

KB Financial Group

Sticking to the commitment for a steady rise in total shareholder returns

Reiterate Rating: BUY | PO: 83,000 KRW | Price: 64,700 KRW

Big upfront cost recognition exerts pressure on earnings

KB Financial Group posted 4Q23 net profit of W262bn, down 81% QoQ and lower than Bloomberg consensus of W507bn and our estimate of W369bn. Several unusual items were behind KB's earnings miss, with national service for small merchants in the form of interest refunds, costs for employee early retirement packages, and pre-emptive loan-loss provisioning, which in total amounted to slightly more than W1tn on an after-tax basis. Adjusting for the unusual items, we estimate KB's 4Q23 net profit would have been about W1.3tn. Given the heavy upfront cost recognition, we see less headwind for earnings in 2024. KB also announced a W320bn buyback over the next six months with plans to cancel. We estimate that KB's total shareholder return rose to 37% in 2023 from 28% in 2022, and a visible increase infuses confidence to project that the ratio will steadily rise. We reiterate our Buy rating on KB – remains our top pick.

Weak earnings well-flagged, should not be a surprise

Despite the depressing quarterly earnings figures, this has been well-flagged to investors by Korean banks during late-2023 as the banks decided to set aside national service packages to reduce the burden on small merchants, in addition to strong demand from the regulators to be as conservative as possible in evaluating potential loan losses. In our view, underlying asset quality seems to be well managed with new delinquencies looking stable and believe investors should look more towards a rebound in 2024E earnings, along with more confidence on higher shareholder return.

Fine-tune earnings estimates; raise PO

We fine-tune our estimates but raise our PO to W83,000 (US\$63.85) from W75,000 (US\$57.7), as we lift our target '24E P/B multiple to 0.54x from 0.46x, assuming 9.3% RoE (earlier 8.7%), 10% cost of equity, 2% terminal growth, and 32% discount to RoE (from 35%). We lower the RoE discount, in line with the discount applied historically during economic recovery scenarios since 2005, given the rebound in exports.

Estimates (Dec) (W)	2022A	2023A	2024E	2025E	2026E
Net Income (Adjusted - bn)	3,986	4,464	4,849	5,357	5,535
EPS	9,993	11,563	13,101	15,353	16,955
EPS Change (YoY)	-7.9%	15.7%	13.3%	17.2%	10.4%
Dividend / Share	2,950	3,098	3,160	3,226	3,286
ADR EPS (US\$)	7.74	8.85	9.87	11.56	12.77
ADR Dividend / Share (US\$)	2.28	2.37	2.38	2.43	2.47
Valuation (Dec)					
P/E	6.5x	5.6x	4.9x	4.2x	3.8x
Dividend Yield	4.56%	4.79%	4.88%	4.99%	5.08%
Pre-exceptional PE	5.51x	4.20x	4.90x	4.22x	3.84x
Price / Book	0.494x	0.459x	0.435x	0.413x	0.393x
RoE / PB	16.64%	18.40%	19.72%	21.72%	22.39%
Price / Pre-Provision Profit	3.64x	2.61x	2.57x	2.35x	2.14x

08 February 2024

Equity

Key Changes

(W)	Previous	Current
Price Obj.	75,000.00	83,000.00
2024E EPS	12,868.72	13,100.80
2025E EPS	15,088.92	15,353.23
2026E EPS	16,653.86	16,955.34

Jeehoon Park >>
Research Analyst
Merrill Lynch (Seoul)
+82 2 3707 0532
jeehoon.park@bofa.com

Jisun Lee >>
Research Analyst
Merrill Lynch (Seoul)
+82 2 3707 0418
jisun.lee@bofa.com

Stock Data

Price (Common / ADR)	64,700 KRW / 47.28 USD
Price Objective	83,000 KRW / 63.85 USD
Date Established	8-Feb-2024 / 8-Feb-2024
Investment Opinion	B-1-7 / B-1-7
52-Week Range	46,150 KRW-66,500 KRW
Market Value (mn)	19,663 USD
Market Value (mn)	26,107,166 KRW
Shares Outstanding (mn)	403.5 / 403.5
Average Daily Value (mn)	80.25 USD
Free Float	75.4%
BofA Ticker / Exchange	XKGBF / KSC
BofA Ticker / Exchange	KB / NYS
Bloomberg / Reuters	105560 KS / 105560.KS
ROE (2024E)	8.6%

Acronyms:

TSR: Total Shareholder Return

>> 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 6 to 9. Analyst Certification on page 4. Price Objective Basis/Risk on page 4.

12656558

Timestamp: 07 February 2024 03:30PM EST

iQprofileSM KB Financial Group

Key Income Statement Data (Dec)

(W Billions)

	2022A	2023A	2024E	2025E	2026E
Net Interest Income	11,393	12,142	12,333	12,604	13,183
Net Fee Income	3,515	3,674	3,564	3,603	3,584
Securities Gains / (Losses)	NA	NA	NA	NA	NA
Other Income	-1,170	414	636	947	976
Total Non-Interest Income	2,345	4,087	4,200	4,550	4,560
Total Operating Income	13,738	16,229	16,533	17,154	17,743
Operating Expenses	(6,644)	(6,647)	(7,203)	(7,533)	(7,880)
Pre-Provision Profit	7,094	9,582	9,330	9,621	9,863
Provisions Expense	(1,848)	(3,146)	(2,050)	(1,650)	(1,650)
Operating Profit	5,247	6,435	7,280	7,971	8,213
Non-Operating Income	161	-265	-400	-400	-400
Pre-Tax Income	5,407	6,170	6,880	7,571	7,813
Net Income to Comm S/Hold.	4,122	4,632	5,017	5,525	5,703
Adjusted Net Income (Operating)	3,986	4,464	4,849	5,357	5,535

Key Balance Sheet Data

Total Assets	688,665	715,738	743,640	777,311	812,868
Average Interest Earning Assets	732,885	790,213	826,414	863,307	902,645
Weighted Risk Assets	302,984	322,057	336,785	352,186	368,291
Total Gross Customer Loans	433,039	444,805	465,146	486,417	508,661
Total Customer Deposits	393,929	406,512	425,102	444,542	464,871
Tier 1 Capital	45,032	49,450	52,052	54,800	57,575
Tangible Equity	52,286	56,922	59,967	63,149	66,356
Common Shareholders' Equity	52,864	56,930	59,989	63,220	66,483

Key Metrics

Net Interest Margin	1.55%	1.54%	1.49%	1.46%	1.46%
Tier 1 Ratio	14.9%	15.4%	15.5%	15.6%	15.6%
Effective Tax Rate	27.9%	26.0%	26.5%	26.5%	26.5%
Loan / Assets Ratio	62.9%	62.1%	62.5%	62.6%	62.6%
Loan / Deposit Ratio	109.9%	109.4%	109.4%	109.4%	109.4%
Oper Leverage (Inc Growth - Cost Growth)	2.6%	18.1%	-6.5%	-0.8%	-1.2%
Gearing (Assets / Equity)	13.0x	12.6x	12.4x	12.3x	12.2x
Tangible Common Equity / Assets	7.6%	8.0%	8.1%	8.1%	8.2%
Tangible Common Equity / WRAs	17.3%	17.7%	17.8%	17.9%	18.0%
Revenue Growth	-5.1%	18.1%	1.9%	3.8%	3.4%
Operating Expense Growth	-7.7%	0.1%	8.4%	4.6%	4.6%
Provisions Expense Growth	55.9%	70.3%	-34.8%	-19.5%	0%
Operating Revenue / Average Assets	2.0%	2.3%	2.3%	2.3%	2.2%
Operating Expenses / Average Assets	1.0%	0.9%	1.0%	1.0%	1.0%
Pre-Provision ROA	1.0%	1.4%	1.3%	1.3%	1.2%
ROA	0.6%	0.6%	0.7%	0.7%	0.7%
Pre-Provision ROE	15.2%	19.1%	17.5%	17.0%	16.5%
ROE	8.2%	8.4%	8.6%	9.0%	8.8%
RoTE	7.6%	7.8%	8.1%	8.5%	8.3%
RoWRAs	1.3%	1.4%	1.4%	1.5%	1.5%
Dividend Payout Ratio	27.9%	25.2%	22.7%	19.8%	18.2%
Efficiency Ratio (Cost / Income Ratio)	48.4%	41.0%	43.6%	43.9%	44.4%
Total Non-Interest Inc / Operating Inc	17%	25%	25%	27%	26%
Market-Related Revenue / Total Revenues	0%	0%	0%	0%	0%
Provisioning Burden as % of PPP	26.0%	32.8%	22.0%	17.1%	16.7%
NPLs plus Foreclosed Real Estate / Loans	0.3%	0.6%	0.6%	0.6%	0.6%
Loan Loss Reserves / NPLs	216.3%	174.6%	174.6%	174.6%	174.6%
Loan Loss Reserves / Total Loans	0.7%	1.0%	1.0%	1.0%	1.0%
Provisions Expense / Average Loans	0.4%	0.7%	0.5%	0.3%	0.3%

Other Metrics

(W Thousands)

Income / Employee	94,222	116,153	132,064	145,321	150,488
(Operating Expenses) / Employee	(119,315)	(119,981)	(130,663)	(137,339)	(144,381)
Pre-Provision Profit / Employee	127,405	172,943	169,251	175,403	180,721
Net Profit / Employee	71,594	80,578	87,968	97,666	101,418

Company Sector

Financial Services-Consumer/Commercial

Company Description

KB Financial Group was established in Sep 2008 as a financial holding company for its major subsidiary, Kookmin Bank, which is the largest bank in Korea with 30mn retail customers. KBFG also has 12 other non-banking subsidiaries, including KB Insurance, KB Securities, KB Kookmin Card, KB Capital, etc. Earnings contribution from non-banking affiliates amounts to 30-40% of the group's total net income. NPS is currently the largest stakeholder.

Investment Rationale

We rate KBFG as a Buy given our view that (1) the stock is trading at overly discounted valuations even though we see limited downside to earnings, (2) KB is the leader in shareholder returns in the Korean banking sector and we expect this to continue, with the group having been the first banking group to implement share buybacks and cancel shares, and (3) KB has strong non-banking subsidiaries to complement the banking business, giving the company a more balanced portfolio of businesses.

Stock Data

Shares / ADR	1.00
Price to Book Value	0.4x

Key Changes

(US\$)	Previous	Current
Price Obj.	57.69	63.85
2024E EPS	9.69	9.87
2025E EPS	11.36	11.56
2026E EPS	12.54	12.77

A temporary dip in quarterly earnings

Pre-emptive cost recognitions to support future earnings

Exhibit 1: Steep drop in earnings due to large, unusual items

KB's quarterly results summary

INCOME STATEMENT	4Q22A	1Q23A	2Q23A	3Q23A	4Q23A	QoQ	YoY	4Q23 BofAe	Consensus
Net Interest Income	2,993	2,786	2,974	3,088	3,295	6.7%	10.1%	3,088	
Non-Interest Income	290	1,574	1,324	879	311	-64.6%	7.4%	400	
SG&A	2,084	1,566	1,593	1,565	1,924	22.9%	-7.7%	2,165	
PPOP	1,199	2,793	2,704	2,402	1,682	-29.9%	40.4%	1,323	
Provisions	1,059	668	651	449	1,378	207.2%	30.1%	600	
OP	140	2,125	2,053	1,953	304	-84.4%	118.1%	723	
Non-Operating Income	(155)	(96)	(92)	(43)	(33)	n/a	n/a	(200)	
Taxes	130	530	456	568	54	-90.5%	-58.7%	144	
Minority	(229)	2	6	(32)	(44)	n/a	n/a	10	
Net Profit	83	1,498	1,499	1,374	262	-81.0%	213.5%	369	507

Source: BofA Global Research estimates, company report, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 2: Margin stability, highest CET1

KB's quarterly key ratios

KEY RATIOS	4Q22A	1Q23A	2Q23A	3Q23A	4Q23A
KRW Loan Growth QoQ	0.0%	-0.6%	1.1%	1.8%	1.6%
NIM (Quarterly)	1.99%	2.04%	2.10%	2.09%	2.08%
Cost-Income Ratio	63%	36%	37%	39%	53%
Credit Cost	0.99%	0.63%	0.62%	0.42%	1.27%
NPL Ratio	0.34%	0.43%	0.44%	0.48%	0.57%
NPL Coverage Ratio	216%	196%	200%	180%	175%
Delinquency Ratio	0.16%	0.20%	0.23%	0.25%	0.22%
CET1 Ratio	13.24%	13.66%	13.80%	13.74%	13.58%

Source: BofA Global Research, company report

BofA GLOBAL RESEARCH

Exhibit 3: Fine-tune earnings estimates

Earnings estimate revisions

	2024E Old	2024E New	% chg	2025E Old	2025E New	% chg	2026E Old	2026E New	% chg
Operating Revenue	16,422	16,533	0.7%	17,035	17,154	0.7%	17,616	17,743	0.7%
Net Interest Income	12,222	12,333	0.9%	12,485	12,604	1.0%	13,056	13,183	1.0%
Non-Interest Income	4,200	4,200	0.0%	4,550	4,550	0.0%	4,560	4,560	0.0%
SG&A	7,203	7,203	0.0%	7,533	7,533	0.0%	7,880	7,880	0.0%
Loan Loss Provisions	2,050	2,050	0.0%	1,650	1,650	0.0%	1,650	1,650	0.0%
Net Profit	4,935	5,017	1.7%	5,437	5,525	1.6%	5,609	5,703	1.7%

Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Price objective basis & risk

KB Financial Group (XKBGF / KB)

We derive our price objective of ₩83,000 (\$63.85) using a target P/B multiple of 0.54x derived by the Gordon Growth Model. Our assumptions are 9.3% sustainable RoE (from 24-month average return on equity-RoE), 10% cost of equity, and 2% terminal growth. We then apply a 32% discount to the sustainable RoE assumption, derived by regression analysis of historical RoE discount assuming the same cost of equity and terminal growth, combined with our view of the economic cycle.

Upside risks to our price objective are (1) higher interest rates leading to further expansion of NIM, (2) stronger revenues from non-bank affiliates and (3) regulators becoming supportive of bigger shareholder returns.

Downside risks are (1) economic slowdown leading to higher credit cost (2) lower revenues from non-bank affiliates due to increased market risk, (3) economic slowdown resulting in lower rates and lower NIM, and (4) stronger demands for social contribution due to pressure on economic entities from high inflation.

Analyst Certification

We, Jeehoon Park and Jisun Lee, hereby certify that the views each of us has expressed in this research report accurately reflect each of our respective personal views about the subject securities and issuers. We also certify that no part of our respective compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

Special Disclosures

Korea imposes a capital gains tax on non-resident investors in Korean securities of the lesser of 22% of the net gain or 11% of the gross sales proceeds unless the investor is either (1) resident in a country which has a double tax treaty with Korea that exempts the investor's capital gains from Korean tax or (2) the shares sold are sold through the Korea Stock exchange or KOSDAQ exchange and the seller (including related parties) has not owned 25% or more of the shares of the issuer at any time during the year of sale plus the 5 calendar years preceding the year of sale. Investors should seek their own tax advice.

Korea - Financials Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	DB Insurance	DGBUF	005830 KS	Jeehoon Park
	Hana Financial Group	HNFGF	086790 KS	Jeehoon Park
	Hyundai Marine & Fire	HYMRF	001450 KS	Jeehoon Park
	KakaoBank Corp	XDFSF	323410 KS	Jeehoon Park
	Kakaopay Corp	XDISF	377300 KS	Jeehoon Park
	KB Financial Group	XKBGF	105560 KS	Jeehoon Park
	KB Financial Group	KB	KB US	Jeehoon Park
	Samsung Fire & Marine	SZVZF	000810 KS	Jeehoon Park
	Samsung Life Insurance	SSMMF	032830 KS	Jeehoon Park
	Shinhan Financial Group	SFLGF	055550 KS	Jeehoon Park
	Shinhan Financial Group	SHG	SHG US	Jeehoon Park
	Woori Financial Group	XSLOF	316140 KS	Jeehoon Park
	Woori Financial Group	WF	WF US	Jeehoon Park
NEUTRAL				
	JB Financial Group	XMJFF	175330 KS	Jeehoon Park
UNDERPERFORM				
	BNK Financial Group	XSBFF	138930 KS	Jeehoon Park
	DGB Financial Group	DGBFF	139130 KS	Jeehoon Park

Korea - Financials Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	Industrial Bank of Korea	IBOKF	024110 KS	Jeehoon Park

iQmethodSM Measures Definitions

Business Performance

Return On Capital Employed

Return On Equity
Operating Margin
Earnings Growth
Free Cash Flow

Quality of Earnings

Cash Realization Ratio
Asset Replacement Ratio
Tax Rate
Net Debt-To-Equity Ratio
Interest Cover

Valuation Toolkit

Price / Earnings Ratio
Price / Book Value
Dividend Yield
Free Cash Flow Yield
Enterprise Value / Sales

EV / EBITDA

Numerator

NOPAT = (EBIT + Interest Income) × (1 – Tax Rate) + Goodwill Amortization

Net Income
Operating Profit
Expected 5 Year CAGR From Latest Actual
Cash Flow From Operations – Total Capex

Numerator

Cash Flow From Operations
Capex
Tax Charge
Net Debt = Total Debt – Cash & Equivalents
EBIT

Numerator

Current Share Price
Current Share Price
Annualised Declared Cash Dividend
Cash Flow From Operations – Total Capex
EV = Current Share Price × Current Shares + Minority Equity + Net Debt +
Other LT Liabilities
Enterprise Value

Denominator

Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill
Amortization
Shareholders' Equity
Sales
N/A
N/A

Denominator

Net Income
Depreciation
Pre-Tax Income
Total Equity
Interest Expense

Denominator

Diluted Earnings Per Share (Basis As Specified)
Shareholders' Equity / Current Basic Shares
Current Share Price
Market Cap = Current Share Price × Current Basic Shares
Sales

Basic EBIT + Depreciation + Amortization

iQmethodSM is the set of BofA Global Research standard measures that serve to maintain global consistency under three broad headings: Business Performance, Quality of Earnings, and validations. The key features of iQmethod are: A consistently structured, detailed, and transparent methodology. Guidelines to maximize the effectiveness of the comparative valuation process, and to identify some common pitfalls.

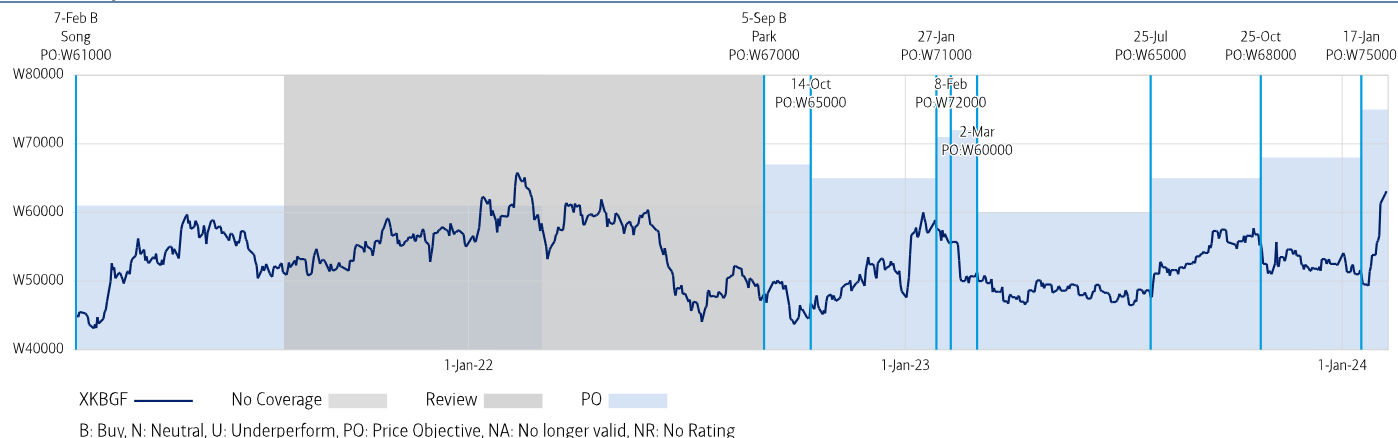
iQdatabase[®] is our real-time global research database that is sourced directly from our equity analysts' earnings models and includes forecasted as well as historical data for income statements, balance sheets, and cash flow statements for companies covered by BofA Global Research.

iQprofileSM, iQmethodSM are service marks of Bank of America Corporation. iQdatabase[®] is a registered service mark of Bank of America Corporation.

Disclosures

Important Disclosures

KB Financial Group (XKBGF) Price Chart



The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

KB Financial Group (KB) Price Chart



The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

Equity Investment Rating Distribution: Financial Services Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	156	53.79%	Buy	94	60.26%
Hold	72	24.83%	Hold	48	66.67%
Sell	62	21.38%	Sell	35	56.45%

Equity Investment Rating Distribution: Global Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	1895	53.62%	Buy	1083	57.15%
Hold	832	23.54%	Hold	454	54.57%
Sell	807	22.84%	Sell	383	47.46%

^{R1} Issuers that were investment banking clients of BofA Securities or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.

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 ^{R2}
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

^{R2}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.

Price Charts for the securities referenced in this research report are available on the [Price Charts website](#), or call 1-800-MERRILL to have them mailed.

BofAS or one of its affiliates acts as a market maker for the equity securities recommended in the report: KB Financial Group.

The issuer is or was, within the last 12 months, an investment banking client of BofAS and/or one or more of its affiliates: KB Financial Group.

BofAS or an affiliate has received compensation from the issuer for non-investment banking services or products within the past 12 months: KB Financial Group.

The issuer is or was, within the last 12 months, a non-securities business client of BofAS and/or one or more of its affiliates: KB Financial Group.

BofAS or an affiliate has received compensation for investment banking services from this issuer within the past 12 months: KB Financial Group.

BofAS or an affiliate expects to receive or intends to seek compensation for investment banking services from this issuer or an affiliate of the issuer within the next three months: KB Financial Group.

BofAS or one of its affiliates is willing to sell to, or buy from, clients the common equity of the issuer on a principal basis: KB Financial Group.

The issuer is or was, within the last 12 months, a securities business client (non-investment banking) of BofAS and/or one or more of its affiliates: KB Financial Group.

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 HKSCF; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by BofA 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 BofA 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. BofA and/or MLPF&S is the distributor of this information in the US and accepts full responsibility for information distributed to BofA 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 BofA 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.

BofA or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. BofA 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 BofA for the provision of research services for a separate fee, and in connection therewith BofA may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom BofA has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by BofA). If such recipient uses the services of BofA in connection with the sale or purchase of a security referred to herein, BofA may act as principal for its own account or as agent for another person. BofA 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 BofA or 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.

Subject to the quiet period applicable under laws of the various jurisdictions in which we distribute research reports and other legal and BofA Securities policy-related restrictions on the publication of research reports, fundamental equity reports are produced on a regular basis as necessary to keep the investment recommendation current.

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.

