

CGI Inc.

A few moving parts in F1Q print

Reiterate Rating: UNDERPERFORM | PO: 96.00 USD | Price: 113.74 USD

We are somewhat surprised to see shares trading higher

Earlier, GIB reported another quarter of mixed results, with const-curr revs growth below BofAe/Street and adj. EPS in-line with consensus driven partially by lower net financing costs. GIB cited strength in managed services and IP bookings but remains cautious on SI&C near term. Given continued malaise in parts of the demand environment, which will likely weigh on GIB's organic const-curr growth, and current valuation at ~18x C24 P/E, we believe current risk/reward is skewed to the downside; reiterate Underperform.

Demand for managed services and IP remains solid

Mgmt. commentary suggests demand for both IP (22% of total revs, up 4.2% y/y cc) and managed services deals (55% of total revs) remains robust particularly in gov't vertical, with GIB seeing contract duration extend as clients continue to focus on cost-takeout initiatives over SI&C projects. Additionally, while visibility into 2024 client budget decisions remains somewhat muted, GIB anticipates some demand reacceleration in 2H.

Cost optimization plan expanded

Following larger than expected restructuring costs in F1Q, GIB announced an additional C\$26M in restructuring costs (now expected to total C\$91M), of which C\$43M will be incurred in F2Q focused mostly on SG&A leverage, with mgmt. anticipating margin improvement in 2H24.

Bookings trends remain stable

F1Q bookings grew 3.8% y/y to C\$4,187M, reflecting a book-to-bill of 1.16x vs. 1.14x in F4Q23. On an LTM basis, GIB reported bookings of C\$16,411M (stable book-to-bill of 1.14x). Contract extensions and renewals represented 67% of total bookings, up 400bps q/q but down 100bps y/y. By service type, SI&C accounted for 43% of bookings, and by segment, all but one segment reported an LTM book-to-bill >1.0x, led by US Federal at 1.42x. Global backlog increased 6.2% y/y to C\$26,573M (1.84x of LTM revs).

Adjust PO to \$96; see inside for more on F1Q print

Following F1Q results and management commentary, we adjust our PO to \$96/CAD 129 from \$89/CAD 122 prior, based on 18x C24 P/E (17x prior) and our DCF, due to an increase in comp group multiples. **See inside for more on F1Q results.**

Estimates (Sep) (C\$)	2022A	2023A	2024E	2025E	2026E
EPS	6.13	7.07	7.69	8.14	8.71
GAAP EPS	6.04	6.87	7.39	8.14	8.71
EPS Change (YoY)	12.9%	15.3%	8.8%	5.9%	7.0%
DPS	0	0	0	0	0
EPS (YGIBA - C\$)	6.13	7.07	7.69	8.14	8.71
DPS (YGIBA - C\$)	0	0	0	0	0
Valuation (Sep)					
P/E	25.5x	21.8x	19.9x	18.8x	17.5x
GAAP P/E	25.9x	22.4x	20.7x	18.8x	17.5x
EV / EBITDA*	12.9x	11.6x	10.9x	10.2x	9.8x
Free Cash Flow Yield*	5.7%	6.2%	7.4%	7.7%	8.1%
* For full definitions of <i>IQ</i> method sm measures, see page 5.					

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.

Timestamp: 31 January 2024 01:05PM EST

31 January 2024

Equity

Key Changes		
(C\$)	Previous	Current
Price Obj.	US\$89.00	US\$96.00
2024E Rev (m)	14,974.0	14,935.6
2025E Rev (m)	15,573.0	15,533.1
2026E Rev (m)	16,195.9	16,154.4
2024E EPS	7.62	7.69
2025E EPS	8.15	8.14
2026E EPS	8.72	8.71

Jason Kupferberg

Research Analyst BofAS +1 646 855 1961 jason.kupferberg@bofa.com

Tyler DuPont Research Analyst BofAS +1 646 855 2944 tyler.dupont@bofa.com

Mihir Bhatia Research Analyst BofAS

+1 415 436 3553 mihir.bhatia@bofa.com

Cassie Chan Research Analyst BofAS +1 646 855 1829 cassie.chan@bofa.com

Stock Data

ESGMeter™

Price (NYS / TOR)	113.74 USD / 152.71 CAD
Price Objective	96.00 USD / 129.00 CAD
Date Established	31-Jan-2024 / 31-Jan-2024
Investment Opinion	B-3-9 / A-3-9
52-Week Range	84.89 USD - 111.42 USD
Market Value (mn)	23,446 USD
Free Float	99.3%
Average Daily Value	14.45 USD
Shares Outstanding (mn)	206.1 / 206.1
BofA Ticker / Exchange	GIB / NYS
BofA Ticker / Exchange	YGIBA / TOR
Bloomberg / Reuters	GIB US / GIB.N
ROE (2024E)	20.4%
Net Dbt to Eqty (Sep-	18.4%
2023A)	

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 wobjective for that company. For full details, refer to

Medium

iQprofile[™] CGI Inc.

iQmethod [™] – Bus Performance*					
(C\$ Millions)	2022A	2023A	2024E	2025E	2026E
Return on Capital Employed	13.4%	14.3%	14.6%	14.7%	14.1%
Return on Equity	20.9%	21.6%	20.4%	18.7%	16.8%
Operating Margin	16.0%	15.7%	15.8%	16.7%	16.7%
Free Cash Flow	1,713	1,952	2,341	2,434	2,536
<i>iQ</i> method [™] – Quality of Earnings*					
(C\$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash Realization Ratio	1.3x	1.3x	1.4x	1.4x	1.4x
Asset Replacement Ratio	0.3x	0.3x	0.2x	0.2x	0.2x
Tax Rate	25.5%	25.8%	25.6%	25.5%	25.5%
Net Debt-to-Equity Ratio	31.6%	18.4%	4.8%	-8.0%	-22.6%
Interest Cover	NA	NA	NA	NA	NA
Income Statement Data (Sep)					
(C\$ Millions)	2022A	2023A	2024E	2025E	2026E
Sales	12,867	14,296	14,936	15,533	16,154
% Change	6.1%	11.1%	4.5%	4.0%	4.0%
Gross Profit	12,867	14,296	14,936	15,533	16,154
% Change	6.1%	11.1%	4.5%	4.0%	4.0%
EBITDA	2,561	2,832	3,036	3,219	3,348
% Change	4.0%	10.6%	7.2%	6.0%	4.0%
Net Interest & Other Income	4	1	0	0	0
Net Income (Adjusted)	1,488	1,680	1,781	1,831	1,905
Free Cash Flow Data (Sep) (C\$ Millions)	2022A	2023A	2024E	2025E	2026E
Net Income from Cont Operations (GAAP)	1,466	1,631	1,711	1,831	1,905
Depreciation & Amortization	475			1,051	
Change in Working Capital	17.5	520	587	621	
	(117)	520 13	587 166	621 43	646
Deferred Taxation Charge	(117)	13	166	43	646 54
Deferred Taxation Charge Other Adjustments, Net	(7)	13 (109)	166 (55)	43 8	646 54 9
Other Adjustments, Net	(7) 49	13 (109) 57	166 (55) 71	43 8 75	646 54 9 75
ů .	(7)	13 (109)	166 (55)	43 8	646 54 9
Other Adjustments, Net Capital Expenditure	(7) 49 (152)	13 (109) 57 (160)	166 (55) 71 (137)	43 8 75 (146)	646 54 9 75 (152)
Other Adjustments, Net Capital Expenditure Free Cash Flow	(7) 49 (152) 1,713	13 (109) 57 (160) 1,952	166 (55) 71 (137) 2,341	43 8 75 (146) 2,434	646 54 9 75 (152) 2,536
Other Adjustments, Net Capital Expenditure Free Cash Flow % Change	(7) 49 (152) 1,713 - 14.1%	13 (109) 57 (160) 1,952 14.0%	166 (55) 71 (137) 2,341 19.9%	43 8 75 (146) 2,434 3.9%	646 54 9 75 (152) 2,536 4.2%
Other Adjustments, Net Capital Expenditure Free Cash Flow % Change Share / Issue Repurchase	(7) 49 (152) 1,713 -14.1% (929)	13 (109) 57 (160) 1,952 14.0% (899)	166 (55) 71 (137) 2,341 19.9% (526)	43 8 75 (146) 2,434 3.9% (640)	646 54 9 75 (152) 2,536 4.2% (640)
Other Adjustments, Net Capital Expenditure Free Cash Flow % Change Share / Issue Repurchase Cost of Dividends Paid	(7) 49 (152) 1,713 -14.1% (929)	13 (109) 57 (160) 1,952 14.0% (899)	166 (55) 71 (137) 2,341 19.9% (526)	43 8 75 (146) 2,434 3.9% (640)	646 54 9 75 (152) 2,536 4.2% (640)
Other Adjustments, Net Capital Expenditure Free Cash Flow % Change Share / Issue Repurchase Cost of Dividends Paid Change in Debt Balance Sheet Data (Sep)	(7) 49 (152) 1,713 -14.1% (929)	13 (109) 57 (160) 1,952 14.0% (899)	166 (55) 71 (137) 2,341 19.9% (526)	43 8 75 (146) 2,434 3.9% (640)	646 54 9 75 (152) 2,536 4.2% (640) 0 (212)
Other Adjustments, Net Capital Expenditure Free Cash Flow % Change Share / Issue Repurchase Cost of Dividends Paid Change in Debt Balance Sheet Data (Sep)	(7) 49 (152) 1,713 -14.1% (929) 0 (669)	13 (109) 57 (160) 1,952 14.0% (899) 0 (296)	166 (55) 71 (137) 2,341 19.9% (526) 0 (865)	43 8 75 (146) 2,434 3.9% (640) 0 (212)	646 54 9 75 (152) 2,536 4.2% (640) 0 (212)
Other Adjustments, Net Capital Expenditure Free Cash Flow % Change Share / Issue Repurchase Cost of Dividends Paid Change in Debt Balance Sheet Data (Sep) (C\$ Millions)	(7) 49 (152) 1,713 -14.1% (929) 0 (669)	13 (109) 57 (160) 1,952 14.0% (899) 0 (296)	166 (55) 71 (137) 2,341 19.9% (526) 0 (865)	43 8 75 (146) 2,434 3.9% (640) 0 (212)	646 54 9 75 (152) 2,536 4.2% (640) 0 (212) 2026E 4,255
Other Adjustments, Net Capital Expenditure Free Cash Flow % Change Share / Issue Repurchase Cost of Dividends Paid Change in Debt Balance Sheet Data (Sep) (C\$ Millions) Cash & Equivalents	(7) 49 (152) 1,713 -14.1% (929) 0 (669)	13 (109) 57 (160) 1,952 14.0% (899) 0 (296)	166 (55) 71 (137) 2,341 19.9% (526) 0 (865)	43 8 75 (146) 2,434 3.9% (640) 0 (212) 2025E 3,051	646 54 9 75 (152) 2,536 4.2% (640) 0 (212) 2026E 4,255 1,700
Other Adjustments, Net Capital Expenditure Free Cash Flow % Change Share / Issue Repurchase Cost of Dividends Paid Change in Debt Balance Sheet Data (Sep) (C\$ Millions) Cash & Equivalents Trade Receivables	(7) 49 (152) 1,713 -14.1% (929) 0 (669) 2022A 966 1,364	13 (109) 57 (160) 1,952 14.0% (899) 0 (296) 2023A 1,568 1,425 1,940 389	166 (55) 71 (137) 2,341 19.9% (526) 0 (865) 2024E 1,939 1,572	43 8 75 (146) 2,434 3.9% (640) 0 (212) 2025E 3,051 1,635	646 54 9 75 (152) 2,536 4.2% (640) 0 (212) 2026E 4,255 1,700
Other Adjustments, Net Capital Expenditure Free Cash Flow % Change Share / Issue Repurchase Cost of Dividends Paid Change in Debt Balance Sheet Data (Sep) (C\$ Millions) Cash & Equivalents Trade Receivables Other Current Assets	(7) 49 (152) 1,713 -14.1% (929) 0 (669) 2022A 966 1,364 2,019	13 (109) 57 (160) 1,952 14.0% (899) 0 (296) 2023A 1,568 1,425 1,940	166 (55) 71 (137) 2,341 19.9% (526) 0 (865) 2024E 1,939 1,572 2,000	43 8 75 (146) 2,434 3.9% (640) 0 (212) 2025E 3,051 1,635 2,031	646 54 9 75 (152) 2,536 4.2% (640) 0 (212) 2026E 4,255 1,700 2,062
Other Adjustments, Net Capital Expenditure Free Cash Flow % Change Share / Issue Repurchase Cost of Dividends Paid Change in Debt Balance Sheet Data (Sep) (C\$ Millions) Cash & Equivalents Trade Receivables Other Current Assets Property, Plant & Equipment	(7) 49 (152) 1,713 -14.1% (929) 0 (669) 2022A 966 1,364 2,019 370	13 (109) 57 (160) 1,952 14.0% (899) 0 (296) 2023A 1,568 1,425 1,940 389 10,476 15,799	166 (55) 71 (137) 2,341 19.9% (526) 0 (865) 2024E 1,939 1,572 2,000 378	43 8 75 (146) 2,434 3.9% (640) 0 (212) 2025E 3,051 1,635 2,031 378	646 54 9 75 (152) 2,536 4.2% (640) 0 (212) 2026E 4,255 1,700 2,062 378
Other Adjustments, Net Capital Expenditure Free Cash Flow % Change Share / Issue Repurchase Cost of Dividends Paid Change in Debt Balance Sheet Data (Sep) (C\$ Millions) Cash & Equivalents Trade Receivables Other Current Assets Property, Plant & Equipment Other Non-Current Assets Total Assets Short-Term Debt	(7) 49 (152) 1,713 -14.1% (929) 0 (669) 2022A 966 1,364 2,019 370 10,457 15,175 93	13 (109) 57 (160) 1,952 14.0% (899) 0 (296) 2023A 1,568 1,425 1,940 389 10,476 15,799 1,159	166 (55) 71 (137) 2,341 19.9% (526) 0 (865) 2024E 1,939 1,572 2,000 378 10,625 16,514 468	43 8 75 (146) 2,434 3.9% (640) 0 (212) 2025E 3,051 1,635 2,031 378 10,631 17,726 468	646 54 9 75 (152) 2,536 4.2% (640) 0 (212) 2026E 4,255 1,700 2,062 378 10,637 19,033 468
Other Adjustments, Net Capital Expenditure Free Cash Flow % Change Share / Issue Repurchase Cost of Dividends Paid Change in Debt Balance Sheet Data (Sep) (C\$ Millions) Cash & Equivalents Trade Receivables Other Current Assets Property, Plant & Equipment Other Non-Current Assets Total Assets Short-Term Debt Other Current Liabilities	(7) 49 (152) 1,713 -14.1% (929) 0 (669) 2022A 966 1,364 2,019 370 10,457 15,175 93 3,556	13 (109) 57 (160) 1,952 14.0% (899) 0 (296) 2023A 1,568 1,425 1,940 389 10,476 15,799 1,159 3,487	166 (55) 71 (137) 2,341 19.9% (526) 0 (865) 2024E 1,939 1,572 2,000 378 10,625 16,514 468 3,904	43 8 75 (146) 2,434 3.9% (640) 0 (212) 2025E 3,051 1,635 2,031 378 10,631 17,726 468 4,041	646 54 9 75 (152) 2,536 4.2% (640) 0 (212) 2026E 4,255 1,700 2,062 378 10,637 19,033 468 4,192
Other Adjustments, Net Capital Expenditure Free Cash Flow % Change Share / Issue Repurchase Cost of Dividends Paid Change in Debt Balance Sheet Data (Sep) (C\$ Millions) Cash & Equivalents Trade Receivables Other Current Assets Property, Plant & Equipment Other Non-Current Assets Total Assets Short-Term Debt Other Current Liabilities Long-Term Debt	(7) 49 (152) 1,713 -14.1% (929) 0 (669) 2022A 966 1,364 2,019 370 10,457 15,175 93 3,556 3,174	13 (109) 57 (160) 1,952 14.0% (899) 0 (296) 2023A 1,568 1,425 1,940 389 10,476 15,799 1,159 3,487 1,941	166 (55) 71 (137) 2,341 19.9% (526) 0 (865) 2024E 1,939 1,572 2,000 378 10,625 16,514 468 3,904 1,909	43 8 75 (146) 2,434 3.9% (640) 0 (212) 2025E 3,051 1,635 2,031 378 10,631 17,726 468 4,041 1,747	646 54 9 75 (152) 2,536 4.2% (640) 0 (212) 2026E 4,255 1,700 2,062 378 10,637 19,033 468 4,192 997
Other Adjustments, Net Capital Expenditure Free Cash Flow % Change Share / Issue Repurchase Cost of Dividends Paid Change in Debt Balance Sheet Data (Sep) (C\$ Millions) Cash & Equivalents Trade Receivables Other Current Assets Property, Plant & Equipment Other Non-Current Assets Total Assets Short-Term Debt Other Current Liabilities Long-Term Debt Other Non-Current Liabilities	(7) 49 (152) 1,713 -14.1% (929) 0 (669) 2022A 966 1,364 2,019 370 10,457 15,175 93 3,556 3,174 1,080	13 (109) 57 (160) 1,952 14.0% (899) 0 (296) 2023A 1,568 1,425 1,940 389 10,476 15,799 1,159 3,487 1,941 902	166 (55) 71 (137) 2,341 19.9% (526) 0 (865) 2024E 1,939 1,572 2,000 378 10,625 16,514 468 3,904 1,909 1,045	43 8 75 (146) 2,434 3.9% (640) 0 (212) 2025E 3,051 1,635 2,031 378 10,631 17,726 468 4,041 1,747 1,051	646 54 9 75 (152) 2,536 4.2% (640) 0 (212) 2026E 4,255 1,700 2,062 378 10,637 19,033 468 4,192 997 1,058
Other Adjustments, Net Capital Expenditure Free Cash Flow % Change Share / Issue Repurchase Cost of Dividends Paid Change in Debt Balance Sheet Data (Sep) (C\$ Millions) Cash & Equivalents Trade Receivables Other Current Assets Property, Plant & Equipment Other Non-Current Assets Total Assets Short-Term Debt Other Current Liabilities Long-Term Debt Other Non-Current Liabilities Total Liabilities	(7) 49 (152) 1,713 -14.1% (929) 0 (669) 2022A 966 1,364 2,019 370 10,457 15,175 93 3,556 3,174 1,080 7,903	13 (109) 57 (160) 1,952 14.0% (899) 0 (296) 2023A 1,568 1,425 1,940 389 10,476 15,799 1,159 3,487 1,941 902 7,489	166 (55) 71 (137) 2,341 19.9% (526) 0 (865) 2024E 1,939 1,572 2,000 378 10,625 16,514 468 3,904 1,909 1,045 7,325	43 8 75 (146) 2,434 3.9% (640) 0 (212) 2025E 3,051 1,635 2,031 378 10,631 17,726 468 4,041 1,747 1,051 7,306	646 54 9 75 (152) 2,536 4.2% (640) 0 (212) 2026E 4,255 1,700 2,062 378 10,637 19,033 468 4,192 997 1,058 6,715
Other Adjustments, Net Capital Expenditure Free Cash Flow % Change Share / Issue Repurchase Cost of Dividends Paid Change in Debt Balance Sheet Data (Sep) (C\$ Millions) Cash & Equivalents Trade Receivables Other Current Assets Property, Plant & Equipment Other Non-Current Assets Total Assets Short-Term Debt Other Current Liabilities Long-Term Debt Other Non-Current Liabilities	(7) 49 (152) 1,713 -14.1% (929) 0 (669) 2022A 966 1,364 2,019 370 10,457 15,175 93 3,556 3,174 1,080	13 (109) 57 (160) 1,952 14.0% (899) 0 (296) 2023A 1,568 1,425 1,940 389 10,476 15,799 1,159 3,487 1,941 902	166 (55) 71 (137) 2,341 19.9% (526) 0 (865) 2024E 1,939 1,572 2,000 378 10,625 16,514 468 3,904 1,909 1,045	43 8 75 (146) 2,434 3.9% (640) 0 (212) 2025E 3,051 1,635 2,031 378 10,631 17,726 468 4,041 1,747 1,051	644 54 (152 2,536 4.2% (640 (212 2026 4,25 1,700 2,06 378 10,63 19,03 468 4,19 99 1,058

Company Sector

Computer Services

Company Description

Headquartered in Montreal, Canada, CGI is one of the largest global information technology and business consulting services firms, serving both commercial and government clients. CGI delivers end-to-end portfolio of capabilities, including IT and business consulting, systems integration, and outsourcing. This is supported by the company's intellectual property solutions, industry expertise, and a mix of client proximity and global delivery model. CGI employs around 90,500 professionals globally.

Investment Rationale

We have an Underperform rating on GIB. We see further acceleration in const-curr revenue growth as challenging without increased M&A, as parts of the business continue to weigh on growth and the company has limited exposure to Digital. While we do not view expectations as too high, we see future upside potential as already priced in.

Stock	Data	
JUULK	Dutu	

Average Daily Volume	127,075
Shares / Common - Dual Listed	1.00

Quarterly Earnings Estimates

	2023	2024
Q1	1.66A	1.83A
Q2	1.82A	1.96E
Q3	1.80A	1.95E
04	1.79A	1.95E

Key Changes		
(C\$)	Previous	Current
Price Obj.	122.00	129.00
2024E EPS	7.62	7.69
2025E EPS	8.15	8.14
2026E EPS	8.72	8.71

* For full definitions of *IQ*methodSM measures, see page 5.

More on F1Q results

- In F1Q, revs increased 4.4% y/y to C\$3,603M vs. BofAe/Street at C\$3,623M/C\$3,579M. Const-curr growth of 1.5% y/y was 150bps/40bps below BofAe/Street, respectively.
- By service type, managed IT continued to represent the majority of revs (55% of total), in-line with F4Q23.
- By vertical market, Government remained the largest at 36% of total revs, followed by MRD (Manufacturing, Retail, & Distribution) which represented 23% of total.
- By geographic segment, six of the eight reported positive const-curr growth during the quarter, led by Northwest and Central-East Europe, which increased 8.6% y/y to C\$193M (prior to FX), due to growth across most vertical markets and favorable client settlement. Western and Southern Europe remained the largest at C\$616M (prior to FX), but declined 1.9% y/y in const-curr.
- Adj. EBIT of C\$584M increased 5.4% y/y, and was modestly below BofAe/Street at C\$594M/C\$586M. Adj. EBIT margin of 16.2% was 20bps below BofAe/Street.
- Adj. EPS of C\$1.83 was modestly ahead of BofAe at C\$1.97 and in-line with consensus of C\$1.82. FCF/revs of 13.6% was ahead of consensus at 11.6%, but modestly below the long-term target of 15%.
- Global headcount declined \sim 1,000 q/q to 90,500 (mostly non-billable functions), with 38% of employees based global delivery locations.
- Following F1Q results and management commentary, we adjust our PO to \$96 from \$89 prior, based on 18x C24 P/E (17x prior) and our DCF due to an increase in comp group multiples. Our DCF assumes a WACC of 9.6% (9.9% prior) and terminal growth rate of 3% (unchanged).



Price objective basis & risk

CGI Inc. (GIB / YGIBA)

We use a 50/50 blend of 18x C24E EPS and our DCF model to calculate our 12-month PO of CAD129 (\$96). Our target multiple reflects a mild premium to GIB's closest comps which, along with GIB, maintain annualized total shareholder return profiles in the high single digit/low double digit range. Moreover, unlike a majority of its peers in the IT Outsourcing space, GIB is projected to modestly increase its margins y/y in the coming years. Also, over the last several years, GIB has been able to successfully acquire and integrate several companies. GIB currently derives only around 23% of Digital revenues compared to its closest peers which derive around 60%. Digital is a faster growing segment of the overall IT services end-market. That said, we believe over the last few years, GIB has materially improved its Digital/consulting capabilities. Our discounted cash flow (DCF) analysis assumes a weighted average cost of capital (WACC) of 9.6% and a terminal growth rate of 3%.

Downside risks are 1) war for talent and elevated attrition levels, 2) lack of formal guidance, 3) potential implications of Brexit, 4) risks related to M&A, 5) potential slowdown in US Government spending, 5) FX.

Upside risks are 1) better-than-expected bookings and top-line growth trends, 2) extended period of greater-than-expected margin expansion, 3) stronger hiring and quicker to higher-growth Digital services.

Analyst Certification

I, Jason Kupferberg, 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.

US - Payments, Processors, Specialty Finance and IT services Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Accenture Plc	ACN	ACN US	Jason Kupferberg
	American Express Company	AXP	AXP US	Mihir Bhatia
	Block Inc	SQ	SQ US	Jason Kupferberg
	Capital One Financial	COF	COF US	Mihir Bhatia
	Discover Financial	DFS	DFS US	Mihir Bhatia
	Enact Holdings	ACT	ACT US	Mihir Bhatia
	Essent Group	ESNT	ESNT US	Mihir Bhatia
	Fidelity National Information Services	FIS	FIS US	Jason Kupferberg
	Fiserv Inc	FI	FIUS	Jason Kupferberg
	FleetCor Technologies Inc.	FLT	FLT US	Mihir Bhatia
	Flywire	FLYW	FLYW US	Jason Kupferberg
	Global Payments Inc	GPN	GPN US	Jason Kupferberg
	Jack Henry & Associates	JKHY	JKHY US	Jason Kupferberg
	Mastercard Inc	MA	MA US	Jason Kupferberg
	MGIC Investment Corp.	MTG	MTG US	Mihir Bhatia
	NMI Holdings	NMIH	NMIH US	Mihir Bhatia
	Nuvei	NVEI	NVEI US	Jason Kupferberg
	Nuvei	YNVEI	NVEI CN	Jason Kupferberg
	OneMain Holdings, Inc.	OMF	OMF US	Mihir Bhatia
	Shift4 Payments, Inc	FOUR	FOUR US	Jason Kupferberg
	Telus International	TIXT	TIXT US	Cassie Chan
	Telus International	YTIXT	TIXT CN	Cassie Chan
	Visa Inc.	V	V US	Jason Kupferberg
	WEX Inc.	WEX	WEX US	Mihir Bhatia
NEUTRAL				
	ADP	ADP	ADP US	Jason Kupferberg
				. 0

US - Payments, Processors, Specialty Finance and IT services Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	Affirm Holdings	AFRM	AFRM US	Jason Kupferberg
	Bread Financial Holdings Inc	BFH	BFH US	Mihir Bhatia
	DLocal	DLO	DLO US	Jason Kupferberg
	Globant SA	GLOB	GLOB US	Jason Kupferberg
	Marqeta	MQ	MQ US	Jason Kupferberg
	PayPal Holdings Inc	PYPL	PYPL US	Jason Kupferberg
	SoFi Technologies Inc	SOFI	SOFI US	Mihir Bhatia
	Synchrony Financial	SYF	SYF US	Mihir Bhatia
	Thoughtworks	TWKS	TWKS US	Jason Kupferberg
	Toast	TOST	TOST US	Jason Kupferberg
	TTEC Holdings	TTEC	TTEC US	Cassie Chan
UNDERPERFORM				
ONDERI ERI ORM	CGI Inc.	GIB	GIB US	Jason Kupferberg
	CGI Inc.	YGIBA	GIB/A CN	
		CTSH	CTSH US	Jason Kupferberg Jason Kupferberg
	Cognizant Technology Solutions Coinbase	COIN	COIN US	Jason Kupferberg
		DXC	DXC US	-
	DXC Technology	EPAM	EPAM US	Jason Kupferberg
	EPAM Systems Paychex	PAYX	PAYX US	Jason Kupferberg Jason Kupferberg
	Radian Group Inc	RDN	RDN US	Mihir Bhatia
	•			
	Rocket Companies, Inc. TaskUs	RKT	RKT US	Mihir Bhatia
		TASK	TASK US	Cassie Chan
	Western Union	WU	WU US	Jason Kupferberg

Pmethod[™] Measures Definitions

Business Performance	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

Manethod 344 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.

Qdatabase 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.

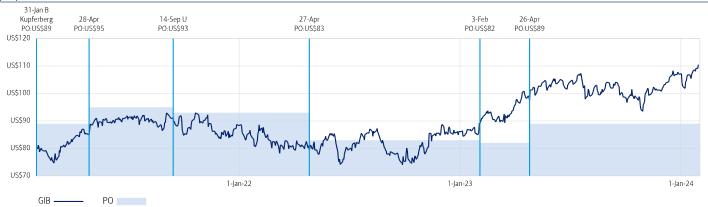
IQprofile M. IQmethod are service marks of Bank of America Corporation. IQdatabase is a registered service mark of Bank of America Corporation.



Disclosures

Important Disclosures

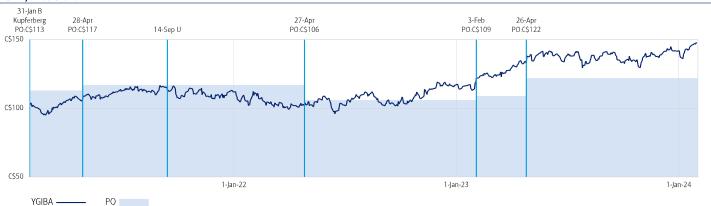
CGI (GIB) Price Chart



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.

CGI (YGIBA) 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: Technology Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships R1	Count	Percent
Buy	215	53.09%	Buy	111	51.63%
Hold	97	23.95%	Hold	45	46.39%
Sell	93	22.96%	Sell	24	25.81%

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: CGI.

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

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

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: CGI.

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: CGI. 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: CGI.

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: CGI.

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

Class A shares are subordinate voting: CGI.

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

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

