

Shinhan Financial Group

Conservative provisioning in 4Q; remains committed to higher shareholder returns

Reiterate Rating: BUY | PO: 51,000 KRW | Price: 44,150 KRW

4Q23: Weak earnings due to multiple unusual items

Shinhan Financial Group posted 4Q23 net profit of W550bn, down 54% QoQ and lower than Bloomberg consensus of W641bn, although above our estimate of W490bn. This was a quarter with several unusual items, including the cost for early retirement program and national service packages, conservative valuation loss on investment asset and preemptive provisioning, which in total amounted to slightly more than W1tn on a pre-tax basis. Adjusting for the unusual items, we estimate Shinhan's 4Q23 net profit would have been about W1.3tn. As Shinhan's management highlighted in the earnings call, we believe the heavy upfront cost recognition will pose less burden on 2024 earnings. In our view, Shinhan's total shareholder return of 36% in 2023, which is 7% higher than that of 2022, along with a W150bn buyback announcement in 1Q24, offers better visibility for a steady rise in shareholder returns. We reiterate our Buy rating.

Management confident on shareholder returns

Shinhan's management said that strong commitment, consistent execution, and financial stability were the key forces driving the total shareholder return of 36%. Management also made it clear that they will focus on enhancing the size of dividend as well as the share buyback on an annual basis and manage their CET1 ratio of at least 13% in 2024. Their confidence suggests that management is more optimistic on the business outlook.

Fine-tune earnings estimates; raise PO to W51,000

We fine-tune our estimates but raise our PO to W51,000 (US\$39.2) from W45,000 (US\$34.6), as we lift our target P/B multiple to 0.48x from 0.41x, assuming 8.1% RoE (earlier 8.0%), 10% cost of equity, 2% terminal growth, and 28% discount to RoE (from 34%). 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)	4,509	4,204	4,081	4,462	4,604
EPS	8,498	8,200	8,167	9,187	9,789
EPS Change (YoY)	16.5%	-3.5%	-0.4%	12.5%	6.6%
Dividend / Share	2,065	2,100	2,160	2,240	2,340
ADR EPS (US\$)	6.58	6.28	6.15	6.92	7.37
ADR Dividend / Share (US\$)	1.60	1.61	1.63	1.69	1.76
Valuation (Dec)					
P/E	5.2x	5.4x	5.4x	4.8x	4.5x
Dividend Yield	4.68%	4.76%	4.89%	5.07%	5.30%
Pre-exceptional PE	4.52x	3.52x	5.28x	4.72x	4.44x
Price / Book	0.446x	0.421x	0.401x	0.382x	0.365x
RoE / PB	21.33%	19.85%	19.17%	20.89%	21.51%
Price / Pre-Provision Profit	3.24x	2.71x	2.78x	2.65x	2.51x

12 February 2024

Equity

Key Changes		
(W)	Previous	Current
Price Obj.	45,000.00	51,000.00
2024E EPS	8,044.32	8,166.68
2025E EPS	9,275.97	9,186.88
2026E EPS	9,934.57	9,789.19

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)	44,150 KRW / 32.94 USD
Price Objective	51,000 KRW / 39.23 USD
Date Established	12-Feb-2024 / 12-Feb-2024
Investment Opinion	A-1-7 / B-1-7
52-Week Range	32,400 KRW-45,450 KRW
Market Value (mn)	17,044 USD
Market Value (mn)	22,638,331 KRW
Shares Outstanding (mn)	512.8 / 512.8
Average Daily Value (mn)	63.37 USD
Free Float	87.0%
BofA Ticker / Exchange	SFLGF / KSC
BofA Ticker / Exchange	SHG / NYS
Bloomberg / Reuters	055550 KS / 055550.KS
ROE (2024E)	7.7%

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.

>> 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.

iQprofile[™] Shinhan Financial Group

Key Income Statement Data (Dec)	2022A	2023A	2024E	2025E	2026E
(W Billions)					
Net Interest Income	10,597	10,818	11,109	11,381	11,894
Net Fee Income	2,418	2,647	2,507	2,585	2,553
Securities Gains / (Losses)	NA 140	NA	NA	NA 1015	NA
Other Income	-148	782	893	1,015	1,047
Total Non-Interest Income	2,271	3,430	3,400	3,600	3,600
Total Operating Income	12,868	14,247	14,509	14,981	15,494
Operating Expenses Pre-Provision Profit	(5,644)	(5,895)	(6,584)	(6,888)	(7,207)
	7,223	8,352	7,926	8,094	8,287
Provisions Expense	(1,318)	(2,251)	(1,850)	(1,500)	(1,500)
Operating Profit Non-Operating Income	5,906	6,101	6,076	6,594	6,787
Pre-Tax Income	461 6,367	-136	-150 5,926	-150 6,444	-150 6,637
Net Income to Comm S/Hold.	4,666	5,965 4,368	4,235	4,616	4,758
Adjusted Net Income (Operating)	4,509	4,204	4,233 4,081	4,010 4,462	4,730
	4,509	4,204	4,001	4,402	4,004
Key Balance Sheet Data	CC 4 422	CO1 70F	720 102	751 256	705 (21
Total Assets	664,433	691,795	720,182	751,256	785,621
Average Interest Earning Assets	740,237	792,847 315,306	834,483	871,217	910,268
Weighted Risk Assets Total Gross Customer Loans	291,543	,	329,725	344,803	360,571
Total Customer Deposits	410,288	413,498	432,407	452,181 417,204	472,859 436,282
Tier 1 Capital	382,988 43,267	381,513 46,515	398,959 48,839	51,277	53,705
Tangible Equity	43,207 47,616	50,104	52,705	55,406	58,040
Common Shareholders' Equity	50,732	53,721	56,414	59,246	62,066
, ,	55,752	00,	20,	22,210	0_,000
Key Metrics	1.43%	1.36%	1.33%	1.31%	1.31%
Net Interest Margin Tier 1 Ratio					
	14.8% 25.3%	14.8% 24.9%	14.8% 26.5%	14.9% 26.5%	14.9% 26.5%
Effective Tax Rate Loan / Assets Ratio		59.8%		60.2%	60.2%
Loan / Deposit Ratio	61.8% 107.1%	108.4%	60.0% 108.4%	108.4%	108.4%
Oper Leverage (Inc Growth - Cost Growth)	3.1%	6.3%	-9.8%	-1.4%	-1.2%
Gearing (Assets / Equity)	13.1x	12.9x	12.8x	12.7x	12.7x
Tangible Common Equity / Assets	7.2%	7.2%	7.3%	7.4%	7.4%
Tangible Common Equity / WRAs	16.3%	15.9%	16.0%	16.1%	16.1%
Revenue Growth	1.4%	10.7%	1.8%	3.3%	3.4%
Operating Expense Growth	-1.7%	4.5%	11.7%	4.6%	4.6%
Provisions Expense Growth	32.3%	70.8%	-17.8%	-18.9%	0%
Operating Revenue / Average Assets	2.0%	2.1%	2.1%	2.0%	2.0%
Operating Expenses / Average Assets	0.9%	0.9%	0.9%	0.9%	0.9%
Pre-Provision ROA	1.1%	1.2%	1.1%	1.1%	1.1%
ROA	0.7%	0.6%	0.6%	0.6%	0.6%
Pre-Provision ROE	16.0%	17.4%	15.5%	15.0%	14.6%
ROE	9.5%	8.4%	7.7%	8.0%	7.8%
RoTE	9.5%	8.4%	7.7%	8.1%	7.9%
RoWRAs	1.5%	1.3%	1.2%	1.3%	1.3%
Dividend Payout Ratio	22.6%	24.7%	25.8%	23.9%	23.5%
Efficiency Ratio (Cost / Income Ratio)	43.9%	41.4%	45.4%	46.0%	46.5%
Total Non-Interest Inc / Operating Inc	18%	24%	23%	24%	23%
Market-Related Revenue / Total Revenues	0%	0%	0%	0%	0%
Provisioning Burden as % of PPP	18.2%	27.0%	23.3%	18.5%	18.1%
NPLs plus Foreclosed Real Estate / Loans	0.4%	0.5%	0.5%	0.5%	0.5%
Loan Loss Reserves / NPLs	209.2%	183.9%	183.9%	183.9%	183.9%
Loan Loss Reserves / Total Loans	0.8%	1.0%	1.0%	1.0%	1.0%
Provisions Expense / Average Loans	0.3%	0.5%	0.4%	0.3%	0.3%
Other Metrics					
(W Thousands)					22024
(W Thousands) Income / Employee	194,745	202,196	202,372	220,731	228,344
Income / Employee	194,745 (186,125)	202,196 (195,385)	(219,292)	(230,577)	
(W Thousands) Income / Employee (Operating Expenses) / Employee Pre-Provision Profit / Employee					228,344 (242,481) 278,811

Company Sector

Financial Services-Consumer/Commercial

Company Description

Shinhan Financial Group was established in 2001, and currently one of the largest financial groups in Korea in terms of total asset size. SFG has 13 affiliates, including 2 banks (Shinhan Bank, Jeju Bank) and 11 non-banking arms (Shinhan Card, Shinhan Investment Corp., Shinhan Life, etc). The group has the most well-diversified business portfolio, with its non-banking arms contributing 35-40% of total net income. NPS is the majority stakeholder.

Investment Rationale

We rate SFG as a Buy given our view that (1) Shinhan's commitment to a steady shareholder return plan should accompany ongoing buybacks and cancellations, boosting EPS and BVPS growth, and (2) Shinhan's diversified business mix should give the company better earnings stability even when rates are in a declining environment.

Stock Data	
Shares / ADR	1.00
Price to Book Value	0.4x

Key Changes		
(US\$)	Previous	Current
Price Obj.	34.62	39.23
2024E EPS	6.06	6.15
2025E EPS	6.98	6.92
2026E EPS	7.48	7.37



Earnings weak on heavy cost recognition Enough buffer to support future earnings

Exhibit 1: Earnings miss on heavy loan loss provisions

Shinhan's quarterly results summary

INCOME STATEMENT	1Q22A	2Q22A	4Q22A	1Q23A	2Q23A	3Q23A	4Q23A	QoQ	YoY	4Q23 BofAe Consensus
Net Interest Income	2,491	2,608	2,765	2,574	2,694	2,763	2,787	0.8%	0.8%	2,762
Non-Interest Income	883	790	55	999	1,033	913	484	-47.0%	781.0%	500
SG&A	1,246	1,323	1,774	1,356	1,443	1,498	1,599	6.8%	-9.9%	1,905
PPOP	2,128	2,075	1,046	2,217	2,285	2,179	1,671	-23.3%	59.8%	1,357
Provisions	243	358	466	461	548	475	767	61.4%	64.6%	500
OP	1,885	1,717	580	1,756	1,736	1,704	904	-46.9%	55.9%	857
Non-Operating Income	25	63	(110)	101	(8)	(114)	(115)	n/a	n/a	(150)
Taxes	505	463	84	442	460	372	213	-42.6%	153.0%	187
Minority	20	19	27	26	31	27	26	-1.7%	-2.3%	30
Net Profit	1,385	1,298	359	1,388	1,238	1,192	550	-53.9%	53.2%	490 641

Source: BofA Global Research estimates, company report, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 2: Steady rise of CET1 along with good margin protection

Shinhan's quarterly key ratios

KEY RATIOS	1Q22A	2Q22A	4Q22A	1Q23A	2Q23A	3Q23A	4Q23A
KRW Loan Growth QoQ	0.5%	1.5%	1.0%	0.0%	0.6%	1.1%	1.4%
NIM (Quarterly)	1.89%	1.98%	1.98%	1.94%	2.00%	1.99%	1.97%
Cost-Income Ratio	37%	39%	63%	38%	39%	41%	49%
Credit Cost	0.26%	0.37%	0.47%	0.47%	0.57%	0.49%	0.78%
NPL Ratio	0.37%	0.38%	0.41%	0.48%	0.52%	0.52%	0.56%
NPL Coverage Ratio	209%	209%	209%	193%	183%	183%	184%
Delinquency Ratio	0.21%	0.19%	0.21%	0.27%	0.27%	0.28%	0.26%
CET1 Ratio	13.02%	12.73%	12.79%	12.68%	12.99%	12.92%	13.13%

Source: BofA Global Research, company report

BofA GLOBAL RESEARCH

Exhibit 4: Fine-tune earnings estimates

Earnings estimate revisions

	2024E Old 20	024E New ^o	% chg	2025E Old 2	025E New '	% chg	2026E Old 2	026E New	% chg
Operating Revenue	14,430	14,509	0.6%	15,022	14,981	-0.3%	15,542	15,494	-0.3%
Net Interest Income	11,030	11,109	0.7%	11,422	11,381	-0.4%	11,942	11,894	-0.4%
Non-Interest Income	3,400	3,400	0.0%	3,600	3,600	0.0%	3,600	3,600	0.0%
SG&A	6,599	6,584	-0.2%	6,904	6,888	-0.2%	7,224	7,207	-0.2%
Loan Loss Provisions	1,850	1,850	0.0%	1,500	1,500	0.0%	1,500	1,500	0.0%
Net Profit	4,166	4,235	1.7%	4,634	4,616	-0.4%	4,781	4,758	-0.5%

Source: BofA Global Research estimates

BofA GLOBAL RESEARCH



Price objective basis & risk

Shinhan Financial Group (SFLGF / SHG)

We derive our price objective of W51,000 (\$39.23) using a target P/B multiple of 0.48x derived by the Gordon Growth Model. Our assumptions are a 8.3% sustainable RoE (from 24M average RoE), 10% cost of equity, and 2% terminal growth. We then apply a 28% 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.

The downside risks are (1) economic slowdown leading to higher credit cost (2) lower revenues from non-bank affiliates due to increased market risk, (3) EPS dilutive M&A, 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	XMXFF	175330 KS	Jeehoon Park
UNDERPERFORM				
	BNK Financial Group	XSBFF	138930 KS	Jeehoon Park
	DGB Financial Group	DGBFF	139130 KS	Jeehoon Park
	Industrial Bank of Korea	IBOKF	024110 KS	Jeehoon Park



*IQ*method[™] Measures Definitions

Business Performance	Numerator	Denominator
Return On Capital Employed	NOPAT = (EBIT + Interest Income) × (1 - Tax Rate) + Goodwill Amortization	Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill Amortization
Return On Equity	Net Income	Shareholders' Equity
Operating Margin	Operating Profit	Sales
Earnings Growth	Expected 5 Year CAGR From Latest Actual	N/A
Free Cash Flow	Cash Flow From Operations — Total Capex	N/A
Quality of Earnings	Numerator	Denominator
Cash Realization Ratio	Cash Flow From Operations	Net Income
Asset Replacement Ratio	Capex	Depreciation
Tax Rate	Tax Charge	Pre-Tax Income
Net Debt-To-Equity Ratio	Net Debt = Total Debt — Cash & Equivalents	Total Equity
Interest Cover	EBIT	Interest Expense
Valuation Toolkit	Numerator	Denominator
Price / Earnings Ratio	Current Share Price	Diluted Earnings Per Share (Basis As Specified)
Price / Book Value	Current Share Price	Shareholders' Equity / Current Basic Shares
Dividend Yield	Annualised Declared Cash Dividend	Current Share Price
Free Cash Flow Yield	Cash Flow From Operations – Total Capex	Market Cap = Current Share Price × Current Basic Shares
Enterprise Value / Sales	EV = Current Share Price × Current Shares + Minority Equity + Net Debt + Other LT Liabilities	Sales

EV / EBITDA Enterprise Value Basic EBIT + Depreciation + Amortization

Menethod 3*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.

Redatabase 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.

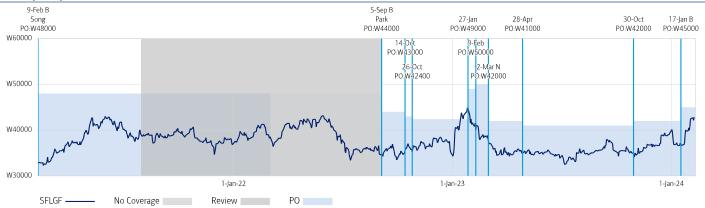
IQprofile^{≤M}, **IQ**method^{≤M} are service marks of Bank of America Corporation. **IQ**database® is a registered service mark of Bank of America Corporation.



Disclosures

Important Disclosures

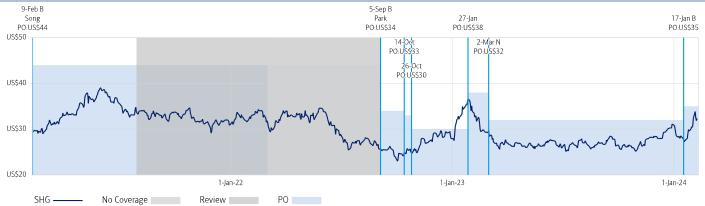
Shinhan FG (SFLGF) Price Chart



B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

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.

Shinhan FG (SHG) Price Chart



B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

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%

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: Shinhan FG.

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

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

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: Shinhan FG.

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

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: Shinhan FG. 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: Shinhan FG.

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: Shinhan FG.

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.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 (Hong Kong): Merr (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 Bancaría y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; BofAS Japan: BofA Securities Japan Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; BofAS India: BofA Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill Lynch (Israel): Merrill Lynch (Israel) Merrill Lynch (Israel) Financial Services Authority (DFSA); Merrill Lynch (Brazil): Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company: Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.

This information: has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been approved for publication and is distributed in the European Economic Area (EEA) by BofASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has been considered and distributed in Japan by BofAS Japan, a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSFC; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by BofAS



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.

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 is sued by Merrill Lynch (DIFC) is done so in accordance with the requirements of the DFSA conduct of business rules. BofA Europe (Frankfurt) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Europe and BofASE (France), may outsource/delegate the marketing and/or provision of certain research services or aspects of research services to other branches or members of the BofA Securities group. You may be contacted by a different BofA Securities entity acting for and on behalf of your service provider where permitted by applicable law. This does not change your service provider. Please refer to the Electronic Communications Disclaimers for further information.

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

General Investment Related Disclosures:

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

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

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

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

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

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

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

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.

