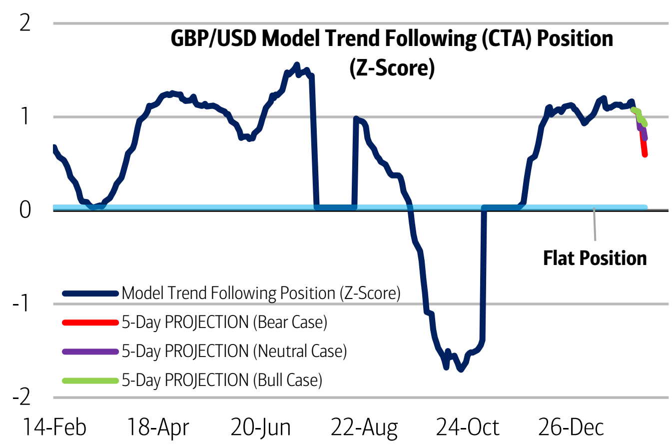
Exhibit 19: BofA Model Trend Following (CTA) EUR/USD Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios



Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Exhibit 20: BofA Model Trend Following (CTA) GBP/USD Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios

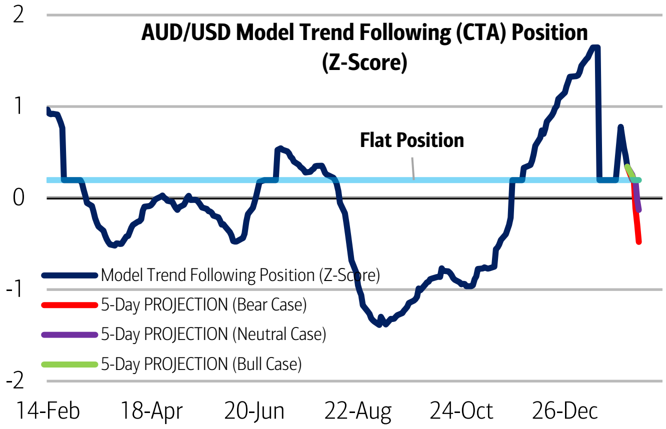


Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

FX (continued)

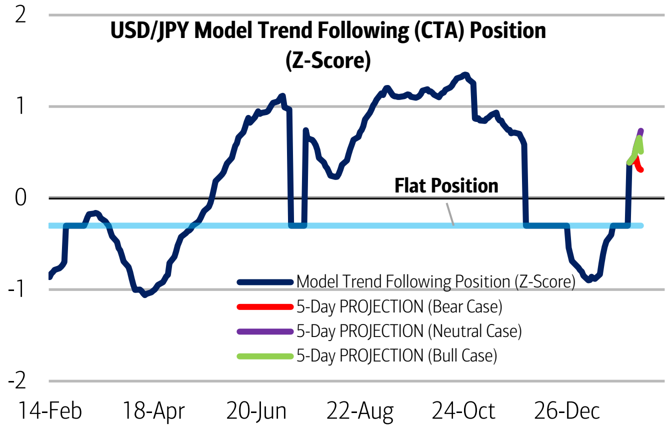
Exhibit 21: BofA Model Trend Following (CTA) AUD/USD Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios



Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

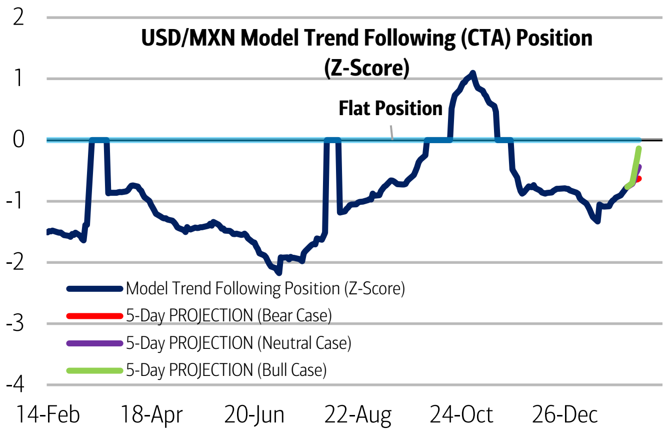
Exhibit 22: BofA Model Trend Following (CTA) USD/JPY Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios



Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

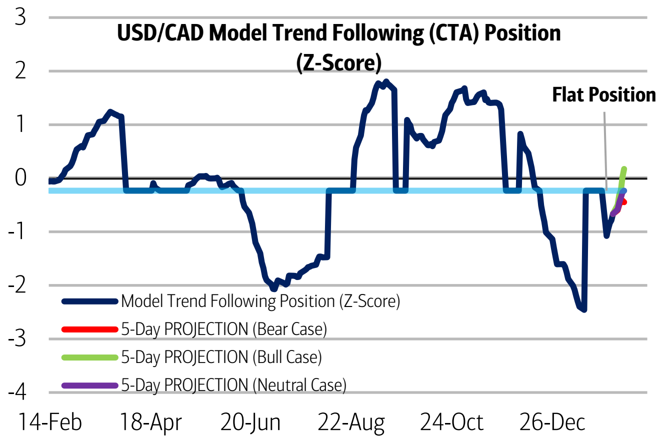
Exhibit 23: BofA Model Trend Following (CTA) MXN/USD Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios



Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Exhibit 24: BofA Model Trend Following (CTA) CAD/USD Position
Z-score of position shown below along with projection of how the position could evolve over the next 5 trading sessions based on bullish, neutral, and bearish scenarios

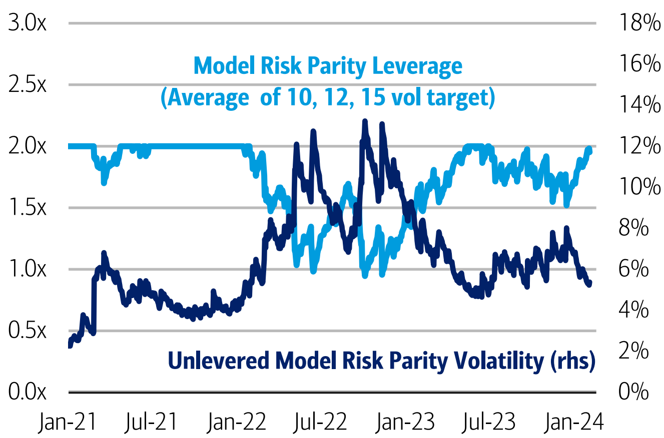


Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Risk Parity Model

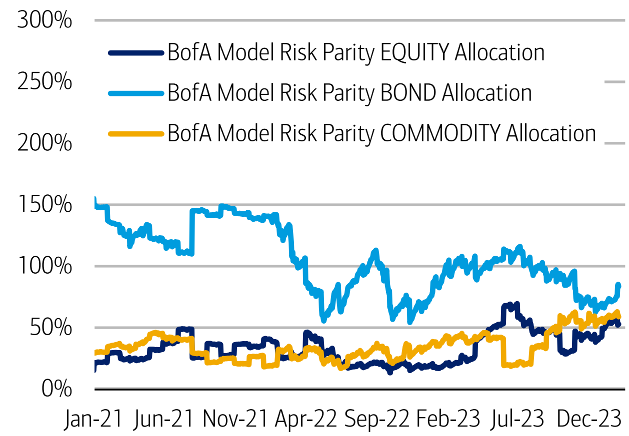
Exhibit 25: BofA Model Risk Parity Realized Volatility & Leverage
Our model risk parity leverage is a function of the prevailing volatility and below we show the average for three popular risk targets



Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Exhibit 26: BofA Model Risk Parity Asset Class Allocations
Allocations are inversely proportional to an asset's volatility, that is, lower volatility assets have higher allocation

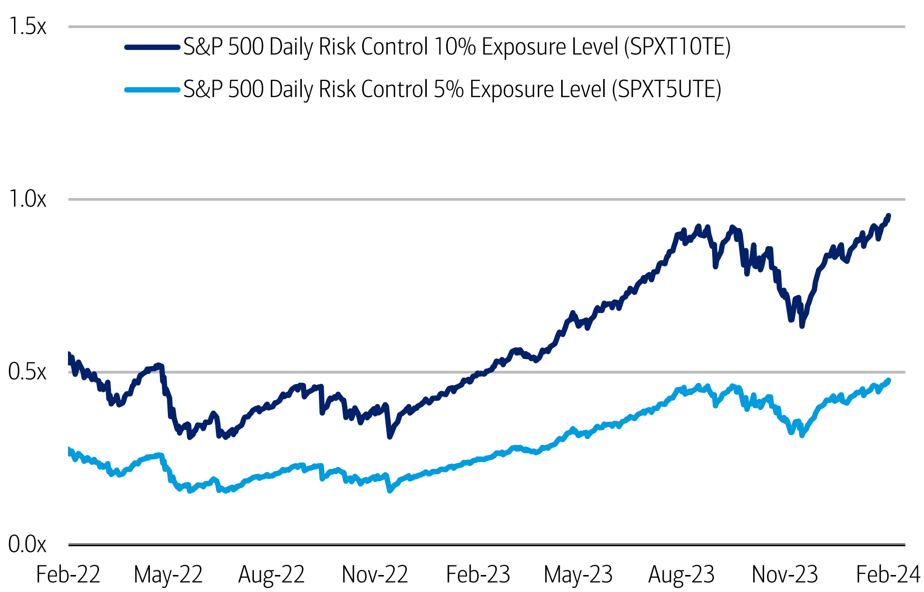


Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

S&P 500 Equity Vol Control

Exhibit 27: S&P 500 Daily Risk Control (10% and 5%) Exposure Level
To model equity vol control, we show the exposure for the S&P Daily Risk Control Index (both 10% and 5%)



Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Recent price action around CTA model trigger points

Exhibit 28: Ultra Long Term Tsy Futures (WN) trigger on 18-Jan-2024
WN futures featured in our daily update, please email us to be subscribed

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 29: RTY stop loss triggered week of 19-Jan-24
Increased selling at our model's trigger point

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 30: KOSPI2 stop loss triggered week of 19-Jan-24
KOSPI2 is featured in our daily update, please email us to be subscribed

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 31: CHF/USD stop loss triggered week of 19-Jan-24
CHF is included in our daily update, please email us to be subscribed

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

CTA model trigger points (continued)

Exhibit 32: AUD/USD stop loss triggered week of 19-Jan-24
Increased selling at our model's trigger point

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 33: EURO STOXX 50 trigger in week ending 10-Nov-2023
Accelerated covering through our model's trigger

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 34: Russell 2000 trigger in week ending 3-Nov-2023
Accelerated covering through our model's trigger

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 35: EUR/USD stop loss triggered week ending 3-Nov-2023
Accelerated covering through our model's trigger

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

CTA model trigger points (continued)

Exhibit 36: 10yr Tsy Futures (TY) trigger in week ending 3-Nov-2023
Accelerated covering through our model's trigger

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 37: Ultra Long Term Tsy Futures (WN) trigger on 3-Nov-2023
WN futures featured in our daily update, please email us to be subscribed

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 38: Soybean Meal trigger in week ending 27-Oct-2023
Accelerated covering through our model's trigger

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 39: Gold stop loss triggered week ending 13-Oct-2023
Accelerated covering through our model's trigger

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

CTA model trigger points (continued)

Exhibit 40: Oil stop loss triggered week ending 6-Oct-2023
Increased selling at our model's trigger point

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 41: Nikkei stop loss triggered week ending 6-Oct-2023
Increased selling at our model's trigger point

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 42: CAD/USD stop loss triggered week ending 22-Sep-2023
Acceleration upward post our model's buy to cover trigger

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

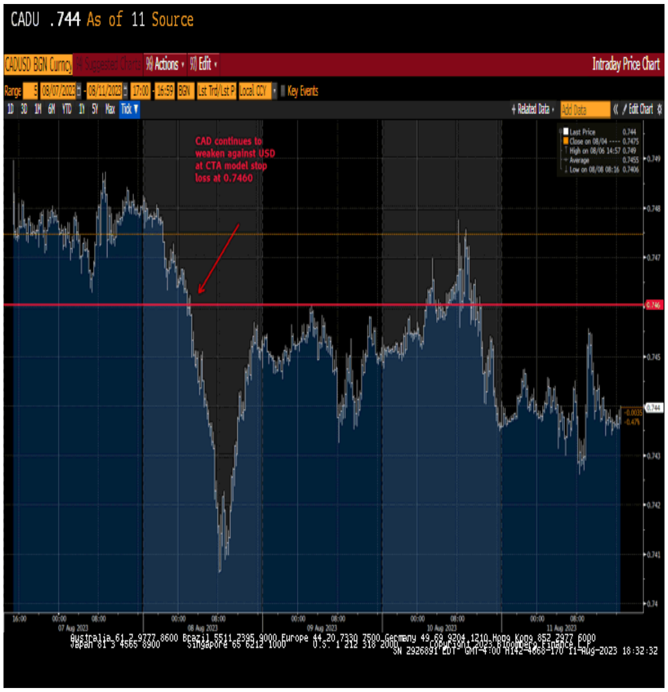
Exhibit 43: SPX stop loss triggered week ending 18-Aug-22
Persistent downside following a sell trigger on 15-Aug consistent with CTAs fully exiting a stretched long SPX position

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

CTA model trigger points (continued)

Exhibit 44: CAD/USD stop loss triggered week ending 11-Aug-23
Increased selling at our model's trigger point



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 45: MXN/USD stop loss triggered week ending 4-Aug-23
Increased selling at our model's trigger point

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 46: MXN/USD stop loss triggered week of 17-Mar-23
Accelerated selling through our model's trigger

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

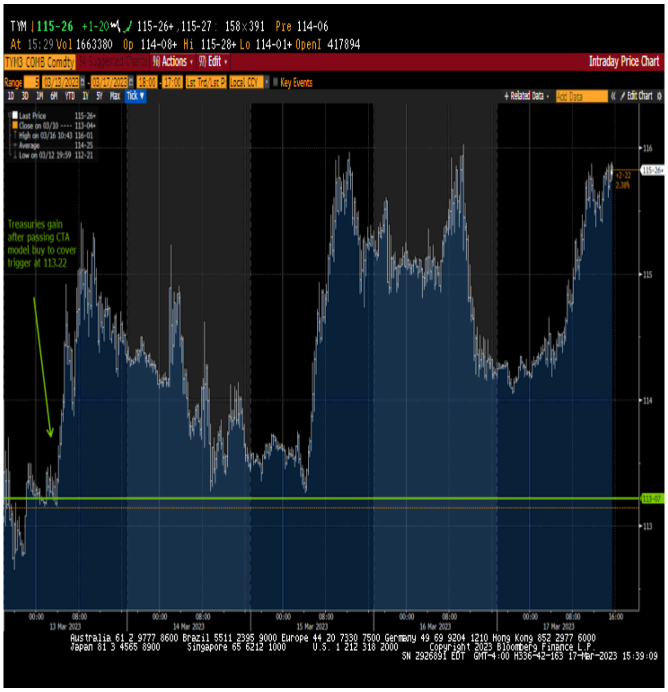
Exhibit 47: RX stop loss triggered week of 17-Mar-23
Accelerated covering through our model's trigger

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

CTA model trigger points (continued)

Exhibit 48: TY stop loss triggered week of 17-Mar-23
Accelerated upside through our model's trigger



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 49: SX5E stop loss triggered week of 17-Mar-23
After testing, SX5E accelerated declines through model trigger

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 50: Russell 2000 stop loss triggered week of 10-Mar-23
Our model's stop loss coincided with a significant drop in RTY

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 51: AUD/USD stop loss triggered week of 24-Feb-23
Ceiling at our model's exit level and as well further downside

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

CTA model trigger points (continued)

Exhibit 52: JPY/USD stop loss triggered week of 24-Feb-23
Acceleration in downside post our model's trigger

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 53: EUR/USD stop loss triggered week of 24-Feb-23
EUR/USD saw a ceiling post our sell trigger and as well continued downside

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 54: TY futures expected to see large shorts week of 24-Feb-23
Persistent downside post a sell trigger early in the week

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 55: KTB futures stop loss triggered week of 17-Feb-23
Downside continued through our model's long unwind trigger

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

CTA model trigger points (continued)

Exhibit 56: MXN/USD stop loss triggered week of 10-Feb-23
While the move did accelerate around our model stop loss, Mexican central bank actions later in the week propelled the peso higher

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 57: RTY outperformance vs SPX week of 3-Feb-23
In the week prior our model forecasted outsized buying pressure in the Russell 2000 relative to the S&P 500

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 58: Nikkei-225 stop loss triggered week of 23-Jan-23
After hitting our CTA model's stop loss, the index showed support for the remainder of the week

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 59: NASDAQ-100 stop loss triggered on 27-Jan-23
The index saw upward price action which is consistent with CTA short covering

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Appendix

Background on trend following strategies (CTAs)

Trend following strategies have their roots in the commodity asset class as some of the earliest known applications were applied to futures within that asset class. Correspondingly, these trend following strategies were referred to as CTAs which is short for Commodity Trading Advisor. Today, however, global futures markets also comprise stock index, interest rate, currency, and commodity futures. To leverage the benefits of diversification that exists across these asset classes, trend following strategies have broadened their investment universe but are often still referred to as CTAs. Assets in trend following strategies are tracked in a database maintained by BarclayHedge and ***as of 2023-Q3 stood at $357.6bn***.

CTAs can be trend followers but also can be fundamental discretionary

CTA managers often implement rules-based systematic trend following strategies but also can make investment decisions based on fundamental analysis and market views. Those that are systematic could be allocating to futures across multiple asset classes as a function of both trend and volatility. Discretionary CTAs, on the other hand, may also allocate in some part or fully based on fundamentals and economic factors. This class of CTAs may become more concentrated in a given asset class based on outlook and may not be as broadly allocated across markets at any given period.

Benchmark CTA explained by x-asset, risk controlled, trend following

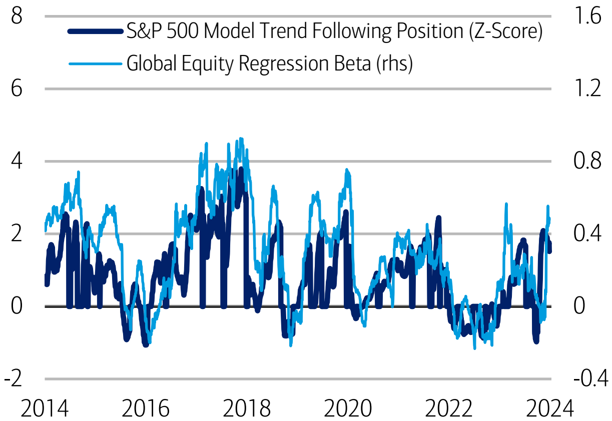
Despite the inclusion of fundamental, discretionary trading strategies and/or a focus on a subset of asset classes, our analysis suggests CTA performance can largely be explained by:

1. Investments across multiple asset classes (i.e., equity, interest rates, commodities, and currencies
2. The use of trend following signals to determine long or short allocations
3. Risk control mechanisms to determine sizing and increase diversification.

To this effect, we built a top-down multi-factor regression model to explain the performance of a representative benchmark CTA index using a set of cross-asset investments. The CTA benchmark we reference is the SG CTA Index which is comprised of approximately 20 of the largest CTAs by assets, reconstituted yearly with members held in equal weight, and published with daily data. Then, specifically, the multi-factor regression is of global equities, global bonds, commodities, and currency daily returns on the SG CTA index's daily returns. For more details on the top-down multi-factor regression and a discussion on CTA benchmarks, please see our report titled *Quantitative Investment Strategies Panorama*, "Trends aren't going out of fashion", pages 14-19 published in Mar-2017.

In Exhibit 48 and 49 we show the regression beta of both global equities and bonds on the SG CTA Index alongside the z-score of our bottom-up estimate of CTA model sizing (the data displayed in the CTA section earlier) within the S&P 500 and TY futures respectively. Our bottom-up estimate of the position size is estimated by the ratio of component trend to its prevailing volatility. Importantly, our simple bottom-up estimate calculation closely tracks the respective regression betas over time.

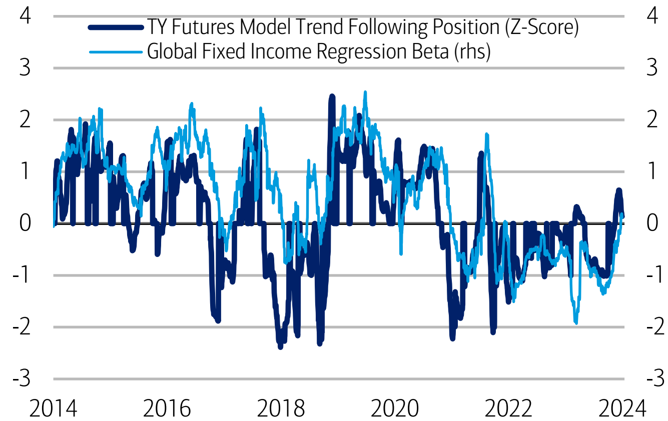
Exhibit 60: BofA bottom-up model CTA allocation in the S&P 500 alongside a top-down regression beta of global equities on the SG CTA Index (a popular benchmark CTA index)
Our bottom-up model is in-line with a top-down regression



Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Exhibit 61: BofA bottom-up model CTA allocation in TY futures alongside a top-down regression beta of global bonds on the SG CTA Index (a popular benchmark CTA index)
Our bottom-up model is in-line with a top-down regression



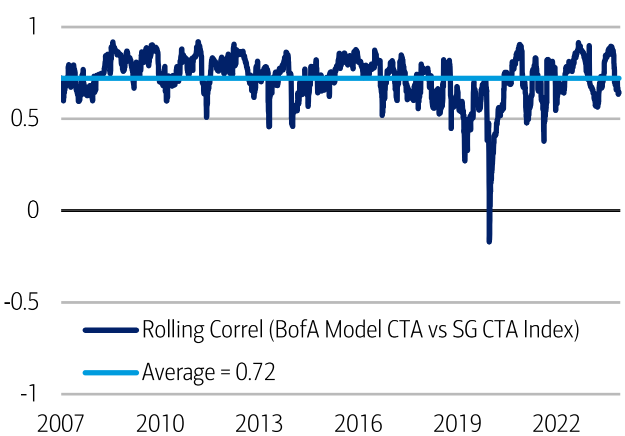
Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

BofA model CTA strategy tracks the benchmark index well

We also constructed a bottom-up CTA strategy using a wide range of futures investments across multiple asset classes. To do so, for each underlying we started with the trend/vol ratio, then assumed equal risk across asset classes and layered on top both rules for stop losses & subsequent re-initiation of positions. In Exhibits 50 and 51 are the rolling correlation and beta of returns for our bottom-up CTA strategy and the SG CTA benchmark index. Correlation of daily returns averages around 0.7 with beta close to 1.

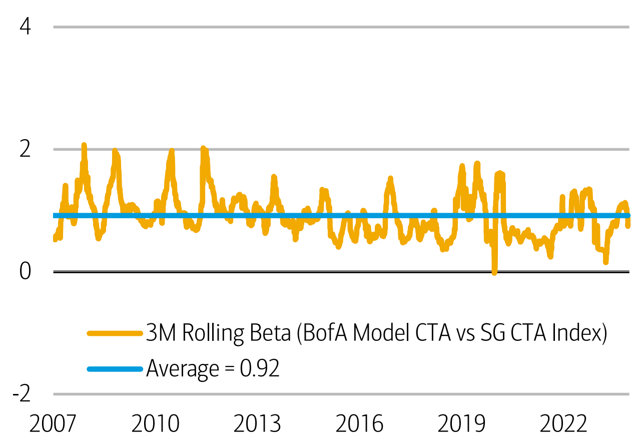
Exhibit 62: Rolling correl. of daily returns of BofA bottom-up model CTA strategy and the SG CTA Index (a popular benchmark CTA index)
Our bottom-up CTA model sized using trend/vol ratios, equal risk across asset classes, and with rules governing stop loss and re-initiation of positions tracks the benchmark CTA index well through time.



Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Exhibit 63: Rolling 3M beta of daily returns of BofA bottom-up model CTA strategy and the SG CTA Index (a popular benchmark CTA index)
Our bottom-up CTA model sized using trend/vol ratios, equal risk across asset classes, and with rules governing stop loss and re-initiation of positions tracks the benchmark CTA index well through time.



Source: BofA Global Research. Data as of 2-Feb-2024.

BofA GLOBAL RESEARCH

Background on risk parity strategies

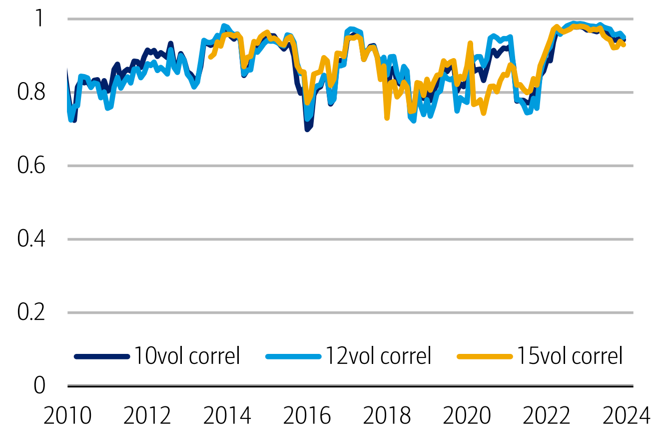
Similar to CTAs, our analysis indicates that risk parity strategies may allocate across the major asset classes and also size their positions as a function of prevailing volatility. However, risk parity strategies are agnostic to price trend and remain fully long each asset class. Risk parity strategies are popular for their ability to target diversification and have a strong track record of positive performance. In 2017, HFR (Hedge Fund Research) launched a suite of benchmark risk parity indices that are comprised of some of the largest risk parity funds. These benchmark indices are published monthly.

The BofA risk parity model is a simple risk parity application applied to equities (S&P 500), bonds (10Y Treasury Futures Total Return), and commodities (S&P GSCI index) rebalanced monthly using the prior three months of data to determine volatility and correlation forecasts. In Exhibits 53 through 55 we show applications of the BofA risk parity model with risk targets of 10, 12, and 15 and in each case compare to the respective HFR risk parity benchmark over monthly periods. Then in Exhibit 52 is the rolling one-year correlation of prior twelve monthly returns for each HFR index and BofA model pair. Correlation tends to be high (> 0.8). As well, the betas are close to 1 with each model strategy closely fitting the respective HFR benchmark.

Unlike for CTAs, there is no database of risk parity funds from which we could gather an estimate of assets tracking the strategy. However, ***commonly used estimates have ranged from $200bn to $750bn.***

Exhibit 64: Rolling 1-year correlation of HFR risk parity and BofA model risk parity monthly returns

HFR risk parity indices with 10, 12, and 15 vol are highly correlated to the respective BofA model risk parity strategies with similar vol targets.

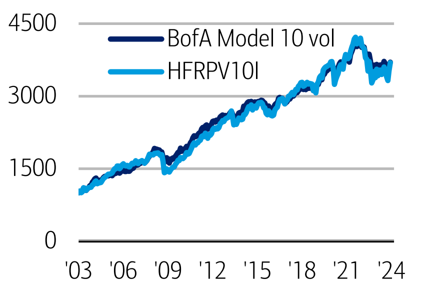


Source: BofA Global Research. Monthly data from Jan-2010. HFR institutional risk parity indices are used.

BofA GLOBAL RESEARCH

Exhibit 65: BofA Model Risk Parity (10% vol target, 1.5x max leverage)

BofA model risk parity tracks the benchmark HFR risk parity index

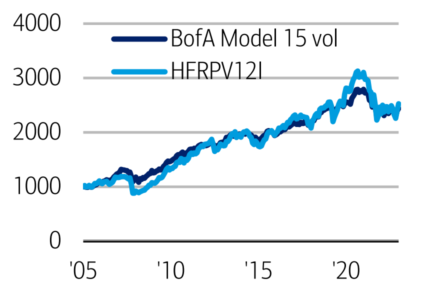


Source: BofA Global Research. Data as of 31-Dec-2023.

BofA GLOBAL RESEARCH

Exhibit 66: BofA Model Risk Parity (12% vol target, 1.5x max leverage)

BofA model risk parity tracks the benchmark HFR risk parity index

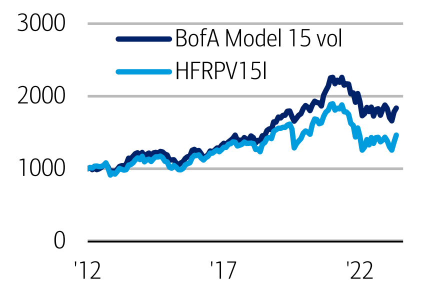


Source: BofA Global Research. Data as of 31-Dec-2023.

BofA GLOBAL RESEARCH

Exhibit 67: BofA Model Risk Parity (15% vol target, 3.0x max leverage)

BofA model risk parity tracks the benchmark HFR risk parity index



Source: BofA Global Research. Data as of 31-Dec-2023.

BofA GLOBAL RESEARCH

Background on equity vol control strategies

Equity vol control is a more simple quantitative strategy relative to CTAs and risk parity. This class of quant dynamically adjusts leverage to target a predefined level of risk based on prevailing equity volatility. For example, if the prevailing level of S&P 500 volatility was 20%, then an S&P 500 10% vol controlled strategy would set leverage to 0.5x, or 50% of total AUM. If on the other hand prevailing volatility was 5%, then leverage would be set to 2x, or 200% of total AUM. Equity vol control strategies are often applied to equity indices with the largest market cap and volumes in order to improve tradability. Risk targets tend to range from 5% to 15%. Versus CTAs and risk parity, assets in equity vol control are the least publicized ***but estimates of $300bn can be reasoned.***

CTA model parameters and outputs explained

Trend strength is calculated using a collection of moving average crosses

Our model trend following strategy requires the measurement of an asset's price trend and we do so using a collection of moving average crosses. The key parts of the calculation are the use of both near and far moving average crosses, weighted equally. A simple example of this would be to measure the 1-month, 3-month, and 10-month moving averages for an asset. Then we compare the 1-month to each the 3-month and 10-month where if it is higher we score it +1 and lower then -1. The two scores are then averaged such that if the 1-month was higher than both the 3- and 10-month the trend strength would be +1 (max long) and if the 1-month was lower than both the 3- and 10-month the trend strength would be -1 (max short). Our actual calculation uses a greater number of crosses and also prorates the crosses based on component volatility in order to make trend strength more continuous over time. Importantly, we do not use the spot price in any cross as our analysis leads us to conclude that actual trend following strategies do not as well.

Bearish/median/bullish price paths are determined using historical data

For each underlying that we apply our trend following model on we also show a projection of how the model position can evolve over the next five trading days. We do this by applying our CTA model on bearish, median, and bullish price paths over the next week. These price paths are determined using historical data for each underlying. Price paths are in part a function of the prevailing volatility of an asset so when determining the various paths we sample only those historical data where volatility is similar to current. Then from this subset of data we can determine low (bear), neutral (median), and high (high) price paths to apply one week ahead.

Rules governing buy and sell triggers in our CTA model

At any given point in time our bottom-up trend following model applied on an underlying asset can be either in a position (long or short) or flat. If in a position, then should a price trend strongly to reverse, our model could potentially hit a stop loss. We assume the stop loss is set such that in an extreme event where every component hits a stop loss simultaneously in the overall model, the loss to the portfolio is approximately 10%. For an underlying asset which our trend following model is currently flat, we assume re-entry occurs under two conditions. If the asset's price hits a local high and its trend strength is positive, a long is initiated. Vice-a-versa, if an asset hits a local low and its trend strength is negative, a short is initiated. The local high/low level can range from lookbacks over the prior five to ten days.

Timescale of leverage changes

CTAs, risk parity, and equity vol control strategies monitor and adjust leverage daily. However, the lag between a model prescribed change in leverage and the actual adjustment varies. Our models and analysis indicate that CTAs are the fastest to respond to model changes, potentially even intraday. Risk parity and equity vol control, however, tend to move slower with adjustments to leverage occurring in the one to two subsequent trading sessions.

A comment on model diversity and market impact

It is important to note that the analysis in this report on trend following and risk parity is based on one implementation of each class of strategy that attempts to track a respective benchmark for each. Actual trend following and risk parity strategies that compose the benchmark indices could vary in their rules-based implementations. This is an important consideration with regards to market impact from this class of strategies. That is, to the extent the models have more diversity, the potentially less impact they can have on the market as trading may not occur at the same levels and/or at the same time. This is a crucial point that is commonly not discussed surrounding this type of analysis.

Disclosures

Important Disclosures

Due to the nature of quantitative 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.

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.

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.
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.
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.
Information relating to Non-US affiliates of BofA Securities and Distribution of Affiliate Research Reports:
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 Inc, regulated by the Canadian Investment Regulatory Organization; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria 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 India by BofAS India; and 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 prepared and issued by Merrill Lynch (DIFC) is done so in accordance with the requirements of the DFSA conduct of business rules. BofA Europe (Frankfurt) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Europe and BofASE (France), may outsource/delegate the marketing and/or provision of certain research services or aspects of research services to other branches or members of the BofA Securities group. You may be contacted by a different BofA Securities entity acting for and on behalf of your service provider where permitted by applicable law. This does not change your service provider. Please refer to the Electronic Communications Disclaimers for further information.
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.

This report may contain a short-term trading idea or recommendation, which highlights a specific near-term catalyst or event impacting the issuer or the market that is anticipated to have a short-term price impact on the equity securities of the issuer. Short-term trading ideas and recommendations are different from and do not affect a stock's fundamental equity rating, which reflects both a longer term total return expectation and attractiveness for investment relative to other stocks within its Coverage Cluster. Short-term trading ideas and recommendations may be more or less positive than a stock's fundamental equity rating.

Futures and options are not appropriate for all investors. Such financial instruments may expire worthless. Before investing in futures or options, clients must receive the appropriate risk disclosure documents. Investment strategies explained in this report may not be appropriate at all times. Costs of such strategies do not include commission or margin expenses.

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.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned herein. Investors in such securities and instruments, including ADRs, 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:

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 information. Facts and views presented in this material that relate to any such proceedings have not been reviewed by, discussed with, and may not reflect information known to, professionals in other business areas of BofA Securities in connection with the legal proceedings or matters relevant to such proceedings.

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.

Research Analysts

Global

Benjamin Bowler
Equity-Linked Analyst
BofAS
benjamin.bowler@bofa.com

Americas

Nitin Saksena
Equity-Linked Analyst
BofAS
nitin.saksena@bofa.com

Chintan Kotecha
Equity-Linked Analyst
BofAS
chintan.kotecha@bofa.com

Nicholas Dunne
Equity-Linked Analyst
BofAS
nicholas.dunne@bofa.com

EMEA

Abhinandan Deb >>
Equity-Linked Analyst
MLI (UK)
abhinandan.deb@bofa.com

Asia-Pac

Lars Naeckter >>
Equity-Linked Analyst
Merrill Lynch (DIFC)
lars.naeckter@bofa.com