

HSBC

Growing the bank

Maintain Rating: BUY | PO: 765.00 GBp | Price: 599.70 GBp

Organic growth ahead

Interest rates were the whole thing for HSBC over 2020-22. Their zeroing in Covid dragged revenues down by US\$5bn; their normalisation added US\$10bn even after accounting impacts (Exhibit 4). But we believe HSBC can grow revenues organically with current forward curves, including a decline in US\$ rates (Exhibit 1). The keys: non-US\$ rates; volume growth and stronger non-interest income. The latter was up 31% y/y in 1Q 23, still 9% y/y on a steady accounting basis in a weak quarter for markets and Wealth. We see the group growing underlying revenues US\$2bn a year in 2024-25E (Exhibit 6)

Lower rate sensitivity and mixed rate picture

HSBC had lowered its rate sensitivity by a third by end-2022 (Exhibit 3) and 1Q 23 commentary showed further reduction. Notably, HSBC is now positively geared to falling US\$ rates, at least in the near term. And while US\$ rates are priced to decline, HIBOR is recently rising (Exhibit 9). In the UK, the Bank of England has continued to fall further behind inflation experience, meaning more hikes are likely. HSBC has more sterling exposure on a one-year basis than its combined dollar sensitivity.

Trade complexity plays to HSBC's strength

Exhibit 7 shows that Asia and the Middle East beyond Hong Kong and China contributed US\$4.5bn to pre-tax profit in commercial and corporate banking in 2022. This exceeded comparable profits in Hong Kong and China. We see the decoupling and reshoring trends introducing complexity and friction into trade – both positive for intermediary banks such as HSBC. And while overall trade has been compressed by international tensions, prices have more than compensated (Exhibit 10).

Returns up, distributions up, multiple down

HSBC looks set to deliver a Return on Tangible Equity over 14% in each of 2023-25E, more than double the prior decade. Shareholder distributions of US\$34bn in two years are a historical high. With the PE at an all-time low 6x (Exhibit 11), we maintain our Buy rating.

Estimates (Dec) (USD)	2021A	2022A	2023E	2024E	2025E
Net Profit (US\$m)	12,607	14,822	24,777	24,619	22,432
EPS (Reported Diluted)	0.62	0.74	1.27	1.30	1.23
Dividend / Share	0.25	0.32	0.55	0.77	0.57
Adjusted NAV PS	7.79	7.47	8.04	8.45	8.80
Valuation (Dec)					
P/E	13.08x	9.74x	5.89x	5.76x	6.10x
EPS Change (YoY)	226%	19.3%	71.4%	2.39%	-5.66%
Price / BV	0.77x	0.80x	0.77x	0.75x	0.72x
Price / NAV	0.96x	1.00x	0.93x	0.89x	0.85x
Net Yield	3.34%	4.28%	7.35%	10.3%	7.62%
DPS Change (YoY)	66.7%	28.0%	71.9%	40.0%	-26.0%
Price / GOP	10.2x	8.14x	4.21x	4.45x	4.27x

>> 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.

Bof A 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 10 to 13. Analyst Certification on page 8. Price
Objective Basis/Risk on page 8.

Timestamp: 14 May 2023 08:21PM EDT

15 May 2023

Equity

Alastair Ryan >> Research Analyst MLI (UK) +44 20 7996 4806

Rohith Chandra-Rajan >> Research Analyst MLI (UK) +44 20 7996 8495

Stock Data

Price (UK Ord, HK Ord, ADR) 599.70 GBp / 58.75 HKD / 37.50 USD 765.00 GBp / 77.67 HKD / Price Objective 49.98 USD Date Established 2-May-2023 / 2-May-2023 / 2-May-2023 Investment Opinion A-1-7 / B-1-7 / B-1-7 52-Week Range 434.70 GBp-653.80 GBp Market Val / Shares Out 116222 GBP / 19380.0 Average Daily Value (mn) 116.43 USD BofA Ticker / Exchange HRCYF / I SF BofA Ticker / Exchange XHSBF / HKG BofA Ticker / Exchange HSRC / NYS Bloomberg / Reuters HSBA LN / HSBA.L ROE (2023E) 13.1% Free Float 100.0% ESGMeter™

ESGMeter is not indicative of a company's future stock price performance and is not an investment recommendation or rating. ESGMeter is independent of BofA Global Research's equity investment rating, volatility risk rating, income rating, and price objective for that company. For full details, refer to "BofA ESGMeter Methodology".

iQprofile[™] HSBC

Key Income Statement Data (Dec)	2021A	2022A	2023E	2024E	2025E
(US\$ Millions)	IFRS	IFRS	IFRS	IFRS	IFRS
Net Interest Income	26,489	32,610	35,763	36,420	37,125
Net Fee Income	15,319	8,648	18,126	15,498	16,554
Securities Gains / (Losses)	7,744	10,469	12,563	12,563	12,563
Other Income	0	0	0	0	0
Total Non-Interest Income	23,063	19,117	30,688	28,061	29,117
Total Operating Income	49,552	51,727	66,452	64,480	66,242
Operating Expenses	(34,620)	(33,330)	(31,790)	(32,622)	(34,209)
Pre-Provision Profit	14,932	18,397	34,662	31,858	32,033
Provisions Expense	928	(3,592)	(3,952)	(3,944)	(4,176)
Operating Profit	15,860	14,805	30,710	27,914	27,857
Non-Operating Items	3,046	2,723	2,953	5,624	2,997
Pre-Tax Income	18,906	17,528	33,662	33,539	30,854
Net Income to sh/holders	12,607	14,822	24,777	24,619	22,432
Adjusted Cash Earnings	12,607	14,822	24,777	24,619	22,432
Key Balance Sheet Data					
Total Assets	2,957,939	2,966,260	2,894,797	2,845,022	2,948,025
Average Interest Earning Assets	2,231,207	2,286,576	2,292,943	2,283,691	2,307,651
Risk Weighted Assets	838,263	839,720	871,598	887,703	928,763
Total Gross Customer Loans	1,059,769	939,258	982,537	1,009,869	1,054,227
Total Customer Deposits	1,710,574	1,570,303	1,639,227	1,658,127	1,728,681
Tier 1 Capital	156,292	139,057	148,456	152.548	158,660
Tangible Equity	177.628	166,163	178,202	176,934	177,685
Common Shareholders' Equity	198,250	187,484	189,523	188,255	189,006
	,	,	,	,	,
Key Metrics	1.19%	1.43%	1.56%	1.59%	1.61%
Net Interest Margin Tier 1 Ratio	1.19% 18.6%	1.45% 16.6%	17.0%	1.59% 17.2%	1.01% 17.1%
Effective Tax Rate	22.3%	4.90%	21.0%	21.0%	21.0%
	35.4%	31.2%	33.4%	34.9%	35.2%
Loan / Assets Ratio	55.4% 61.1%	58.9%	59.0%	5 9.9%	55.2% 60.0%
Loan / Deposit Ratio Oper Leverage (Inc Growth - Cost Growth)	-2.29%	8.12%	33.1%	-5.58%	-2.13%
Gearing (Assets / Equity)	14.9x	15.8x 5.60%	15.3x 6.16%	15.1x 6.22%	15.6x
Tangible Equity / Assets	6.01%	19.8%		19.9%	6.03% 19.1%
Tangible Equity / RWAs	21.2%	19.6%	20.4%	19.9%	19.1%
Business Performance					
Revenue Growth	-1.74%	4.39%	28.5%	-2.97%	2.73%
Operating Expense Growth	0.55%	-3.73%	-4.62%	2.62%	4.87%
Provisions Expense Growth	-111%	-487%	10.0%	-0.20%	5.88%
Operating Revenue / Average Assets	0.53%	0.50%	1.05%	0.97%	0.96%
Operating Expenses / Average Assets	-1.17%	-1.13%	-1.08%	-1.14%	-1.18%
Pre-Provision ROA	0.50%	0.62%	1.18%	1.11%	1.11%
ROA	0.42%	0.50%	0.85%	0.86%	0.77%
Pre-Provision ROE	7.57%	9.54%	18.4%	16.9%	17.0%
ROE	6.39%	7.69%	13.1%	13.0%	11.9%
RoTE	8.01%	9.64%	16.2%	15.5%	14.0%
RoRWAs	1.49%	1.77%	2.90%	2.80%	2.47%
Dividend Payout Ratio	40.3%	43.2%	43.3%	59.3%	46.5%
Efficiency Ratio (Cost / Income Ratio)	69.9%	64.4%	47.8%	50.6%	51.6%
Quality of Earnings					
Total Non-Interest Inc / Operating Inc	46.5%	37.0%	46.2%	43.5%	44.0%
Market-Related Revenue / Total Revenues	0%	0%	0%	0%	0%
Provisioning Burden as % of PPP	-6.21%	19.5%	11.4%	12.4%	13.0%
NPLs plus Foreclosed Real Estate / Loans	1.82%	2.12%	1.95%	1.90%	1.83%
Loan Loss Reserves / NPLs	0%	0%	0%	0%	0%
Loan Loss Reserves / Total Loans	1.32%	1.56%	1.58%	1.60%	1.59%
Provisions Expense / Average Loans	-0.09%	0.36%	0.42%	0.40%	0.41%
1 1001310113 Expense / Average Luails	-0.0970	0.50 /0	U.TZ /U	U.TU //I	J.7170

Company Sector

Banks-Multinational/Universal

Company Description

HSBC Holdings is the leading cross-border international banking group, with particular strength in Asia, but also the UK, Middle East, and the Americas. Regional franchises are largely focused on retail and business banking, with the UK and Hong Kong home markets. The group's corporate and investment bank is based on its unique trade franchise, which gives pricing power and has allowed credit discipline. ADRs exposed to currency fluctuations. Dividends paid gross less withholding. 5 ADRs=1 share

Investment Rationale

HSBC has built its capital position and now sits with a fully phased in Basel 3 Common Equity Tier 1 at 13.6%. CET1 leverage ratio is above 5%. The dividend is high and sustainable, we believe - appropriate in a low-growth, low-return banking environment. Our Buy rating reflects strong distributions, including buybacks and a return to revenue growth.

Stock Data

Price to Book Value 0.8x



Key charts

Exhibit 1: US\$ rates set to be lower a year from now; other rates stable vs end 1Q 23

Policy rates, end 1Q 23-2026 (%)

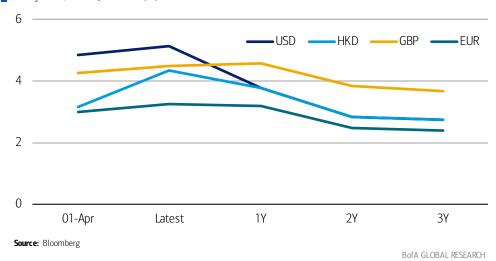
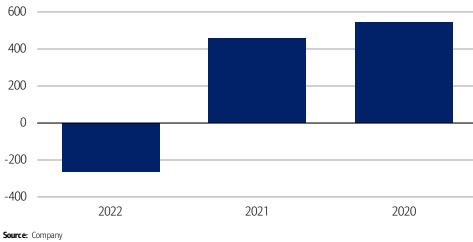


Exhibit 2: HSBC now positioned to gain from lower US\$ rates

HSBC income sensitivity to +100bp parallel shift in US\$ curves, 2020-22

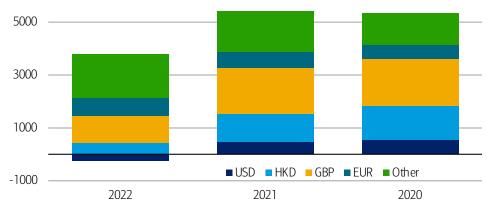


BofA GLOBAL RESEARCH



Exhibit 3: HSBC reduced rate sensitivity by a third overall

HSBC income sensitivity to +100bp parallel shift in yield curves, 2020-22

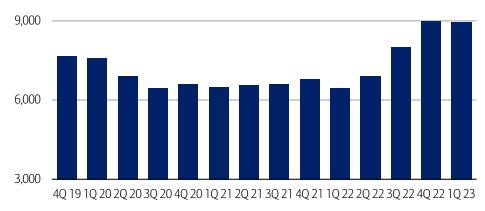


Source: company

BofA GLOBAL RESEARCH

Exhibit 4: Net Interest Income fell by US\$5bn annualised, then grew US\$10bn

HSBC quarterly Net Interest Income (US\$ mn) 2019-23

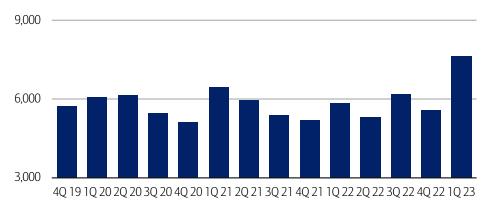


Source: BofA Global Research estimates, company report

BofA GLOBAL RESEARCH

Exhibit 5: non-interest income has returned to growth

HSBC non-interest income excluding acquisition and disposal impacts (US\$ mn) 2019-23



Source: BofA Global Research estimates, company report



Exhibit 5: non-interest income has returned to growth

HSBC non-interest income excluding acquisition and disposal impacts (US\$ mn) 2019-23

ROLA GLORAT KEZFAKCH

Exhibit 6: underlying revenues set to grow in 2024-25E

HSBC revenues and non-recurrent contributions (US\$ mn) 2023-25E

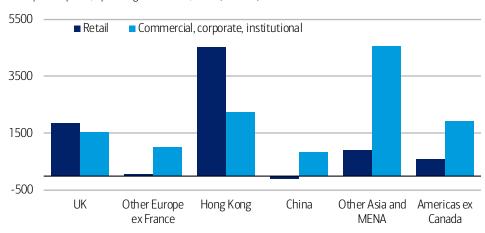
	2023E	2024E	2025E
Revenue	66,452	64,480	66,242
France	600		
Canada	2,000		
SVB gain	1,500		
Revenue underlying	62,352	64,480	66,242

Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 7: Asia and the Middle East highly profitable, even ex Hong Kong and mainland China

HSBC pre-tax profit, operating businesses, 2022 (US\$ mn)

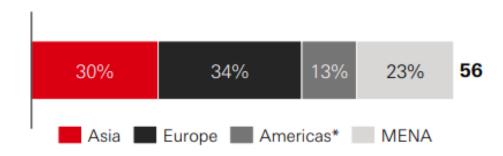


Source: BofA Global Research estimates, company report

BofA GLOBAL RESEARCH

Exhibit 8: HSBC active across global trade corridors

HSBC markets with Global Payment Solutions presence (number, %) 2022



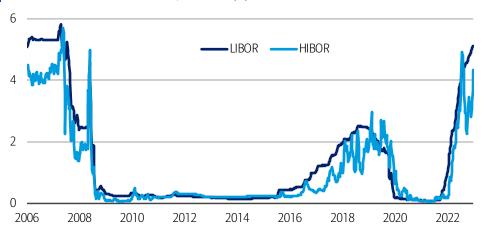
Source: company

BofA GLOBAL RESEARCH



Exhibit 9: HIBOR has significantly lagged LIBOR, now catching up

One month US\$ LIBOR and HK\$ HIBOR, since 2006 (%)

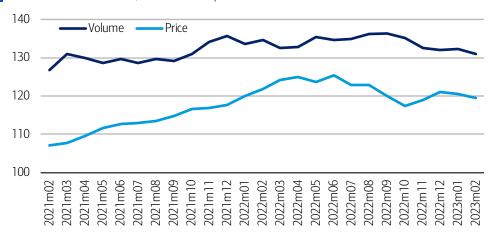


Source: Bloomberg

BofA GLOBAL RESEARCH

Exhibit 10: global trade volumes flat, prices have risen

World trade indexed to 2010, volume and US\$ prices



Source: CPB Netherlands

BofA GLOBAL RESEARCH

Exhibit 11: PE at an all-time low

HSBC 12-month forward PE (x) 1992-2023



Source: BofA Global Research estimates, Eikon



Exhibit 11: PE at an all-time low

HSBC 12-month forward PE(x) 1992-2023

ROLA GEORAL KESFAKCH

Valuation

We value HSBC using a Gordon growth model, shown in Exhibit 12.

Exhibit 12: HSBC Gordon growth model 2024E (US\$, GBP)We see a significant premium to book as justified

Gordon growth	2024E
Tangible equity	160,028
Net profit	24,619
ROE	15.4%
G	2%
COE	12%
P/NAV (x)	1.3
Implied value GBP, discounted	7.65

Source: BofA Global Research estimates

BofA GLOBAL RESEARCH



Price objective basis & risk

HSBC (HBCYF)

Our price objective is £7.65, using a Gordon Growth model. We use a 2024E underlying ROE of 13%, 2% growth and a 12% cost of equity to drive the valuation. At 9x our 2023E adjusted attributable income, the multiple at our PO would be below historical averages, considering macro risks.

Upside risks to our price objective are a greater-than-expected rise in US rates and a stronger global economy than we presently expect.

Downside risks are rate reductions and a slowdown in China spilling over into the rest of Asia.

HSBC (XHSBF / HSBC)

Our price objective is HK\$77.67 (US\$49.98), using a Gordon Growth model. We use a 2024E underlying ROE of 13%, 2% growth and a 12% cost of equity to drive the valuation. At 9x our 2023E adjusted attributable income, the multiple at our PO would be below historical averages, considering macro risks.

Upside risks to our price objective are a greater-than-expected rise in US rates and a stronger global economy than we presently expect. Downside risks: rate reductions. In addition, a slowdown in China spilling over into the rest of Asia.

Analyst Certification

I, Alastair Ryan, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

EMEA - Banks Coverage Cluster

Investment rating	Company	Bof A Ticker	Bloomberg symbol	Analyst
BUY				
	Allied Irish Banks	AIBRF	AIBG ID	Alastair Ryan
	Banco BPM	BNCZF	BAMIIM	Antonio Reale
	Bank Of Ireland Group	XBOIF	BIRG ID	Alastair Ryan
	BFF Banking Group	XBBZF	BFF IM	Antonio Reale
	BNP Paribas	BNPQF	BNP FP	Tarik El Mejjad
	BNP Paribas	BNPQY	BNPQY US	Tarik El Mejjad
	Credit Agricole	CRARF	ACA FP	Tarik El Mejjad
	Danske Bank	DNSKF	DANSKE DC	David Taranto
	Erste Bank	EBKOF	EBS AV	Alastair Ryan
	Erste Bank	EBKDY	EBKDY US	Alastair Ryan
	HSBC	XHSBF	5 HK	Alastair Ryan
	HSBC	HBCYF	HSBA LN	Alastair Ryan
	HSBC -A	HSBC	HSBC US	Alastair Ryan
	ING Groep NV	ING	ING US	Tarik El Mejjad
	ING Groep NV	INGVF	INGA NA	Tarik El Mejjad
	Intesa Sanpaolo	IITSF	ISP IM	Antonio Reale
	Intesa Sanpaolo	ISNPY	ISNPY US	Antonio Reale
	KBC Group	KBCSF	KBC BB	Tarik El Mejjad
	KBC Group NV	KBCSY	KBCSY US	Tarik El Mejjad
	Lloyds Banking Group	LLDTF	LLOY LN	Rohith Chandra-Rajan
	Lloyds Banking Group	LYG	LYG US	Rohith Chandra-Rajan
	NatWest Group	RBSPF	NWG LN	Rohith Chandra-Rajan
	Natwest Group PLc	NWG	NWG US	Rohith Chandra-Rajan
	Nordea	NBNKF	NDA FH	David Taranto
	Nordea	XSABF	NDA SS	David Taranto
	Nordea Bank Abp	NRDBY	NRDBY US	David Taranto
	Permanent TSB	ILPMF	PTSB ID	Alastair Ryan
	Societe Generale	SCGLF	GLE FP	Tarik El Mejjad



EMEA - Banks Coverage Cluster

Investment rating	Company	Bof A Ticker	Bloomberg symbol	Analyst
	Societe Generale	SCGLY	SCGLY US	Tarik El Mejjad
	UBS	XUHJF	UBSG SW	Alastair Ryan
	UBS	UBS	UBS US	Alastair Ryan
	Unicredit	UNCFF	UCG IM	Antonio Reale
	Unicredit	UNCRY	UNCRY US	Antonio Reale
NEUTRAL				
	Barclays	BCLYF	BARCLN	Rohith Chandra-Rajan
	Barclays	BCS	BCS US	Rohith Chandra-Rajan
	Commerzbank	CRZBF	CBK GY	Rohith Chandra-Rajan
	Handelsbanken	SVNLF	SHBA SS	David Taranto
	Mediobanca	MDIBF	MB IM	Antonio Reale
	StanChart	SCBFF	STAN LN	Alastair Ryan
	StanChart	XCHBF	2888 HK	Alastair Ryan
	Svenska Handelsbanke	SVNLY	SVNLY US	David Taranto
UNDERPERFORM				
	ABN AMRO	ABMRF	ABN NA	Tarik El Mejjad
	Deutsche Bank	DB	DB US	Rohith Chandra-Rajan
	Deutsche Bank	XDUSF	DBK GY	Rohith Chandra-Rajan
	DNB	DNBBF	DNB NO	David Taranto
	DNB ASA	DNBBY	DNBBY US	David Taranto
	Monte dei Paschi	BMDPF	BMPS IM	Antonio Reale
	Poste Italiane	PITAF	PST IM	Antonio Reale
	Raiffeisen Bank International	RAIFF	RBIAV	Alastair Ryan
	SEB	SVKEF	SEBA SS	David Taranto
	Swedbank	SWDBF	SWEDA SS	David Taranto
	Swedbank AB	SWDBY	SWDBY US	David Taranto
	Virgin Money UK PLC	CBBYF	VMUK LN	Rohith Chandra-Rajan
	Virgin Money UK PLC	CYBBF	VUK AU	Rohith Chandra-Rajan

Qmethod [™] Measures Definitions

Numerator

Business Performance

Dusiness remorniance	Numerator	Denominator
Return On Capital Employed	NOPAT = (EBIT + Interest Income) \times (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 +	Sales
	Other LT Liabilities	
EV / EBITDA	Enterprise Value	Basic EBIT + Depreciation + Amortization

Denominator

Manthod Mis 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.

IQprofileSM , IQmethod SM are service marks of Bank of America Corporation. IQdatabase® is a registered service mark of Bank of America Corporation.



Disclosures

Important Disclosures

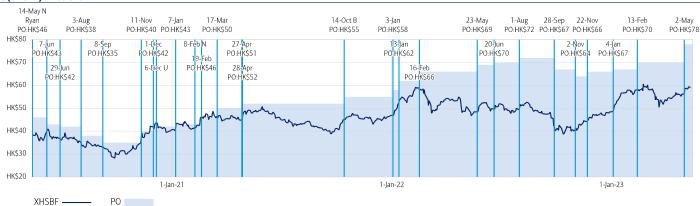
HSBC (HBCYF) Price Chart



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.

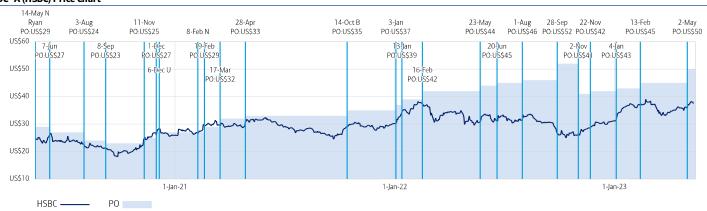
HSBC (XHSBF) Price Chart



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.

HSBC -A (HSBC) 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: Banks Group (as of 31 Mar 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	88	50.87%	Buy	72	81.82%
Hold	40	23.12%	Hold	29	72.50%
Sell	45	26.01%	Sell	34	75.56%

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

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	1869	53.01%	Buy	1030	55.11%
Hold	827	23.45%	Hold	476	57.56%
Sell	830	23.54%	Sell	389	46.87%

RI Issuers that were investment banking dients 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). There are three investment ratings: 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. 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: HSBC-A.

BofAS or an affiliate was a manager of a public offering of securities of this issuer within the last 12 months: HSBC.

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

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

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: HSBC.

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

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: HSBC. 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: HSBC -A.

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: HSBC.

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

The issuer is a corporate broking client of Merrill Lynch International in the United Kingdom: HSBC.

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 Equities (Australia) Limited, regulated by the Australian Securities and Investments Commission; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSFC); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch Canada Inc., regulated by the Investment Industry Regulatory Organization of Canada; 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): Merrill Lynch Merrill Lynch (Mexico): Merrill Lynch Merrill Lynch (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 Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill Lynch (Brazil): Merrill Lynch Securities Authority; Merrill Lynch (Israel): Merrill Lynch (Brazil): Merrill Lynch Securities Authority; Merrill Lynch (DIFC): Merrill Lynch International (DIFC Branch), regulated by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Brazil): Merrill Lynch Securities 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 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 Regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is one 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 th

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

General Investment Related Disclosures:

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

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

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

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

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

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

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

BofA ESGMeter Methodology:

ESGMeter is a proprietary metric based on quantitative analysis and fundamental analyst inputs that reflects our assessment of a company's Environmental, Social and Governance-related attributes. The ESGMeter is intended to indicate a company's likelihood of experiencing stronger financial stability (higher return on equity and lower earnings and price volatility) over the next three years relative to peer group. There are three ESGMeter levels - Low, Medium, and High - which indicate whether a company has attributes most likely to translate into superior financial stability (in the case of a High level) or weaker financial stability (in the case of a Low level) over the next three years relative to its peer group. A Medium level suggests that a company exhibits ESG characteristics that are likely associated with financial stability results in line with its peer group over the next three years. Full details of our methodology, financial stability definition and



disclaimers are available at <u>BofA ESGMeter methodology</u>. ESGMeter is not indicative of a company's future stock price performance and is not an investment recommendation or rating. ESGMeter is independent of the BofA Global Research fundamental equity analyst's investment rating, volatility risk rating, income rating or price objective for that company. **Copyright and General Information:**

Copyright 2023 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.

