What's priced in

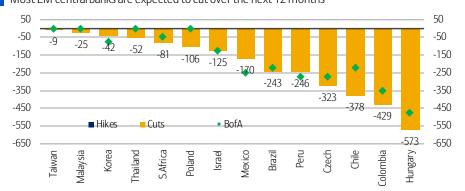
BCRP will likely cut this week; BOK and NBP on hold

In **Poland**, the central bank meets on January 9. The market is pricing 64bp of cumulative cuts over the next 6 months. Our economist, Mai Doan, forecasts the NBP to keep the monetary policy rate unchanged at 5.75% on January 11.

In **Korea**, the central bank meets on January 11. The market is pricing 20bp of cumulative cuts over the next 6 months Our economists, Benson Wu and Ting Him Ho, forecast the BOK to remain on hold at 3.50% on January 11. We have penciled in three cuts by the BOK from May 2024 the earliest, with 25bp in each following quarter in 2024. We also expect one more cut in 1Q25 with a terminal rate of 2.5%.

In **Peru**, the central bank meets on January 11. The market is pricing 124bp of cumulative cuts over the next 6 months. Our economist, Alexander Müller, forecasts the BCRP to cut the monetary policy rate by 25bp, to 6.50%, in the first meeting of the year. The significant decline of inflation, expectations of a milder El Niño, and more benign external conditions than a few months ago gives the BCRP space to continue cutting rates.

Chart 1: 12-month priced-in policy rate change vs BofA forecastsMost EM central banks are expected to cut over the next 12 months



Updated on January 05. **Source:** BofA Global Research. 12 month period ends 04 January 2025

BofA GLOBAL RESEARCH

07 January 2024

GEM FI Strategy Global

Claudio Irigoyen Global Economist BofAS

+1 646 855 1734 claudio.irigoyen@bofa.com

David Hauner, CFA >> Global EM FI/FX Strategist MLI (UK) +44 20 7996 1241 david.hauner@bofa.com

Claudio Piron

Emerging Asia FI/FX Strategist Merrill Lynch (Singapore) +65 6678 0401 claudio.piron@bofa.com

Pedro DiazCaribbean Economist BofAS pdiaz2@bofa.com

GEMs FI Strategy & Economics BofAS

BCRP: Central Bank of Peru

BOK: Bank of Korea

NBP: National Bank of Poland

Trading ideas and investment strategies discussed herein may give rise to significant risk and are not suitable for all investors. Investors should have experience in relevant markets and the financial resources to absorb any losses arising from applying these ideas or strategies.

>> 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 11 to 13.

1264236

Summary

Table 1: ASIA

Implied Marginal Policy Rate Changes

	Ko	rea	Malaysia Taiwan		iwan Thailar		ailand	
Country	lmp	BofA	lmp	BofA	lmp	BofA	lmp	BofA
Curr. Rate	3.	.50	3.00		1.8	1.875		2.50
next meet.	-1	0	-1	0	-2	0	-5	0
Mar24	-5	0	-4	0	-	0	-	-
Jun24	-14	-25	-6	0	-2	0	-19	0
Sep24	-12	-25	-11	0	-2	0	-12	0
Dec24	-10	-25	-2	0	-2	0	-17	0
2024	-42	-75	-25	0	-9	0	-52	0
<u>2025</u>	-31	-25	4	0	-9	0	6	-50

Next Central Banks meeting dates: Korea (01/11), Malaysia (01/24), Taiwan (03/21), Thailand (02/07). **Source:** BofA Global Research

BofA GLOBAL RESEARCH

Table 2: EEMEA

Implied Marginal Policy Rate Changes

	Cze	ech R.	Hui	ngary	Israel		
Country	lmp	BofA	lmp	BofA	lmp	BofA	
Curr. Rate	(6.75		0.75	4.50		
next meet.	-39	-25	-109	-75	-16	0	
Mar24	-47	-50	-170	-125	-	-,-	
Jun24	-98	-100	-156	-125	-38	-25	
Sep24	-86	-50	-94	-75	-37	-50	
Dec24	-53	-50	-43	-75	-26	-25	
2024	-323	-275	-573	-475	-117	-100	
2025	-46	-100	-19	-150	-22	-100	

Next Central Banks meeting dates: Czech (02/08), Hungary (01/30), Israel (02/26), **Source:** BofA Global Research

BofA GLOBAL RESEARCH

Table 3: EEMEA

Implied Marginal Policy Rate Changes

	Po	land	S. <i>F</i>	Africa	Türkiye	
Country	lmp	BofA	lmp	BofA	lmp	BofA
Curr. Rate		5.75		3.25	42.50	
next meet.	-1	0	-10	0	48	250
Mar24	-10	0	-11	0	146	0
Jun24	-39	0	-14	0	-19	0
Sep24	-28	0	-32	-25	-366	0
Dec24	-28	0	-15	-25	-724	0
2024	-106	0	-81	-50	-914	250
2025	-77	-100	-15	-75	-566	-1200

Next Central Banks meeting dates: Poland (01/09), Safrica (01/25).Türkiye (01/19). Source: BofA Global Research

BofA GLOBAL RESEARCH

Table 4: LATAM

Implied Marginal Policy Rate Changes

	Br	azil	Ch	ile	Colombia		nbia Mexic	
Country	lmp	BofA	lmp	BofA	lmp	BofA	lmp	BofA
Curr. Rate	11	.75	8.	8.25		13.00		1.25
next meet.	-56	-50	-74	-50	-37	-25	-5	0
Mar24	-51	-50	-	-	-45	-25	-13	0
Jun24	-80	-100	-179	-100	-116	-100	-40	-50
Sep24	-41	-25	-79	-50	-128	-100	-49	-100
Dec24	-15	0	-47	-25	-104	-100	-62	-100
2024	-243	-225	-378	-225	-429	-350	-170	-250
2025	47	0	-20	-100	-149	-350	-172	-125

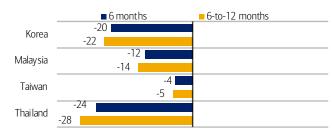
Next Central Banks meeting dates: Brazil (01/31), Chile (01/31), Colombia (01/31), Mexico (02/08). **Source**: BofA Global Research

BofA GLOBAL RESEARCH

Note: Curve update times are in the GMT time zone

Chart 2: Priced in marginal changes

Implied Marginal Policy Rate Changes

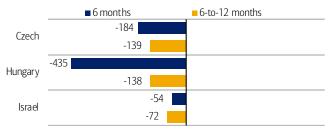


Yield curves last update: KRW: Jan-05 09:28. MYR: Jan-05 09:28. TWD: Jan-05 09:28. THB: Jan-05 09:28. **Source:** BofA Global Research

BofA GLOBAL RESEARCH

Chart 3: Priced in marginal changes

Priced in marginal changes

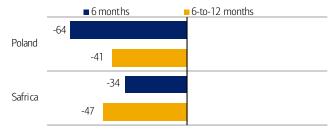


Yield curves last update: CZK: Jan-05 . HUF: Jan-05 . ILS: Jan-05 . **Source:** BofA Global Research

BofA GLOBAL RESEARCH

Chart 4: Priced in marginal changes

Implied Marginal Policy Rate Changes

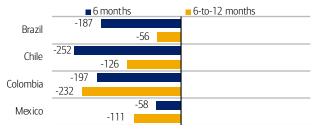


Yield curves last update: PLN: Jan-05 , ZAR: Jan-05 , TRY: Jan-05 , {\bf Source:} BofA Global Research

BofA GLOBAL RESEARCH

Chart 5: Priced in marginal changes

Implied Marginal Policy Rate Changes



Yield curves last update: BRL: Jan-05 21:40. CLP: Jan-05 21:05. COP: Jan-05 21:05. MXN: Jan-05 21:05. **Source:** BofA Global Research

Asia

Table 5: KOREA

Implied Monetary Policy

	Smooth Path (2		h (2)	Market (1) BofA		Most Likely Path (3) Chang	
		Cha	nge	Change	Change	e	
Meeting	Rate	Cumul.	Marg.	Marg.	Marg.	Marg.	Prob.(%) (4)
Curr. Rate	3.50						
11-Jan-24	3.49	-1	-1	0	0	0	95
22-Feb-24	3.44	-6	-5	-2	0	0	76
12-Apr-24	3.37	-13	-7	-12	0	-25	52
23-May-24	3.30	-20	-7	-8	-25	0	81
11-Jul-24	3.23	-27	-6	-3	0	0	93
22-Aug-24	3.17	-33	-6	-6	-25	0	69
11-Oct-24	3.12	-38	-5	-5	0	-25	51
28-Nov-24	3.08	-42	-5	-6	-25	0	70
13-Jan-25	3.04	-46	-4	-2		0	86
23-Feb-25	2.99	-51	-4	-5		0	97
12-Apr-25	2.95	-55	-4	-5		0	80
24-May-25	2.90	-60	-5	-4		0	62
12-Jul-25	2.86	-64	-4	-5		-25	56
23-Aug-25	2.82	-68	-4	-5		0	73
12-Oct-25	2.79	-71	-3	-3		0	85
22-Nov-25	2.77	-73	-2	-2		0	93

Basis: 31bp. Basis is the difference between the 3 month CD rate and the monetary policy rate. Source: BofA Global Research

BofA GLOBAL RESEARCH

Table 6: MALAYSIA Implied Monetary Policy

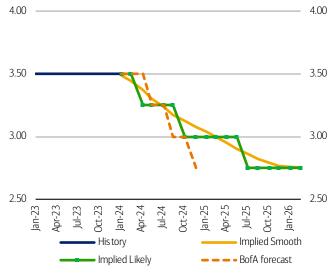
	Smooth Path (2)			Market (1)	BofA	Most Likely Path (3)		
		Chai	nge	Change	Change	Change		
Meeting	Rate	Cumul.	Marg	Marg.	Marg.	Marg.	Prob.(%) (4)	
Curr. Rate	3.00							
24-Jan-24	2.99	-1	-1	1	0	0	95	
7-Mar-24	2.94	-6	-4	-5	0	0	78	
9-May-24	2.88	-12	-6	-7	0	0	53	
11-Jul-24	2.82	-18	-7	-10	0	-25	74	
5-Sep-24	2.77	-23	-5	-3	0	0	92	
6-Nov-24	2.75	-25	-2	-1	0	0	98	
23-Jan-25	2.74	-26	0	-1		0	97	
7-Mar-25	2.76	-24	1	2		0	98	
9-May-25	2.78	-22	2	3		0	90	
11-Jul-25	2.79	-21	2	2		0	84	

Basis: 70bp. Basis is the difference between the Klibor 3 month fixing rate and the monetary policy rate. Source: BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 1: Korea



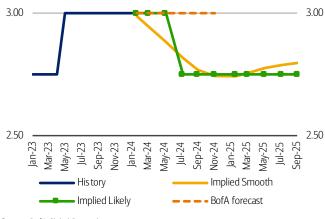


Source: BofA Global Research

BofA GLOBAL RESEARCH

Chart 6: Malaysia

Market prices 12bp of cumulative cuts over the next six months



Source: BofA Global Research

- 1. The market path shows policy rate changes priced in by the market using the raw forward rates derived from the local yield curve.
- 2. The smooth path is constructed by smoothing the market path using the Hodrick-Prescott filter.

 3. The most likely path rounds the smooth path to the closest feasible rate if the Central Bank changes the rate in discrete steps.
- 4. Displays the probability of the most likely policy change at each meeting, assuming the policy rate was on the most likely path at the previous meeting.

Table 7: THAILAND

Implied Monetary Policy

	Smo	oth Path	ı (2)	Market (1)	BofA Chang	Most Likely Path (3)		
		Cha	1ge	Change	e	Change		
Meeting	Rate	Cumul.	Marg	Marg.	Marg.	Marg.	Prob.(%) (4)	
Curr. Rate	2.50							
7-Feb-24	2.45	-5	-5	-4	0	0	80	
10-Apr-24	2.37	-13	-8	-7	0	-25	53	
12-Jun-24	2.26	-24	-11	-13	0	0	97	
21-Aug-24	2.14	-36	-12	-14	0	0	57	
16-Oct-24	2.04	-46	-10	-11	0	-25	84	
18-Dec-24	1.98	-52	-7	-9	0	0	90	
6-Feb-25	1.95	-55	-2	1		0	82	
9-Apr-25	1.96	-54	1	3		0	86	
11-Jun-25	1.99	-51	2	4		0	95	
20-Aug-25	2.01	-49	2	2		0	97	
15-Oct-25	2.02	-48	1	0		0	92	
17-Dec-25	2.04	-46	1	-2		0	86	
6-Feb-26	2.06	-44	3	4		0	74	
9-Apr-26	2.11	-39	4	6		0	57	
11-Jun-26	2.15	-35	5	6		25	61	
20-Aug-26	2.19	-31	4	4		0	78	

Basis: -1bp. Basis is the difference between the Overnight Indexed Swap rate and the monetary policy rate. Source: BofA Global Research

BofA GLOBAL RESEARCH

Table 8: TAIWAN Implied Monetary Policy

	Smooth Path (2)			Market (1)	BofA	Most Likely Path (3)		
		Cha	nge	Change	Change	Change		
Meeting	Rate	Cumul.	Marg	Marg.	Marg.	Marg.	Prob.(%) (4)	
Curr. Rate	1.875							
21-Mar-24	1.854	-2	-2	-2	0.0	0.0	83	
13-Jun-24	1.831	-4	-2	-2	0.0	0.0	65	
19-Sep-24	1.807	-7	-2	-3	0.0	-12.5	54	
19-Dec-24	1.782	-9	-2	-3	0.0	0.0	74	
20-Mar-25	1.758	-12	-2	-2		0.0	94	
19-Jun-25	1.733	-14	-2	-2		0.0	87	
18-Sep-25	1.710	-17	-2	-2		0.0	68	
18-Dec-25	1.689	-19	-2	-2		0.0	51	

Basis: -26bp. Basis is the difference between the Secondary Market 90 days fixing rate and the monetary policy rate. Source: BofA Global Research

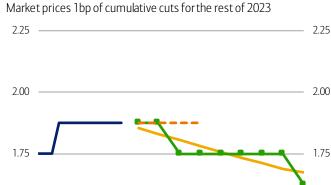
BofA GLOBAL RESEARCH

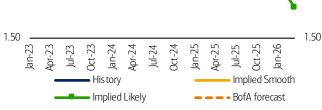
Chart 7: Thailand

Market prices 24bp of cumulative cuts over the next six months



Chart 8: Taiwan





Source: BofA Global Research Estimates, Bloomberg

- 1. The market path shows policy rate changes priced in by the market using the raw forward rates derived from the local yield curve.
- $\textbf{2.} \ \textbf{The smooth path is constructed by smoothing the market path using the Hodrick-Prescott filter.} \\$
- 3. The most likely path rounds the smooth path to the closest feasible rate if the Central Bank changes the rate in discrete steps.
- 4. Displays the probability of the most likely policy change at each meeting, assuming the policy rate was on the most likely path at the

EEMEA

Table 9: CZECH REPUBLIC

Implied Monetary Policy

	Smo	Smooth Path (2) Change			BofA Change		Likely n (3)
Meeting	Rate	Cumul.	Marg.	Marg.	Marg.	Marg.	Prob.(%) (4)
Curr. Rate	6.75						
8-Feb-24	6.36	-39	-39	-28	-25	-50	55
20-Mar-24	5.90	-85	-47	-61	-50	-25	58
2-May-24	5.40	-135	-50	-49	-50	-50	60
27-Jun-24	4.91	-184	-49	-39	-50	-50	64
1-Aug-24	4.44	-231	-47	-58	-25	-50	78
25-Sep-24	4.05	-270	-39	-46	-25	-50	79
7-Nov-24	3.76	-299	-29	-8	-25	-25	97
19-Dec-24	3.52	-323	-23	-34	-25	-25	90
7-Feb-25	3.36	-339	-16	-18		-25	54
20-Mar-25	3.27	-348	-9	-5		0	90
2-May-25	3.23	-352	-4	-3		0	92
27-Jun-25	3.21	-354	-2	-3		0	83
1-Aug-25	3.19	-356	-2	-2		0	76
25-Sep-25	3.16	-359	-3	0		0	65
7-Nov-25	3.12	-363	-4	-5		-25	52
19-Dec-25	3.07	-368	-5	-12		0	72

Basis: -4bp. Basis is the difference between the Czech interbank offered 3 month rate and the monetary policy rate. Source: BofA Global Research

BofA GLOBAL RESEARCH

Table 10: HUNGARY

Implied Monetary Policy

	Smooth Path (2)		Market (1)	BofA	Most Likely Path (3)		
		Cha	nge	Change	Change	Change	
Meeting	Rate	Cumul.	Marg.	Marg.	Marg.	Marg.	Prob.(%) (4)
Curr. Rate	10.75						
30-Jan-24	9.66	-109	-109	-108	-75	-105	75
27-Feb-24	8.73	-202	-93	-100	-75	-90	53
19-Mar-24	7.96	-279	-77	-71	-50	-90	61
23-Apr-24	7.33	-342	-63	-64	-50	-60	82
28-May-24	6.81	-394	-51	-50	-50	-45	76
25-Jun-24	6.40	-435	-42	-43	-25	-45	97
23-Jul-24	6.05	-470	-35	-31	-25	-30	64
27-Aug-24	5.74	-501	-31	-23	-25	-30	57
24-Sep-24	5.45	-530	-28	-44	-25	-30	68
29-Oct-24	5.23	-552	-22	-26	-25	-30	78
26-Nov-24	5.10	-565	-14	-5	-25	-15	68
17-Dec-24	5.02	-573	-8	-6	-25	0	79
28-Jan-25	4.97	-578	-4	-5		-15	51
25-Feb-25	4.95	-580	-3	-4		0	69
25-Mar-25	4.93	-582	-2	-1		0	80
29-Apr-25	4.91	-584	-2	-3		0	91
27-May-25	4.90	-585	-2	0		0	97
24-Jun-25	4.87	-588	-3	-1		0	77
22-Jul-25	4.82	-593	-4	-5		-15	51
26-Aug-25	4.78	-597	-4	-7		0	81
30-Sep-25	4.75	-600	-3	-7		0	100

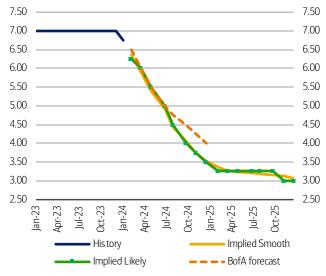
Basis: -82bp. Basis is the difference between the Budapest interbank offered 3 month rate and the monetary policy rate. Source: BofA Global Research

BofA GLOBAL RESEARCH

- The market path shows policy rate changes priced in by the market using the raw forward rates derived from the local yield curve.
 The smooth path is constructed by smoothing the market path using the Hodrick-Prescott filter.
 The most likely path rounds the smooth path to the closest feasible rate if the Central Bank changes the rate in discrete steps.
- 4. Displays the probability of the most likely policy change at each meeting, assuming the policy rate was on the most likely path at the previous meeting,

Chart 9: Czech Republic

Market prices 184bp of cumulative cuts over the next six months



Source: BofA Global Research

BofA GLOBAL RESEARCH

Chart 10: Hungary

Market prices 435bp of cumulative cuts over the next six months

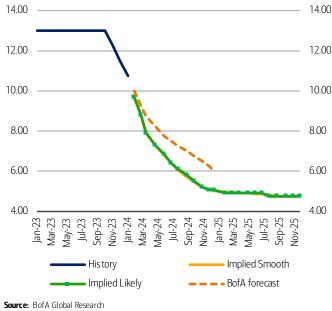




Table 11: POLANDImplied Monetary Policy

	Smo	oth Patl Chai		Market (1) Change	BofA Change	Most Likely Path (3) Change		
Meeting	Rate	Cumul.	Marg	Marg.	Marg.	Marg.	Prob.(%) (4)	
Curr. Rate	5.75							
9-Jan-24	5.74	-1	-1	-2	0	0	98	
7-Feb-24	5.71	-4	-3	-1	0	0	85	
6-Feb-24	5.64	-11	-7	-5	0	0	57	
4-Apr-24	5.53	-22	-11	-12	0	-25	86	
9-May-24	5.40	-35	-14	-18	0	0	59	
5-Jun-24	5.25	-50	-15	-13	0	-25	99	
5-Jul-24	5.11	-64	-14	-11	0	-25	57	
5-Sep-24	4.97	-78	-14	-22	0	0	89	
3-Oct-24	4.86	-89	-11	-6	0	-25	55	
7-Nov-24	4.77	-98	-9	-14	0	0	91	
5-Dec-24	4.69	-106	-8	4	0	0	78	
14-Jan-25	4.59	-116	-10	-10		-25	64	
7-Feb-25	4.46	-129	-13	-25		0	85	
7-Mar-25	4.35	-140	-12	-10		-25	61	
4-Apr-25	4.26	-149	-9	-7		0	97	
9-May-25	4.19	-156	-7	-6		0	74	
5-Jun-25	4.13	-162	-6	-6		0	52	
5-Jul-25	4.08	-167	-5	-4		-25	67	
5-Sep-25	4.04	-171	-4	-5		0	85	
3-Oct-25	4.00	-175	-4	-6		0	99	
7-Nov-25	3.96	-179	-4	-2		0	84	

Basis: 12bp. Basis is the difference between the WIBOR Warsaw interbank 3 months offered rate and the monetary policy rate. **Source:** BofA Global Research

BofA GLOBAL RESEARCH

70

0

Table 12: ISRAELImplied Marginal Policy Rate Changes

3.92

-183

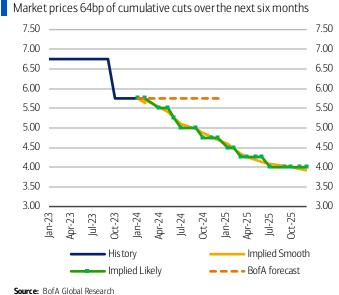
5-Dec-25

				Market			Most Likely Path		
	Smo	oth Patl	٠,	(1)	BofA		(3)		
		Cha	nge Marg	Change	Change	Change	Prob.(%)		
Meeting	Rate	Cumul.		Marg.	Marg.	Marg.	(4)		
Curr. Rate	4.50								
26-Feb-24	4.34	-16	-16	-9	0	-15	94		
8-Apr-24	4.15	-35	-19	-35	-25	-15	67		
27-May-24	3.96	-54	-19	0	0	-30	58		
8-Jul-24	3.77	-73	-20	-39	-50	-15	90		
28-Aug-24	3.59	-91	-17	0	0	-15	96		
7-Oct-24	3.44	-106	-15	-34	-25	-15	93		
25-Nov-24	3.33	-117	-11	0	0	-15	79		
1-Jan-25	3.25	-125	-8	0	-25	0	65		
20-Feb-25	3.17	-133	-8	-23		-15	87		
2-Apr-25	3.12	-138	-5	0		0	82		
21-May-25	3.10	-140	-2	0		0	69		
9-Jul-25	3.10	-140	0	0		0	66		
28-Aug-25	3.10	-140	0	0		0	68		
22-Oct-25	3.10	-140	0	0		0	70		
26-Nov-25	3.11	-139	0	0		0	71		

Basis: -4bp. Basis is the difference between the Tel Aviv interbank offered 3 month rate and the monetary policy rate. **Source:** BofA Global Research

BofA GLOBAL RESEARCH

Chart 11: Poland



BofA GLOBAL RESEARCH

Chart 12: Israel



Source: BofA Global Research



Exhibit 2: TÜRKIYE

Implied Marginal Policy Rate Changes

			Market		Most Likely Path		
Smo	Smooth Path (2)			BofA		(3)	
	Change		Change	Change	Change		
Rate	Cumul.	Marg.	Marg.	Marg.	Marg.	Prob.(%) (4)	
42.50							
42.98	48	48	-29	250	50	96	
43.76	126	78	179	0	75	99	
44.44	194	68	95	0	75	88	
44.76	226	32	-22	0	25	97	
44.71	221	-5	0	0	0	93	
44.25	175	-46	0	0	-50	99	
43.36	86	-90	-233	0	-100	79	
42.23	-27	-113	0	0	-100	96	
40.59	-191	-163	0	0	-175	81	
38.26	-424	-233	-609	0	-225	97	
35.94	-656	-232	0	0	-225	88	
33.36	-914	-258	0	0	-275	78	
30.42	-1208	-294	-861	0	-275	84	
28.50	-1400	-192	0	-250	-200	99	
27.63	-1487	-88		-250	-75	75	
27.39	-1511	-24		-500	-25	78	
27.44	-1506	4		0	0	87	
27.55	-1495	11		0	0	91	
27.63	-1487	9		0	25	77	
27.68	-1482	5			0	86	
27.70	-1480	2			0	89	
27.70	-1480	0			0	90	
27.69	-1481	0			0	89	
	Rate 42.50 42.98 43.76 44.44 44.76 44.71 44.25 43.36 42.23 40.59 38.26 35.94 33.36 30.42 28.50 27.63 27.39 27.44 27.55 27.63 27.68 27.70 27.70	Rate Cumul. 42.50 48 43.76 126 44.44 194 44.76 226 44.71 221 44.25 175 43.36 86 42.23 -27 40.59 -191 38.26 -424 35.94 -656 33.36 -914 30.42 -1208 28.50 -1400 27.63 -1487 27.39 -1511 27.44 -1506 27.55 -1495 27.63 -1487 27.68 -1482 27.70 -1480 27.70 -1480	Rate Chawl. Marg. 42.50	Smoth Path V2 (Change) (1) Change Rate Cumul. Marg. Marg. 42.50 V 179 42.98 48 48 -29 43.76 126 78 179 44.44 194 68 95 44.71 221 -5 0 44.25 175 -46 0 43.36 86 -90 -233 42.23 -27 -1113 0 40.59 -191 -163 0 38.26 -424 -233 -609 35.94 -656 -232 0 33.36 -914 -258 0 30.42 -1208 -294 -861 28.50 -1400 -192 0 27.63 -1487 -88 -8 27.39 -1511 -24 -9 27.44 -1506 4 -9 27.55 -1495 11 <td>Smoth Patity (Change) (Change)</td> <td>Smooth Path (2) Change (1) Change BofA Change Change Rate Cumul. Marg. 50 0 75 44.44 194 68 95 0 75 0 0 0 25 0 0 0 10 10 44.75 110 0 0 0 10 10 10 10 10 10</td>	Smoth Patity (Change) (Change)	Smooth Path (2) Change (1) Change BofA Change Change Rate Cumul. Marg. 50 0 75 44.44 194 68 95 0 75 0 0 0 25 0 0 0 10 10 44.75 110 0 0 0 10 10 10 10 10 10	

Basis: 63bp. Basis is the difference between the USDTRY 3m fwd implied rate and the monetary policy rate. **Source:** BofA Global Research

BofA GLOBAL RESEARCH

Table 13: SOUTH AFRICA Implied Monetary Policy

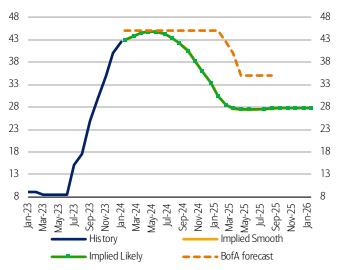
	Smooth Path (2) Change		Market (1) Change	BofA Change	Most Likely Path (3) Change		
Meeting	Rate	Cumul.	Marg	Marg.	Marg.	Marg.	Prob.(%) (4)
Curr. Rate	8.25						
25-Jan-24	8.15	-10	-10	-10	0	0	62
27-Mar-24	8.04	-21	-11	-10	0	-25	84
30-May-24	7.91	-34	-14	-13	0	0	62
18-Jul-24	7.75	-50	-16	-15	-25	-25	100
19-Sep-24	7.59	-66	-16	-19	0	-25	65
21-Nov-24	7.44	-81	-15	-18	-25	0	76
23-Jan-25	7.33	-92	-11	-6		-25	69
26-Mar-25	7.25	-100	-8	-10		0	100
29-May-25	7.21	-104	-4	-4		0	84
17-Jul-25	7.21	-104	0	-2		0	82
18-Sep-25	7.24	-101	3	0		0	95
20-Nov-25	7.29	-96	6	18		0	83

Basis: 15bp. Basis is the difference between the Johannesburg interbank agreed 3 month rate and the monetary policy rate. **Source:** BofA Global Research

BofA GLOBAL RESEARCH

Chart 13: Türkiye

Market prices 175bp of cumulative hikes over the next six months



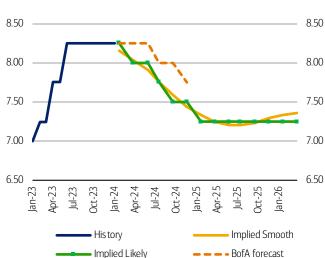
Since the CBT has an unorthodox policy framework, policy rates and band rates do not necessarily match to the front end spot and implied forward rates. This dilutes the priced in curve implications produced for Türkiye. **Source**: BofA Global Research

BofA GLOBAL RESEARCH

9.00

Chart 14: South Africa

Market prices 34bp of cumulative cuts over the next six months
9.00



Source: BofA Global Research

LatAm

Table 14: BRAZIL

Implied Monetary Policy

	Sm	Smooth Path (2)		Marke t (1) Chang	BofA	Most Likely Path (3)		
		Change	Change	e	Change			
Meeting	Rate	Cumul.	Marg.	Marg.	Marg.	Marg.	Prob.(%) (4)	
Curr. Rate	11.75							
31-Jan-24	11.19	-56	-56	-55	-50	-50	75	
20-Mar-24	10.68	-107	-51	-46	-50	-50	72	
8-May-24	10.23	-152	-45	-53	-50	-50	94	
19-Jun-24	9.88	-187	-36	-38	-50	-25	51	
31-Jul-24	9.63	-212	-25	-24	-25	-25	51	
18-Sep-24	9.47	-228	-16	-10	0	-25	89	
6-Nov-24	9.38	-237	-9	-9	0	0	51	
11-Dec-24	9.32	-243	-6	-5	0	-25	72	
29-Jan-25	9.29	-246	-3	-6		0	86	
12-Mar-25	9.28	-247	-1	-1		0	89	
23-Apr-25	9.29	-246	2	0		0	82	
4-Jun-25	9.34	-241	5	5		0	63	
16-Jul-25	9.41	-234	7	16		25	66	
27-Aug-25	9.50	-225	8	-4		0	99	
8-Oct-25	9.62	-213	12	1		0	51	
19-Nov-25	9.79	-196	17	39		25	84	

Basis: -10bp. Basis is the difference between the Cetip rate and the monetary policy rate. Source: BofA Global Research

BofA GLOBAL RESEARCH

Table 15: CHILE Implied Monetary Policy

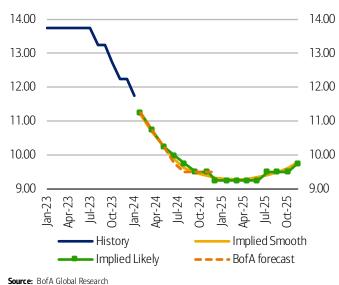
				Marke		Most Likely		
	Smoo	Smooth Path (2)		t (1)	BofA	Pa	th (3)	
		Change		Change	Change	Chan	ge	
Meeting	Rate	Cumu	Mar	Marg.	Marg.	Mar	Prob.(%	
Mccting	Nate	I.	g.	iviai 6.	iviai 6.	g.) (4)	
Curr. Rate	8.25							
31-Jan-24	7.51	-74	-74	-72	-50	-75	95	
2-Apr-24	6.84	-141	-67	-69	-50	-75	65	
23-May-24	6.24	-201	-60	-65	-25	-50	95	
18-Jun-24	5.73	-252	-51	-45	-25	-50	90	
31-Jul-24	5.29	-296	-43	-44	-25	-50	83	
3-Sep-24	4.93	-332	-36	-36	-25	-25	73	
17-Oct-24	4.65	-360	-28	-34	-25	-25	61	
17-Dec-24	4.47	-378	-19	-18	0	-25	86	
31-Jan-25	4.36	-389	-11	-6		-25	57	
2-Apr-25	4.30	-395	-6	-5		0	81	
23-May-25	4.27	-398	-3	-3		0	93	
18-Jun-25	4.25	-400	-1	-1		0	98	
31-Jul-25	4.25	-400	-1	-2		0	99	
3-Sep-25	4.25	-400	0	0		0	99	
17-Oct-25	4.26	-399	1	1		0	98	
17-Dec-25	4.27	-398	1	1		0	93	
31-Jan-26	4.28	-397	2	3		0	87	
2-Apr-26	4.30	-395	1	1		0	82	

Basis: Obp. Basis is the difference between the Midday interbank rate and the monetary policy rate. **Source:** BofA Global Research

BofA GLOBAL RESEARCH

- The market path shows policy rate changes priced in by the market using the raw forward rates derived from the local yield curve.
 The smooth path is constructed by smoothing the market path using the Hodrick-Prescott filter.
 The most likely path rounds the smooth path to the closest feasible rate if the Central Bank changes the rate in discrete steps.
 Displays the probability of the most likely policy change at each meeting, assuming the policy rate was on the most likely path at the previous meeting.

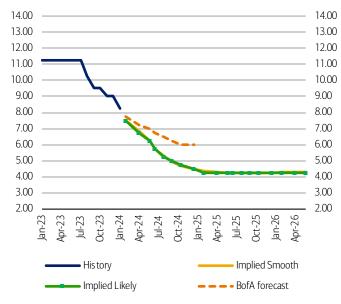
Chart 15: Brazil Market prices 187bp of cumulative cuts over the next six months



BofA GLOBAL RESEARCH

Chart 16: Chile

Market prices 252bp of cumulative cuts over the next six months



Source: BofA Global Research



Table 16: COLOMBIA

Implied Monetary Policy

				Market		Most Likely Path		
	Smooth Path (2)			(1)	BofA	(:	3)	
		Char	1ge	Change	Change	Change	•	
Meeting	Rate	Cumul.	Marg	Marg.	Marg.	Marg.	Prob.(%) (4)	
Curr. Rate	13.00							
31-Jan-24	12.63	-37	-37	-39	-25	-25	53	
29-Mar-24	12.19	-81	-45	-39	-25	-50	74	
27-Apr-24	11.65	-135	-54	-47	-50	-50	60	
28-Jun-24	11.03	-197	-62	-72	-50	-75	89	
27-Jul-24	10.37	-263	-65	-67	-50	-75	50	
28-Sep-24	9.75	-325	-63	-70	-50	-50	99	
26-Oct-24	9.19	-381	-56	-46	-50	-50	76	
14-Dec-24	8.71	-429	-48	-48	-50	-50	83	
25-Jan-25	8.30	-470	-41	-42		-50	81	
29-Mar-25	7.96	-504	-34	-35		-25	84	
27-Apr-25	7.70	-530	-26	-23		-25	79	
28-Jun-25	7.50	-550	-20	-22		-25	98	
27-Jul-25	7.35	-565	-14	-12		-25	59	
28-Sep-25	7.26	-574	-9	-12		0	95	
26-Oct-25	7.22	-578	-4	-3		0	88	
14-Dec-25	7.21	-579	0	-1		0	86	
24-Jan-26	7.23	-577	2	5		0	94	
28-Mar-26	7.26	-574	3	1		0	95	
26-Apr-26	7.29	-571	3	5		0	82	
27-Jun-26	7.32	-568	3	1		0	71	
26-Jul-26	7.35	-565	3	4		0	60	
27-Sep-26	7.37	-563	2	0		0	52	
25-Oct-26	7.39	-561	2	3		25	55	
13-Dec-26	7.40	-560	1	1		0	60	

Basis: -94bp. Basis is the difference between the IBR interbank overnight rate and the monetary policy rate. **Source:** BofA Global Research

BofA GLOBAL RESEARCH

Most Likely Dath

Table 17: MEXICOImplied Monetary Policy

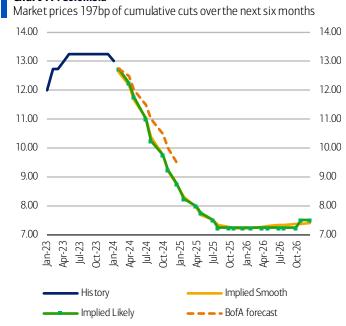
	Smooth Path (2)		(2)	Market (1)	BofA	(3)		
		Cha	_	Change	Change	Change		
Meeting	Rate	Cumul.	Marg	Marg.	Marg.	Marg.	Prob.(%) (4)	
Curr. Rate	11.25							
8-Feb-24	11.20	-5	-5	-1	0	0	78	
21-Mar-24	11.06	-19	-13	-18	0	-25	74	
9-May-24	10.88	-37	-18	-22	0	0	52	
20-Jun-24	10.67	-58	-21	-20	-50	-25	66	
8-Aug-24	10.43	-82	-23	-23	-50	-25	72	
19-Sep-24	10.17	-108	-26	-22	-50	-25	68	
7-Nov-24	9.88	-137	-29	-29	-50	-25	51	
12-Dec-24	9.55	-170	-33	-33	-50	-50	79	
8-Feb-25	9.21	-204	-34	-41		-25	85	
21-Mar-25	8.89	-236	-32	-30		-25	57	
9-May-25	8.61	-264	-28	-28		-50	55	
20-Jun-25	8.37	-288	-24	-23		-25	51	
8-Aug-25	8.18	-307	-19	-20		0	72	
19-Sep-25	8.03	-322	-15	-15		-25	89	
7-Nov-25	7.91	-334	-11	-12		0	66	
12-Dec-25	7.83	-342	-8	-6		-25	68	

Basis: 25bp. Basis is the difference between the 28d TIIE rate and the monetary policy rate.

Source: BofA Global Research

BofA GLOBAL RESEARCH

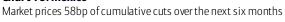
Chart 17: Colombia

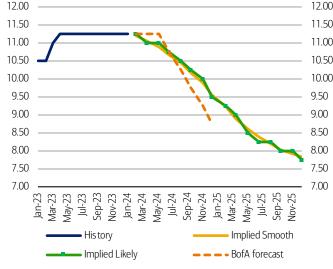


Source: BofA Global Research

BofA GLOBAL RESEARCH

Chart 18: Mexico





Source: BofA Global Research

- 1. The market path shows policy rate changes priced in by the market using the raw forward rates derived from the local yield curve.
- 2. The smooth path is constructed by smoothing the market path using the Hodrick-Prescott filter.
- 3. the most likely path rounds the smooth path to the closest feasible rate if the Central Bank changes the rate in discrete steps.
- 4. Displays the probability of the most likely policy change at each meeting, assuming the policy rate was on the most likely path at the previous meeting.



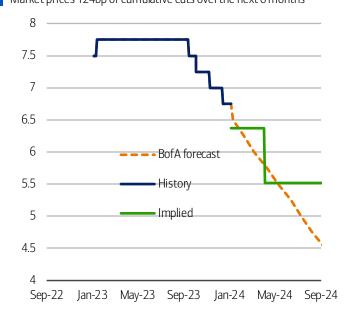
Exhibit 3: Peru Implied Monetary Policy

		Implied		BofA			
Horizon	Rate	Cumul	Marg	Period	Fcst	Cumul	Marg
Curr. Rate	6.75						
3m	6.37	-38	-38	01/11/24	6.50	-25	-25
6m	5.51	-124	-86	02/08/24	6.25	-50	-25
9m	5.52	-123	1	03/07/24	6.00	-75	-25
12m	4.29	-246	-123	04/11/24	5.75	-100	-25
				05/09/24	5.50	-125	-25
				06/13/24	5.25	-150	-25
				07/11/24	5.00	-175	-25
				08/08/24	4.75	-200	-25
				09/12/24	4.50	-225	-25
				10/10/24	4.25	-250	-25
				11/07/24	4.00	-275	-25
				12/12/24	4.00	-275	0
				01/10/25	4.00	-275	0

Source: BofA Global Research Estimates, Bloomberg

BofA GLOBAL RESEARCH

Chart 19: PeruMarket prices 124bp of cumulative cuts over the next 6 months



Source: BofA Global Research Estimates, Bloomberg

BofA GLOBAL RESEARCH

Special Disclosures

Some of the securities discussed herein should only be considered for inclusion in accounts qualified for high risk investment.

Disclosures

Important Disclosures

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

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

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

Other Important Disclosures

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

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

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

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

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

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

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

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 Prudential 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 (Australia): Merrill Lynch (Hong Kong): Merrill (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSFC); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch (Canada): Merrill Lynch (Canada): Merrill Lynch (Mexico): Merrill Ly 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 Initiation investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entitives entities entity acting for and on behalf of your services

This information has been prepared and issued by BofAS and/or one or more of its non-US affiliates. The author(s) of this information may not be licensed to carry on regulated activities in your jurisdiction and, if not licensed, do not hold themselves out as being able to do so. BofAS and/or MLPF&S is the distributor of this information in the US and accepts full responsibility for information distributed to BofAS and/or MLPF&S clients in the US by its non-US affiliates. Any US person receiving this information and wishing to effect any transaction in any security

discussed herein should do so through BofAS and/or MLPF&S and not such foreign affiliates. Hong Kong recipients of this information should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this information. Singapore recipients of this information should contact Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this information. For clients that are not accredited investors, expert investors or institutional investors Merrill Lynch (Singapore) Pte Ltd accepts full responsibility for the contents of this information distributed to such clients in Singapore.

General Investment Related Disclosures:

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

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

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

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

Certain investment strategies and financial instruments discussed herein may only be appropriate for consideration in accounts qualified for high risk investment.

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

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

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

Copyright and General Information:

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

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

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

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

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

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

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with BofAS or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Securities nor any officer or employee of BofA Securities accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this



information.

