

Brazil Healthcare

4Q23 Preview: Overall soft for providers; We prefer ONCO3

Industry Overview

Positive MLR trend; Still challenging results for hospitals

For 4Q23, we expect a challenging scenario for providers – hospitals' margins are under pressure and days of receivables ~20 days above historical average. For insurance operators, the stronger price readjustment and year-end seasonality should help MLR to be a positive surprise, with HAPV and Sula reducing MLR at least 300bps QoQ. The exception in the service provider is ONCO, as we expect a solid result with cash generation improving and top line growing above 20% YoY. Among our service providers coverage, we expect to see the best 4Q results from ONCO3.

ONCO: expect solid results; Cash generation of ~R\$100mn

Strong 4Q23 with cash generation of ~R\$100mn, partly explained by the improvement in days of receivables from 101 days to 95 (escrow account with Unimed). We expect top line growth of ~21% YoY, while EBITDA margin to remain flat at ~19% YoY. Finally, effective tax rate should improve to ~34%, and we see upside risks to our numbers.

QUAL: another challenging quarter with top line reduction

We expect weak 4Q23 results with top line down 10% YoY and net loss of 46k lives, 5% decrease QoQ and 20% YoY in the beneficiary base. We expect EBITDA margin (+CAC) of 31%, 150bps drop YoY and 640bps QoQ, showing loss of operating leverage, despite its cost cut strategy. Finally, we expect net income to be close to zero.

Mater Dei: soft results impacted by seasonality

We expect mild 4Q23 results, partly impacted by the seasonality of the year-end and the reduction in operational beds by 4% QoQ – however, hospital bed occupancy is strong at 70%, flat QoQ. We expect revenue to grow 7% YoY and EBITDA margin of ~23%, a reduction of 70bps YoY and 60bps QoQ. Days of receivables should be stable and higher than historical levels – flat QoQ. Finally, we see net income at R\$33mn (+87% YoY).

Dasa: weak results with EBITDA margin at 14%

We expect weak 4Q23 results with EBITDA margin at ~14% in line with 4Q22 despite easy comps (World Cup happened in 4Q22). We expect top line growth of 10% YoY, mostly explained by hospital growth of 14% (hospital avg. ticket growth of 13% YoY and bed occupation at 75%, flat vs 4Q22). We expect a cash burn of ~R\$500mn, leading to an increase in leverage to 3.9x Net Debt/EBITDA from 3.8x in 3Q23 (covenant at 4x).

Viveo: competition escalated pressuring top line/margin

2Q/3Q23 results were soft (VIVEO -42% since 2Q), reflecting the escalation in competition and a similar trend should happen in 4Q. We expect top-line growth of 11%, below the company's historical average of 13% to 15%. Gross margin at 14.7%, down 70bps YoY and 30bps QoQ – lowest margin in the last 2 years. EBITDA margin at 7.4%, up 30bps YoY but down 90bps QoQ. We expect net income at R\$29mn, down 55% YoY.

22 January 2024

Equity
Latin America
Healthcare

Fred Mendes, CFA >>
Research Analyst
Merrill Lynch (Brazil)
+55 11 2188 4119
fred.mendes@bofa.com

Gustavo Tiseo >>
Research Analyst
Merrill Lynch (Brazil)
gustavo.tiseo@bofa.com

Mirela Oliveira >>
Research Analyst
Merrill Lynch (Brazil)
mirela.oliveira@bofa.com

Lucca R Brendim >>
Research Analyst
Merrill Lynch (Brazil)
lucca.brendim@bofa.com

NI = Net Income

WC = Working Capital

MLR = Medical Loss Ratio

>> Employed by a non-US affiliate of BofAS and is not registered/qualified as a research analyst under the FINRA rules.

Refer to "Other Important Disclosures" for information on certain BofA Securities entities that take responsibility for the information herein in particular jurisdictions.

BofA 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 8 to 10.

12649201

Timestamp: 22 January 2024 08:08PM EST

ODPV: solid results; Corporate DLR to return to historical levels

Solid 4Q23 results with top line growing 9% YoY, reflection of beneficiary base increase of 300k (4% YoY) in 2023 – 110k for 4Q23 – and average ticket growth of 3% YoY. In terms of DLR, we see it at 40.5%, a decrease of 60bps YoY and 220bps QoQ - the highlight is on corporate plan's DLR at 52%, returning to historical levels and a decrease of 420bps QoQ. Finally, we expect an increase in net income of 10% YoY.

Hapvida: Top line grow of 8%; Cash MLR at 69%

Already published. (See: [Hapvida: 4Q23 Preview](#)).

Rede D`Or: Mild results; SuIA and NI comes positive

Already published. (See: [Rede D'Or: 4Q23 Preview](#)).

Fleury: Soft EBITDA margin at 22.4%

Already published. (See: [Fleury: 4Q23 Preview](#)).

4Q23 Preview: Summary

Exhibit 1: Healthcare 4Q23 Preview Summary

4Q23 Preview

	Net Revenues	Adj. EBITDA	Adj. Net Income	EPS	Net Rev. YoY	EBITDA YoY	Net Income YoY
Hapvida	7,055	950	299	0.04	8.5%	58.7%	n/a
Qualicorp	409	125	(2)	(0.01)	-9.7%	-14.0%	n/a
Odontoprev	561	166	130	0.24	9.2%	30.0%	39.5%
Rede D'Or	11,923	1,677	623	0.27	n/a	80.7%	n/a
MaterDei	546	126	33	0.09	6.6%	3.4%	86.9%
Dasa	3,619	504	(173)	(0.23)	10.4%	11.8%	19.7%
Fleury	1,738	389	83	0.15	7.0%	14.6%	14.8%
Oncoclinicas	1,470	307	34	0.07	20.8%	21.4%	-52.1%
Viveo	2,905	214	29	0.09	10.6%	15.1%	-54.6%

Source: BofA Global Research estimates.

BofA GLOBAL RESEARCH

Exhibit 3: Earnings release and conference call details

4Q23 Earnings release and conference call detail

Company	Earnings Release	Conference Call
Hapvida	27-Mar	28-Mar
Qualicorp	20-Mar	21-Mar
Odontoprev	28-Feb	29-Feb
Rede D'Or	26-Mar	27-Mar
MaterDei	28-Mar	28-Mar
Dasa	20-Mar	21-Mar
Fleury	7-Mar	8-Mar
Oncoclinicas	27-Mar	28-Mar
Viveo	11-Mar	12-Mar

Source: BofA Global Research estimates, Company and BBG.

BofA GLOBAL RESEARCH

Oncoclinicas

Exhibit 4: Top line growth of 21% YoY; Cash generation to be positive at R\$100mn – Days of receivables to decrease from 102 to 95

Oncoclinicas` 4Q23 Preview

Oncoclinicas R\$m	4Q23e	Consensus	E x C	4Q22	YoY	3Q23	QoQ
Net Revenues	1,470	1,475	-0.4%	1,217	20.8%	1,402	4.9%
Gross Profit	510	n/a	n/a	452	12.8%	496	2.9%
Gross Margin	34.7%	n/a	n/a	37.2%	-2.5pp	35.4%	-0.7pp
EBITDA	276	276	0.2%	234	18.0%	252	9.5%
EBITDA Margin	18.8%	18.7%	0.1pp	19.3%	-0.4pp	18.0%	0.8pp
Adj. EBITDA	307	n/a	n/a	253	21.4%	283	8.6%
Adj. EBITDA Margin	20.9%	n/a	n/a	20.8%	0.1pp	20.2%	0.7pp
Net Income	45	49	-6.7%	97	-53.1%	149	-69.6%
Net Margin	3.1%	3.3%	-0.2pp	8.0%	-4.9pp	10.7%	-7.6pp
Net Income after minorities	34	42	-19.4%	71	-52.1%	105	-67.5%
Adj. Net Margin	2.3%	2.9%	-0.5pp	5.8%	-3.5pp	7.5%	-5.2pp
EPS	0.07	0.11	-32.1%	0.15	-52.1%	0.22	-67.5%

Source: BofA Global Research estimates, Company and BBG.

BofA GLOBAL RESEARCH

Qualicorp

Exhibit 5: Net loss of 46k and Adj. EBITDA (+CAC) margin at 31% vs 37% in 3Q23.

Qualicorp`s 4Q23 Preview

Qualicorp R\$m	4Q23e	Consensus	E x C	4Q22	YoY	3Q23	QoQ
Net Revenues	409	431	n/a	453	-9.7%	443	-7.7%
EBITDA	169	n/a	n/a	61	175.6%	95	77.4%
EBITDA Margin	41.3%	n/a	n/a	13.5%	27.8pp	21.5%	19.8pp
Adj. EBITDA (+ CAC)	125	169	n/a	146	-14.0%	164	-23.7%
Adj. EBITDA Margin	30.6%	n/a	n/a	32.1%	-1.5pp	37.0%	-6.4pp
Net Income	(2)	8	n/a	(80)	-96.9%	(54)	-95.4%
Net Margin	-0.6%	n/a	n/a	-17.6%	17.0pp	-12.2%	11.6pp
Total Affinity Beneficiary	800	n/a	n/a	1,005	-20.4%	846	-5.4%
Organic Growth Affinity (Net Adds)	(46)	n/a	n/a	(58)	-20.8%	(83)	-45.3%
Operational Cash Flow	178	n/a	n/a	104	71.0%	(220)	-181.0%
EPS	(0.01)	0.03	n/a	(0.28)	-96.9%	(0.19)	-95.4%

Source: BofA Global Research estimates, Company and BBG.

BofA GLOBAL RESEARCH

MaterDei

Exhibit 6: Hospital bed occupation to come positive at 70%, but average ticket in line with 3Q23

MaterDei's 4Q23 Preview

MATD R\$ mn	4Q23e	Consensus	E x C	4Q22	YoY	3Q23	QoQ
Net Revenues	546	567	-3.6%	512	6.6%	568	-3.9%
Gross Profit	175	n/a	n/a	172	1.8%	185	-5.4%
Gross Margin	32.1%	n/a	n/a	33.6%	-1.5pp	32.6%	-0.5pp
EBITDA	126	131	-3.8%	122	3.4%	134	-6.1%
EBITDA Margin	23.1%	23.1%	0.0pp	23.8%	-0.7pp	23.6%	-0.6pp
Net Income	33	45	-26.5%	18	86.9%	35	-6.1%
Net Margin	6.1%	7.9%	-1.9pp	3.5%	2.6pp	6.2%	-0.1pp
Physical Capacity (Beds)	2,497	n/a	n/a	2,497	0.0%	2,497	0.0%
Operational Beds	1,524	n/a	n/a	1,494	2.0%	1,590	-4.2%
Occupancy Rate %	70.0%	n/a	n/a	67.0%	300bps	69.6%	38bps
Avg Ticket Growth QoQ	-0.2%	n/a	n/a	5.0%	-526bps	6.7%	-689bps
Avg Ticket Growth YoY	0.8%	n/a	n/a	-6.0%	688bps	6.2%	-532bps
EPS	0.09	0.12	-26.5%	0.05	86.9%	0.09	-6.1%

Source: BofA Global Research estimates, Company and BBG.

BofA GLOBAL RESEARCH

Dasa

Exhibit 7: We expect a weak EBITDA margin of 14% in 4Q23, in line with 4Q22

Dasa's 4Q23 Preview

Dasa R\$ mn	4Q23e	Consensus	E x C	4Q22	YoY	3Q23	QoQ
Net Revenues	3,619	3,609	0.3%	3,279	10.4%	3,769	-4.0%
Gross Profit	992	n/a	n/a	842	17.8%	1,114	-10.9%
Gross Margin	27.4%	n/a	n/a	25.7%	1.7pp	29.5%	-2.1pp
EBITDA	504	587	-14.1%	451	11.8%	661	-23.7%
EBITDA Margin	13.9%	16.3%	-2.3pp	13.8%	0.2pp	17.5%	-3.6pp
Net Income	(173)	(174)	-0.6%	(215)	19.7%	(183)	-5.6%
Net Margin	-4.8%	-4.8%	0.0pp	-6.6%	1.8pp	-4.9%	0.1pp
Physical Capacity (Beds)	3,408	n/a	n/a	3,408	0.0%	3,408	0.0%
Operational Beds	2,957	n/a	n/a	2,924	1.1%	2,974	-0.6%
Occupancy Rate %	75.0%	n/a	n/a	74.7%	0.3pp	78.5%	-3.5pp
Hospital avg daily bill growth QoQ	2.7%	n/a	n/a	0.0%	n/a	6.6%	-58.6%
Hospital avg daily bill growth YoY	12.5%	n/a	n/a	14.5%	-14.1%	9.5%	31.3%
EPS	(0.23)	(0.23)	-0.6%	(0.29)	-19.7%	(0.24)	-5.6%

Source: BofA Global Research estimates, Company and BBG.

BofA GLOBAL RESEARCH

Viveo

Exhibit 8: EBITDA margin to come weak at 15%

Viveo's 4Q23 Preview

Viveo R\$mn	4Q23e	Consensus	E x C	4Q22	YoY	3Q23	QoQ
Net Revenues	2,905	2,983	-2.6%	2,627	10.6%	2,845	2.1%
Gross Profit	426	n/a	n/a	404	5.5%	427	-0.1%
Gross Margin	14.7%	n/a	n/a	15.4%	-0.7pp	15.0%	-0.3pp
EBITDA	214	261	-18.0%	186	15.1%	235	-8.8%
EBITDA Margin	7.4%	8.7%	-1.4pp	7.1%	0.3pp	8.3%	-0.9pp
Net Income	29	96	-70.0%	63	-54.6%	7	332.8%
Net Margin	1.0%	3.2%	-2.2pp	2.4%	-1.4pp	0.2%	0.8pp

Source: BofA Global Research estimates, Company and BBG.

BofA GLOBAL RESEARCH

Odontoprev

Exhibit 9: We expect Corporate's DLR to return to historical level in 4Q23, a decrease of 420bps QoQ

Odontoprev's 4Q23 Preview

Odontoprev R\$mm	4Q23e	Consensus	E x C	4Q22	YoY	3Q23	QoQ
Health Members (EoP)	8,636	n/a	n/a	8,318	3.8%	8,526	1.3%
Organic Net Adds - Health (MoM)	109	n/a	n/a	99	10.8%	106	-3.3%
Avg Ticket	21.9	n/a	n/a	21.4	2.6%	21.5	1.7%
Net Revenues	561	569	-1.4%	514	9.2%	546	2.8%
Gross Profit	331	n/a	n/a	304	8.8%	305	8.4%
EBITDA	166	159	4.6%	128	30.0%	147	13.3%
Net Income	130	130	-0.1%	93	39.5%	119	9.5%
Gross Margin	59.0%	n/a	n/a	59.2%	-0.2p.p	55.9%	3.1p.p
EBITDA Margin	29.6%	27.9%	1.7p.p	24.9%	4.7p.p	26.9%	2.7p.p
Net Margin	23.1%	22.8%	0.3p.p	18.1%	5.0p.p	21.7%	1.4p.p
DLR	40.5%	n/a	40.5pp	41.1%	-0.6pp	42.7%	-2.2pp
Corporate	51.9%	n/a	n/a	51.9%	0.0pp	56.0%	-4.2pp
SME	27.1%	n/a	n/a	27.1%	0.0pp	30.9%	-3.8pp
Individual	28.2%	n/a	n/a	28.2%	0.0pp	25.9%	2.3pp
EPS	0.24	0.21	11.9%	0.17	39.5%	0.21	n/a

Source: BofA Global Research estimates, Company and BBG.

BofA GLOBAL RESEARCH

Hapvida

Exhibit 10: Hapvida`s 4Q23 Preview – See our comments in [Hapvida: 4Q23 Preview: MLR improvement of ~300bps QoQ; EBITDA at R\\$950mn](#)

Hapvida`s 4Q23 Preview

Hapvida R\$m	4Q23e	Consensus	E x C	4Q22	YoY	3Q23	QoQ	2Q23
Net Revenues	7,055	7,102	-0.7%	6,503	8.5%	6,882	2.5%	6,840
Gross Profit	2,054	n/a	n/a	1,505	36.5%	1,783	15.2%	1,611
Gross Margin	29.1%	n/a	n/a	23.1%	6.0pp	25.9%	3.2pp	23.5%
EBITDA	895	n/a	n/a	529	69.2%	643	39.1%	597
EBITDA Margin	12.7%	n/a	n/a	8.1%	4.6pp	9.3%	3.3pp	8.7%
Adj. EBITDA	950	920	3.3%	599	58.7%	679	40.0%	605
Adj. EBITDA Margin	13.5%	13%	0.5pp	9.2%	4.3pp	9.9%	3.6pp	8.9%
Net Income	(0)	13	n/a	(317)	n/a	(210)	99.9%	(162)
Net Margin	0.0%	0.2%	-0.2pp	-4.9%	4.9pp	-3.0%	3.0pp	-2.4%
Adj. Net Income	299	194	54.2%	23	1230.4%	71	n/a	94
Adj. Net Margin	4.2%	2.7%	1.5pp	0.3%	3.9pp	1.0%	3.2pp	1.4%
EPS	0.04	(0.03)	-247.1%	0.00	1206.5%	0.01	n/a	0.01
Health Members (EoP)	8,913	n/a	n/a	9,138	-2.5%	8,925	-0.1%	9,015
Organic Net Adds - Health (MoM)	(89)	n/a	n/a	103	-186.5%	(90)	n/a	(116)
Cash MLR	68.9%	n/a	n/a	72.9%	-401bps	71.9%	-300bps	73.9%
Total Loss Ratio	70.9%	n/a	n/a	76.9%	-597bps	74.1%	-322bps	76.5%
CAPEX	104	n/a	n/a	236	-55.9%	102	2.5%	122
Avg Ticket Growth YoY	10.5%	n/a	n/a	5.4%	515bps	8.9%	161bps	9.6%
Avg Ticket Growth Health YoY	10.3%	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Avg Ticket Growth Health QoQ	1.5%	n/a	n/a	2.9%	-143bps	2.8%	-130bps	3.8%

Source: BofA Global Research estimates, Company and BBG.

BofA GLOBAL RESEARCH

Rede D`Or

Exhibit 11: Rede D`Or 4Q23 Preview – See our comments in [Rede D'Or: 4Q23 Preview: Hospital's under pressure; SuIA keeping the positive trend](#)

Rede D`Or 4Q23 Preview

Rede D'Or R\$m	4Q23e	Consensus	E x C	4Q22	YoY	3Q23	QoQ
Net Revenues	11,923	12,294	-3.0%	12,179	n/a	12,015	-0.8%
Rede D`Or	6,219	-	n/a	5,752	8.1%	6,505	-4.4%
SulAmerica	7,088	-	n/a	6,428	10.3%	6,951	2.0%
Eliminations	(1,383)	-	n/a	0	n/a	(1,440)	-4.0%
Gross Profit	2,380	-	n/a	1,601	48.6%	2,409	-1.2%
Gross Margin	20.0%	-	n/a	13.1%	6.8pp	20.1%	-0.1pp
EBITDA	1,677	1,446	15.9%	928	80.7%	1,912	-12.3%
EBITDA Margin	14.1%	11.8%	2.3pp	7.6%	6.4pp	15.9%	-1.9pp
Net Income	623	628	-0.7%	16	3741.6%	760	-18.0%
Net Margin	5.2%	5.1%	0.1pp	0.1%	5.1pp	6.3%	-1.1pp
EPS	0.27	0.27	-0.7%	0.01	3741.6%	0.33	-18.0%
Physical Capacity (Beds)	12,515	-	n/a	11,487	8.9%	11,512	8.7%
Operational Beds	9,600	-	n/a	9,469	1.4%	9,600	0.0%
Occupancy Rate %	77.0%	-	n/a	76.9%	14bps	80.1%	-304bps
Rede D`Or EBITDA mg	22.8%	-	n/a	21.1%	170bps	28.3%	-546bps
MLR	82.3%	-	n/a	92.5%	-1025bps	85.4%	-310bps
CAPEX	646	0	n/a	n/a	n/a	654	-1.2%
Avg Ticket Growth QoQ	-0.7%	-	n/a	-7.7%	701bps	0.0%	-69bps
Avg Ticket Growth YoY	7.6%	-	n/a	n/a	n/a	7.4%	20bps

Source: BofA Global Research estimates, Company and BBG.

BofA GLOBAL RESEARCH

Fleury

Exhibit 12: Fleury`s 4Q23 Preview – See our comment in [Fleury: 4Q23 Preview: Soft 4Q23, but a promising](#)

Fleury`s 1s 4Q23 Preview

Fleury R\$mn	4Q23e	Consensus	E x C	4Q22	YoY	3Q23	QoQ
Net Revenues	1,738	1,823	-4.6%	1,625	7.0%	1,870	-7.0%
Gross Profit	417	n/a	n/a	385	8.3%	528	-20.9%
Gross Margin	24.0%	n/a	n/a	23.7%	0.3pp	28.2%	-4.2pp
EBITDA	389	448	-13.1%	340	14.6%	506	-23.1%
EBITDA Margin	22.4%	24.6%	-2.2pp	20.9%	1.5pp	27.1%	-4.7pp
Adj. EBITDA	389	n/a	n/a	340	14.6%	506	-23.1%
Adj. EBITDA Margin	22.4%	n/a	n/a	20.9%	1.5pp	27.1%	-4.7pp
Net Income	83	110	n/a	72	n/a	172	51.9%
Net Margin	4.8%	6.0%	-1.3pp	4.4%	0.3pp	9.2%	-4.4pp
Adj. Net Income	83	111	-25.6%	72	14.8%	172	n/a
Adj. Net Margin	4.8%	6.1%	-1.3pp	4.4%	0.3pp	9.2%	-4.4pp
EPS	0.15	n/a	n/a	0.13	14.8%	0.31	n/a

Source: BofA Global Research estimates, Company and BBG.

BofA GLOBAL RESEARCH

Disclosures

Important Disclosures

FUNDAMENTAL EQUITY OPINION KEY: Opinions include a Volatility Risk Rating, an Investment Rating and an Income Rating. **VOLATILITY RISK RATINGS**, indicators of potential price fluctuation, are: A - Low, B - Medium and C - High. **INVESTMENT RATINGS** reflect the analyst's assessment of both a stock's absolute total return potential as well as its attractiveness for investment relative to other stocks within its Coverage Cluster (defined below). Our investment ratings are: 1 - Buy stocks are expected to have a total return of at least 10% and are the most attractive stocks in the coverage cluster; 2 - Neutral stocks are expected to remain flat or increase in value and are less attractive than Buy rated stocks and 3 - Underperform stocks are the least attractive stocks in a coverage cluster. An investment rating of 6 (No Rating) indicates that a stock is no longer trading on the basis of fundamentals. Analysts assign investment ratings considering, among other things, the 0-12 month total return expectation for a stock and the firm's guidelines for ratings dispersions (shown in the table below). The current price objective for a stock should be referenced to better understand the total return expectation at any given time. The price objective reflects the analyst's view of the potential price appreciation (depreciation).

Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster ^{R1}
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

^{R1} Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

INCOME RATINGS, indicators of potential cash dividends, are: 7 - same/higher (dividend considered to be secure), 8 - same/lower (dividend not considered to be secure) and 9 - pays no cash dividend. *Coverage Cluster* is comprised of stocks covered by a single analyst or two or more analysts sharing a common industry, sector, region or other classification(s). A stock's coverage cluster is included in the most recent BofA Global Research report referencing the stock.

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

From time to time research analysts conduct site visits of covered issuers. BofA Global Research policies prohibit research analysts from accepting payment or reimbursement for travel expenses from the issuer for such visits.

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.bofam.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 (HKSF); 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 HKSF; 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 CBL. 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.

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:

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 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.