

Latam Equity Quant

lbov rallies for 3 weeks

Investment Strategy

Key takeaways

- BZ sentiment shift: rates-sensitive names rally in May. Ibov ex-commodities at 11% discount vs historicals despite uptick.
- We continue to see outflows from local equity/hedge funds. They are in line with the avg of the last 6M.
- We saw EM outflows (-US\$0.7bn this week) for the first time after 5 consecutive weeks of inflows into EM.

Last week in numbers

Markets in BZ reacted positively after inflation figures released yesterday (Thursday). Our economics team revised inflation forecasts to 5.5% YoY in 2023 (down from 6%). See details in the report Brazil Watch.

Ibov rallied for 3 weeks straight, amid an uptick in sentiment (see the report <u>LatAm</u> Fund Manager Survey) and rates moving lower (BZ 10y rates down 50bp in May). Ratessensitive names and sectors outperformed: C. Discretionary +23% this month in BRL terms, vs +5% for the broad index (Exhibit 2). Materials was a drag this month, and could remain a drag until the end of the year based on our iron ore forecasts (Exhibit 3).

After the rally, Ibov ex-commodities trades at an 11% discount to historicals, compared to around a 26% discount at 2023 lows (Exhibit 5). But downwards earnings revisions remain a risk (Exhibit 18).

Outflows from Brazil local equity/hedge last week. R\$1.6bn outflows from equity funds (in line with of avg of the last 6M, Exhibit 11). R\$1.8bn outflows from local hedge funds (R\$2.3bn outflows if we remove one outlier fund, which is also in line with avg of the last 6M).

US\$0.7bn outflows from EM equity funds this week (first outflow after 5 consecutive week of inflows). EM inflows of the last 5 weeks had been directed almost entirely to China (90% of all EM flows, compared to 60% in the last 6 months). Inflows into EM (all EM regions) reached +US\$55bn YTD (Exhibit 15).

No foreign inflows into B3 this month. Foreign flows into Brazil local exchange remain flattish in May so far. In 2023, foreign flows into cash equities + futures + IPO/follows in BZ are positive (+R\$8bn YTD, Exhibit 13).

For detailed data on flows, please refer to our monthly <u>Flows to know</u> report.

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

>> Employed by a non-US affiliate of BofAS and is not registered/qualified as a research analyst under the FINRA rules.

Refer to "Other Important Disclosures" for information on certain BofA Securities entities that take responsibility for the information herein in particular jurisdictions.

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 16 to 18.

12563436

26 May 2023

Investment Strategy Latin America

David Beker >> Bz Econ/FI & LatAm EQ Strategy Merrill Lynch (Brazil) +55 11 2188 4371 david.beker@bofa.com

Paula Andrea Soto, CFA >> LatAm Equity Strategist Merrill Lynch (Brazil) +55 11 2188 4226 paula.soto@bofa.com

Carlos Peyrelongue >> Research Analyst Merrill Lynch (Mexico) +52 55 5201 3276 carlos.peyrelongue@bofa.com

Mateus Conceicao >> LatAm Equity Strategist Merrill Lynch (Brazil) +55 11 2188 4201 mateus.conceicao@bofa.com

Exhibit 1: LatAm Earnings Revision

Earnings Revision Ratio = #Up Revisions / #Down Revisions. Brazil ERR at 0.6. Sector details in Exhibit 24

LatAm		
countries	Mar-23	Apr-23
Argentina	2.0	2.0
Brazil	0.6	0.6
Chile	0.5	0.6
Colombia	0.8	0.7
Mexico	1.1	1.0
Peru	0.7	0.8
LatAm	0.8	0.8

Source: BofA Global Research, Factset, Bloomberg BofA GLOBAL RESEARCH

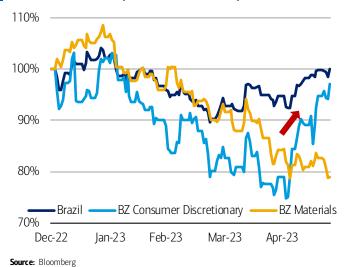
BZ = Brazil

ERR = Earnings Revision Ratio

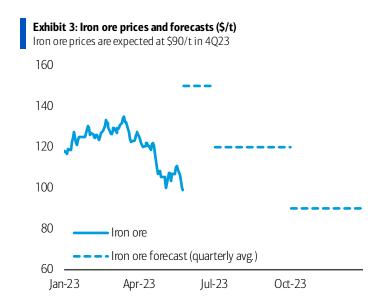
WTD = Week To Date

Exhibit 2: Brazil, BZ C. Discretionary and BZ Materials total returns (BRL Terms)

BZ consumer discretionary names rebounded in May



BofA GLOBAL RESEARCH



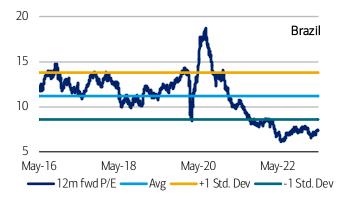
Source: Bloomberg, BofA Global Research



LatAm valuation

Exhibit 4: Ibovespa P/E ratio (12m fwd)

Trading more than 1 Std Dev below historical average, mostly driven by commodities.

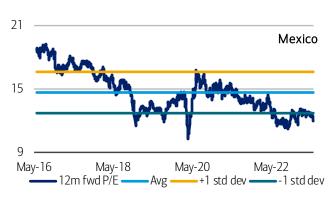


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 6: Mexbol P/E ratio, May-17 to May-23

Trading 1 Std Dev below historical average.

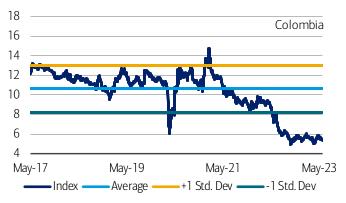


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 8: Colcap P/E ratio, May-17 to May-23

Trading more than 1 Std Dev below historical average.

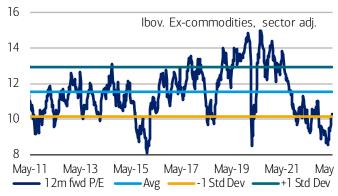


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 5: Ibovespa P/E ratio (12m fwd, sector adjusted ex. commodities)

Ibov ex-commodities at 11% discount vs hist.



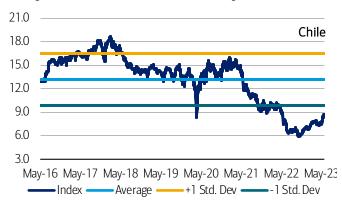
Note: Sector weights were adjusted and kept constant through time.

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 7: IPSA P/E ratio, May-17 to May-23

Trading more than 1 Std Dev below historical average.



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 9: Valuation summary

Brazil 34% discounted vs hist.

Country	Index	Current	Average	Std. Dev	Prem. to Hist	Prem. to EM*
Brazil	lbov	7.4	11.2	2.6	-34%	-39%
BZ Ex-com	ımod.	10.3	11.5	1.4	-11%	-6%
Mexico	Mexbol	12.0	14.7	1.9	-18%	3%
Chile	lpsa	8.7	13.2	3.3	-34%	-34%
Peru	SPBLPGPT	8.1	12.5	2.4	-36%	-23%
Colombia	Colcap	5.3	10.6	2.4	-50%	-59%
Argentina	Merval	12.8	10.4	2.9	23%	-42%
EM	MXEF	11.6	12.2	1.2	-5%	

Source: BofA Global Research, Bloomberg

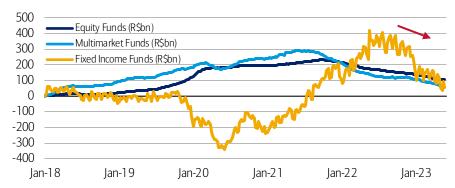


Flows & Positioning

Brazil flows

Exhibit 10: Cumulative flows into Brazil local fixed income, equity funds and local multimarket (hedge) funds (R\$bn)

Inflows into Brazil local equity and multimarket funds peaked in Sep-21.



Source: BofA Global Research, Economatica

BofA GLOBAL RESEARCH

Exhibit 11: Equity and Multimarket funds weekly flows (R\$bn) (Brazil local funds)

Brazil local equity funds had outflows since Sep-21.

Equity and Multimarket funds weekly flows

								Since peak
Fund type	AUM	28-Apr	5-May	12-May	19-May	26-May*	YTD	Sep-21
Broad equity Funds	227	-0.8	-0.9	-0.7	-1.1	-0.5	-26	-76
Ibovespa Active	40	-0.3	-0.1	-0.1	-0.2	-0.1	-4	-25
Other	65	-0.2	-0.2	-0.2	-0.3	-0.1	-5	-20
Equity Funds (Ex. Foreign Invest.)	332	-1.2	-1.2	-1.0	-1.6	-0.7	-35	-130
Multimarket	756	-4.0	-2.3	-2.8	-0.5	-0.6	-31	-123
Macro	267	-2.4	-1.5	-0.9	-0.8	-0.6	-18	-60
Other	143	-0.5	-0.8	0.2	-0.4	0.0	-6	-36
Multimarket								
Funds (Ex. Foreign Invest.)	1,166	-7.0	-4.6	-3.6	-1.8	-1.3	-55	-218

(*) Preliminary data, up to Wednesday.

Source: Economatica

BofA GLOBAL RESEARCH

Exhibit 12: Fixed Income funds weekly flows (R\$bn) (Brazil local funds)

Brazil local fixed income funds had outflows in 2022.

Fixed Income funds weekly flows

Fund type	AUM	28-Apr	5-May	12-May	19-May	26-May*	YTD
FI Short Duration - Invest. Grade	895	-5.6	-4.1	1.3	-0.7	-0.5	-93.5
FI Short Duration Govt	835	-38.7	-2.0	32.9	-26.9	0.8	49.9
FI All Duration Credit	238	-1.2	-1.6	3.1	0.0	0.0	-7.6
FI All Duration - Invest. Grade	715	-3.6	-7.7	1.6	-1.6	1.8	-14.2
FI All Duration Govt	217	-4.8	-2.0	3.3	-5.5	0.1	-2.7
FI (Broad)	386	-1.1	-4.2	11.0	-1.1	0.0	37.7
Other	489	-2.1	0.9	2.8	2.8	-1.5	-13.3
Fixed Income (Total) Ex.	2 770	E 7	-21	56	-33	,	-44
Foreign Invest.	3,770	-57	-21	20	-33	'	-44

(*) Preliminary data, up to Wednesday.

Source: Economatica



Exhibit 13: Foreign flow to B3 (R\$bn), Jun-22 to May-23

Flows are negative in May

Month	Futures	Cash	IPO/follow-on	TOTAL
Jun-22	3	0	11	15
Jul-22	(1)	2	-	1
Aug-22	(3)	16	-	13
Sep-22	(3)	(0)	1	(3)
Oct-22	(3)	14	-	11
Nov-22	5	3	-	8
Dec-22	(4)	14	1	12
Jan-23	6	13	-	19
Feb-23	(9)	(2)	-	(11)
Mar-23	(2)	(2)	2	(3)
Apr-23	3	3	1	6
May-23	(2)	(2)	-	(3)
12M Cumulative	(9)	59	16	65
2023 YTD	(4)	10	3	8
2022	(2)	101	17	116
2021	27	(7)	44	64

Source: B3, Bloomberg

BofA GLOBAL RESEARCH

Global flows

Exhibit 14: Cumulative flows into EM equity funds (US\$bn), 2018-2023 EM flows were positive this week. US\$55bn YTD.



BofA GLOBAL RESEARCH

Exhibit 15: Weekly flows to LatAm and EM funds (US\$mn) EM flows were positive this week. US\$55bn YTD.

		%		%		%
		Current	4	Current		Current
Region	Week	Assets	Weeks	Assets	YTD	Assets
LatAm	80	0.9%	36	0.4%	42	0.5%
Brazil	213	1.5%	178	1.2%	(848)	-5.9%
Mexico	(118)	-1.3%	28	0.3%	247	2.7%

% % 0.0% 0 0.0% Argentina (0)14 28.2% Andean 10 0.3% -2 9% 55 1.8% (86) LatAmTotal 185 0.5% 296 0.8% (631)-1.8% China (40)8,227 0.0% 0.6% 29,439 2.0% **EM** Total (728)-0.1% 9,719 0.7% 55,027 3.8%

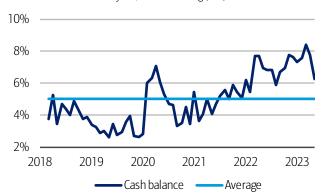
Source: EPFR

BofA GLOBAL RESEARCH

LatAm positioning

Exhibit 16: Average cash position (2018-2023)

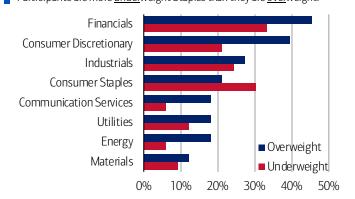
Cash levels at 6.3% in May-23, above histavg (5%).



Source: LatAm Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 17: Which sectors among equities are you most underweight? Participants are more <u>underweight</u> Staples than they are <u>over</u>weight.



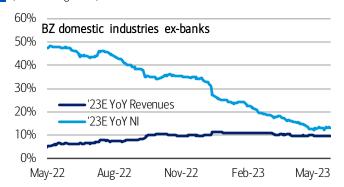
Source: LatAm Fund Manager Survey



Consensus Earnings Revisions for Brazil

Exhibit 18: Brazil domestic industries: consensus revised NI downwards but still expected at 13% YoY growth

Brazil domestic industries (ex-banks) revenues vs NI consensus estimates (2023E YoY growth).



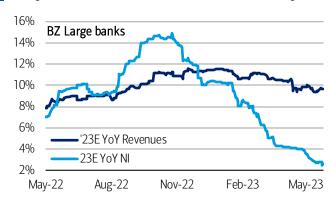
Consensus estimates.

Source: Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 19: Brazil Banks: consensus revised NI downwards since Nov-22, but still expected at +3% YoY for 2023.

BZ large banks revenues vs NI consensus estimates (2023E YoY growth).



Consensus estimates.

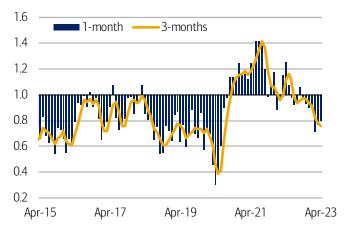
Source: Bloomberg, BofA Global Research

Earnings Revision Ratio (ERR)

The Earnings Revision Ratio measures the number of revisions for which the consensus EPS estimate has risen versus the number for which it has fallen.

An ERR above 1 means more upwards revisions than downwards revisions. However, historically analysts tend to start overly optimistic and do more downwards revisions down the line. As a result, the overall historical average of the 3-month ERR is close to 0.8

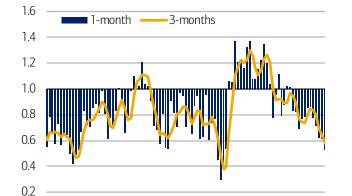
Exhibit 21: LatAm Earnings Revision Ratio (Apr 2015-Apr 2023) 3-month ERR at 0.8 in April-23, lowest since Aug 2020.



Source: BofA Global Research, Factset, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 23: Brazil Earnings Revision Ratio (Apr 2015-Apr2023)Brazil 3-month ERR in April is at 0.6, the lowest level since June 2020.



Apr-19

Source: BofA Global Research, Factset, Bloomberg

Apr-17

BofA GLOBAL RESEARCH

Apr-23

Apr-21

Exhibit 20: LatAm 3-month ERR - country details

Brazil 3-month ERR at 0.6 in April-23.

LatAm countries	12m Avg	Feb-23	Mar-23	Apr-23	1M Chg in 3M ERR
Argentina	1.5	1.9	2.0	2.0	0.00
Brazil	0.8	0.7	0.6	0.6	-0.06
Chile	1.3	0.5	0.5	0.6	0.10
Colombia	1.0	0.8	0.8	0.7	-0.09
Mexico	1.1	1.1	1.1	1.0	-0.03
Peru	0.9	1.0	0.7	0.8	0.11
LatAm	0.9	0.8	0.8	8.0	-0.03

Source: BofA Global Research, Factset, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 22: LatAm 3-month ERR – sector details

Financials show the highest ERR (1.3).

					IM Cng in
LatAm sectors	12m Avg	Feb-23	Mar-23	Apr-23	3M ERR
C. Discretionary	0.8	0.8	0.7	0.6	-0.04
C. Staples	1.0	0.8	0.7	0.7	0.00
Energy	1.2	0.7	0.7	0.6	-0.05
Financials	1.8	1.4	1.2	1.3	0.04
Health Care	0.4	0.5	0.3	0.3	0.00
Industrials	1.1	1.1	0.9	0.9	-0.05
IT	1.1	1.4	1.2	0.9	-0.29
Materials	0.8	0.7	0.7	0.8	0.06
Real Estate	1.1	1.3	1.1	1.1	0.00
Communication	0.8	1.0	0.8	0.5	-0.27
Utilities	1.0	1.3	1.0	0.9	-0.15
LatAm	0.9	0.8	0.8	0.8	-0.03

Source: BofA Global Research, Factset, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 24: Brazil 3-month ERR - sector details

HealthCare and C. Discretionary with lowest ERR in April.

Brazil sectors	12m Avg	Feb-23	Mar-23	Apr-23	1M Chg in 3M ERR
C. Discretionary	0.5	0.4	0.3	0.3	-0.03
C. Staples	0.7	0.5	0.5	0.3	-0.13
Energy	1.0	0.6	0.6	0.8	0.21
Financials	1.1	0.8	0.8	1.1	0.32
Health Care	0.4	0.4	0.3	0.2	-0.11
Industrials	0.8	0.7	0.7	0.6	-0.07
IT	1.0	1.1	0.8	0.7	-0.06
Materials	0.9	0.7	0.7	0.6	-0.15
Real Estate	1.4	1.4	1.0	0.5	-0.46
Communication	1.1	1.4	1.0	0.7	-0.27
Utilities	0.9	1.3	1.0	0.8	-0.20
Brazil	8.0	0.7	0.6	0.6	-0.06

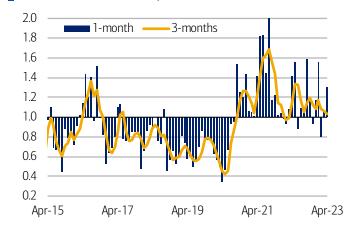
Source: BofA Global Research, Factset, Bloomberg

BofA GLOBAL RESEARCH



Apr-15

Exhibit 25: Mexico Earnings Revision Ratio (Apr 2015-Apr2023) 3-month ERR above 1 since April 2022.



Source: BofA Global Research, Factset, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 26: Mexico 3-month ERR - sector details

Financials has the highest ERR (2.1 in April).

Mexico					1M Chg in
sectors	12m Avg	Feb-23	Mar-23	Apr-23	3M ERR
C. Discretionary	1.4	1.4	1.2	1.5	0.25
C. Staples	1.6	1.1	1.1	1.2	0.14
Energy	NA	NA	NA	NA	NA
Financials	3.9	3.5	4.3	2.1	-2.19
Health Care	NA	NA	NA	NA	NA
Industrials	1.5	1.2	1.2	1.1	-0.02
IT	NA	NA	NA	NA	NA
Materials	0.7	0.8	0.8	1.0	0.12
Real Estate	1.1	1.1	1.0	0.5	-0.54
Communication	0.6	0.2	0.2	0.3	0.08
Utilities	NA	NA	NA	NA	NA
Mexico	1.1	1.1	1.1	1.0	-0.03

Source: BofA Global Research, Factset, Bloomberg

BofA GLOBAL RESEARCH

ERR methodology

The Earnings Revision Ratio (ERR) is calculated as follows: ERR = #Up Revisions / #Down Revisions, where:

Up Revisions = All instances when an analyst revises an estimate up.

Down Revisions = All instances when an analyst revises an estimate down.

We look at 1-Month and 3-Month ERRs; the former may anticipate market turns, while the latter is less volatile. Each company may contribute more than once as the total number of analyst revisions are considered. A company covered by several analysts will have a higher weight in the ratio.

The considered universe is composed of all companies within our current LatAm Coverage countries (Argentina, Brazil, Chile, Colombia, Mexico and Peru). A company will be included in the sample if at least one of the following variables is listed as one of said countries: country of risk, country of incorporation, country of registration, country of Headquarters, and country of top revenue. Panama's Copa Holdings is the only exception to the rule and was also added to the sample. Number of companies with at least one revision in the last 12 months: Argentina: 35, Brazil: 185, Chile: 37, Colombia: 20, Mexico: 106, Peru: 19.



Stock screens

Exhibit 27: Value screen

Within this screen, Homebuilders and Airlines have the best performance YTD.

				BofA	P/E	P/E	Net	30D Performance	YTD Performance
Company	Country	Industry	BBG Ticker	Ticker	2021E	2022E	Debt/EBITDA	(local crncy)	(local crncy)
YPF SA	AR	Oil & Gas Producers	YPF US	YPF	3.2	3.2	1.8	0%	21%
Petrobras PN	BZ	Oils	PETR4 BZ	PTRBF	2.9	3.2	0.5	-2%	8%
Petro-Rio	BZ	Oil & Gas Producers	PRIO3 BZ	HRTPF	5.3	3.8	1.8	3%	-4%
Ecopetrol	CO	Oil & Gas Producers	ECOPETL CB	XESSF	4.1	4.3	1.4	-7%	-14%
Usiminas	BZ	Steels	USIM5 BZ	USSPF	6.5	4.9	0.1	4%	2%
Metalurgica Gerda	u BZ	Steels	GOAU4BZ	MZGPF	3.8	5.5	0.4	1%	-13%
Vale ON	BZ	Non-Ferrous-Mining	VALE3 BZ	VALEF	4.7	5.5	0.4	-7%	-27%
Ternium	MX	Steels	TX US	TX	5.9	6.1	-1.0	-5%	25%
Gerdau	BZ	Steels	GGBR4 BZ	GGBUF	5.0	6.8	0.4	0%	-13%
Alpek	MX	Chemicals-Major	ALPEKA MM	ALPKF	8.2	6.8	1.7	-2%	-32%
COPASA	BZ	Water Utilities	CSMG3 BZ	CSAOF	7.4	6.9	1.4	22%	27%
Сора	CO	Airlines	CPA US	CPA	7.3	7.0	0.8	21%	28%
Cemig	BZ	Electric Utilities	CMIG4 BZ	CEMCF	6.3	7.0	1.4	-3%	8%
SQM	CL	Fertilizers	SQM US	SQM	5.6	7.0	0.0	0%	-17%
Sanepar	BZ	Water Utilities	SAPR11 BZ	XJALF	6.7	7.1	1.6	12%	16%
Liverpool Puerto	MX	Retailing-Broadline/Department Stores	LIVEPOLC MM	ELPQF	7.9	7.5	0.8	-2%	-9%
Cyrela	BZ	Homebuilders	CYRE3 BZ	XCBMF	8.9	7.7	0.5	26%	43%
CPFL Energia	BZ	Electric Utilities	CPFE3 BZ	XPFGF	7.7	7.8	1.6	-6%	-4%
Coca-Cola Andina	CL	Soft Drinks	ANDINAB CI	AKOBF	10.6	9.1	1.8	-1%	-1%
Danhos	MX	REITs	DANHOS13 MM	GRFFF	10.5	9.9	1.7	-2%	-2%
Median								-1%	-2%

Source: BofA Global Research, Bloomberg.

Stocks are selected from our LatAm universe of coverage regardless of the rating. Stocks must have at least 5y of trading. Screen criteria: Mkt Cap>US\$1bn. 2021E and 2022E fwd P/E ratio below MSCI LatAm median P/E. Net Debt/EBITDA <2 (this condition is ignored for Financials). If results exceed 20 companies, those with the lowest 2022E P/E ratio are selected. Fundamental ratings are not part of the screening criteria. This screen is not a recommended list either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decision. Fundamental ratings are not part of the screening criteria.

BofA GLOBAL RESEARCH

Exhibit 28: Growth screen

Many traditional retail and e-commerce names in this screen.

				BofA	P/E	Div. Yield	30D Performance (local	YTD Performance (local
Company	Country	Industry	BBG Ticker	Ticker	2022E	2022E	crncy)	crncy)
Mercado Libre	BZ	Internet/e-Commerce	MELI US	MELI	51.6	0%	2%	48%
Magazine Luiza	BZ	Retailing-Hardlines	MGLU3 BZ	MGZZF	50.4	0%	14%	36%
Omega Geraçã	bΒZ	Renewable Energy	MEGA3 BZ	XZQAF	47.3	0%	10%	1%
Raia Drogasil	BZ	Drug Store Chains	RADL3 BZ	RAIAF	30.3	1%	13%	23%
WEG	BZ	Industrials/Multi-Industry	WEGE3 BZ	WGSEF	28.3	2%	-3%	2%
Natura	BZ	Cosmetics/Personal Care	NTCO3 BZ	XZVAF	26.7	0%	28%	16%
Rumo Logistica	BZ	Rail Transport/Railroads	RAIL3 BZ	RUMOF	22.1	0%	6%	13%
Walmex	MX	Supermarkets/Food Retailers	WALMEX* MM	WMMVF	20.6	4%	-3%	2%
Vesta	MX	Real Estate/Property	VESTA* MM	VESTF	20.4	3%	-3%	16%
TOTVS	BZ	Server & Enterprise Software	TOTS3 BZ	XBEGF	20.2	1%	17%	8%
DASA	BZ	Healthcare Technology & Distribution	DASA3 BZ	DIAOF	19.0	1%	67%	-17%
Bimbo	MX	Bakers	BIMBOA MM	GRBMF	18.8	1%	1%	13%
Brasil Foods	BZ	Food Processors	BRFS3 BZ	BRFFF	18.8	0%	27%	-9%
Braskem	BZ	Chemicals-Major	BRKM5 BZ	BAKAF	18.2	1%	19%	-3%
Cogna	BZ	Education & Training Services	COGN3 BZ	KROTF	16.8	0%	41%	29%
Localiza	BZ	Car Rental	RENT3 BZ	LZRFF	16.5	1%	13%	20%
Multiplan	BZ	Real Estate/Property	MULT3 BZ	XMULF	16.4	3%	8%	23%
FEMSA	MX	Brewers	FEMSAUBD MM	FMXUF	16.3	2%	1%	15%
Arca	MX	Soft Drinks	AC* MM	EMBVF	15.7	4%	4%	11%
Volaris	MX	Airlines	VOLARA MM	XSOBF	15.7	0%	16%	41%
Median							11%	14%

Source: BofA Global Research, Bloomberg

Stocks are selected from our LatAm universe of coverage regardless of the rating. Stocks must have at least 5y of trading. Screen criteria: Mkt Cap>US\$1bn. 2021E and 2022E fwd P/E ratio above MSCI LatAm median P/E. Dividend yield (2022E) below MSCI LatAm dividend yield. If results exceed 20 companies, those with the highest 2022E P/E ratio are selected. Fundamental ratings are not part of the screening criteria. This screen is not a recommended list either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decision.



Exhibit 29: High dividend screenThis screen encompasses many utilities and banks.

				BofA	Div. Yield	30D Performance (local	YTD Performance (local
Company	Country	Industry	BBG Ticker	Ticker	2023E	crncy)	crncy)
Ecopetrol	CO	Oil & Gas Producers	ECOPETL CB	XESSF	19.9	-7%	-14%
Bradespar	BZ	Non-Ferrous-Mining	BRAP4 BZ	BRDQF	19.6	-11%	-28%
Petrobras PN	BZ	Oils	PETR4 BZ	PTRBF	17.8	-2%	8%
BanColombia	CO	Banks-Multinational/Universal	PFBCOLO CB	XAFFF	13.2	-12%	-20%
CSN	BZ	Steels	CSNA3 BZ	SIDHF	11.6	-10%	-15%
Banco do Brasil	BZ	Banks-Retail	BBAS3 BZ	XBBAF	10.9	4%	29%
SQM	CL	Fertilizers	SQM US	SQM	10.6	0%	-17%
Danhos	MX	REITs	DANHOS13 MM	GRFFF	10.3	-2%	-2%
TAESA	BZ	Electric Utilities	TAEE11 BZ	XTAEF	9.7	6%	8%
BB Seguridade	BZ	Insurance - Multi-line	BBSE3 BZ	XBDPF	9.5	-8%	-6%
Gerdau	BZ	Steels	GGBR4 BZ	GGBUF	9.5	0%	-13%
Vale ON	BZ	Non-Ferrous-Mining	VALE3 BZ	VALEF	9.5	-7%	-27%
Fibra Uno	MX	REITs	FUNO11 MM	FBASF	9.4	-3%	4%
CPFL Energia	BZ	Electric Utilities	CPFE3 BZ	XPFGF	9.3	-6%	-4%
Banco de Chile	CL	Banks-Retail	CHILE CI	XHNDF	9.2	8%	-2%
Sanepar	BZ	Water Utilities	SAPR11 BZ	XJALF	9.1	12%	16%
Minerva	BZ	Food Processors	BEEF3 BZ	MRVSF	8.9	17%	-24%
Banco Macro	AR	Banks-Retail	BMA US	BMA	8.8	-3%	7%
Auren Energia	BZ	Electric Utilities	AURE3 BZ	XZMXF	8.3	-8%	-3%
Engie	BZ	Electric Utilities	EGIE3 BZ	XZDDF	7.9	3%	12%
Median						-3%	-4%

Source: BofA Global Research, Bloomberg

Stocks are selected from our LatAm universe of coverage regardless of the rating. Stocks must have at least 5y of trading. Screen criteria: Mkt Cap>US\$1bn. Dividend yield

(2022E) above MSCI LatAm dividend yield. If results exceed 20 companies, those with the highest dividend yield are selected. Fundamental ratings are not part of the screening criteria. This screen is not a recommended list either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decision.

BofA GLOBAL RESEARCH

Exhibit 30: Defensive screen

Many bond proxies, Utilities, Soft Drinks and Telecom.

				BofA			30D Performance	YTD Performance
Company	Country	Industry	BBG Ticker	Ticker	Beta	Net Debt/EBITDA	(local crncy)	(local crncy)
Soriana	MX	Supermarkets/Food Retailers	SORIANAB MM	ONZBF	0.1	1.6	-1%	-3%
Сора	CO	Airlines	CPA US	CPA	0.2	0.8	21%	28%
Vivo	BZ	Telecom Equipment-Wireless/Cellular	VIVT3 BZ	XCPTF	0.4	0.7	5%	10%
Alpek	MX	Chemicals-Major	ALPEKA MM	ALPKF	0.4	1.7	-2%	-32%
Liverpool Puerto	MX	Retailing-Broadline/Department Stores	LIVEPOLC MM	ELPQF	0.4	0.8	-2%	-9%
Arca	MX	Soft Drinks	AC* MM	EMBVF	0.4	0.5	4%	11%
Auren Energia	BZ	Electric Utilities	AURE3 BZ	XZMXF	0.4	1.3	-8%	-3%
Coca-Cola FEMSA	MX	Soft Drinks	KOFUBL MM	COCSF	0.4	0.9	0%	15%
AmBev	BZ	Brewers	ABEV3 BZ	AVBPF	0.5	-0.4	4%	2%
BB Seguridade	BZ	Insurance - Multi-line	BBSE3 BZ	XBDPF	0.5	NA	-8%	-6%
Danhos	MX	REITs	DANHOS13 MM	GRFFF	0.5	1.7	-2%	-2%
Qualitas	MX	Insurance - Non-Life	Q* MM	QUCOF	0.5	NA	-3%	34%
Coca-Cola Andina	CL	Soft Drinks	ANDINAB CI	AKOBF	0.5	1.8	-1%	-1%
Gentera	MX	Banks-Retail	GENTERA* MM	CMPRF	0.5	NA	-1%	-11%
TIM	BZ	Telecom Services-Wireless/Cellular	TIMS3 BZ	XZUAF	0.5	1.4	5%	16%
Cemex LatAm	CO	Building Materials	CLH CB	XOGVF	0.5	0.8		
Sanepar	BZ	Water Utilities	SAPR11 BZ	XJALF	0.5	1.6	12%	16%
CPFL Energia	BZ	Electric Utilities	CPFE3 BZ	XPFGF	0.5	1.6	-6%	-4%
Grupo BMV	MX	Other Financials	BOLSAA MM	BOMXF	0.6	NA	-6%	-3%
WEG	BZ	Industrials/Multi-Industry	WEGE3 BZ	WGSEF	0.6	-0.3	-3%	2%
Median		·					-1%	-1%

Source: BofA Global Research, Bloomberg

Stocks are selected from our LatAm universe of coverage regardless of the rating. Stocks must have at least 5y of trading. Screen criteria: Mkt Cap>USS1bn. Net Debt/EBITDA < 2 (this condition is ignored for

Beta relative to the local index < 0.9. If results exceed 20 companies, those with the lowest beta are selected. Fundamental ratings are not part of the screening criteria.

This screen is not a recommended list either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decision.

BofA GLOBAL RESEARCH



10

Exhibit 31: High Beta screen Several financials and Real Estate names in this screen.

				BotA		Net	30D Performance	YTD Performance
Company	Country	Industry	BBG Ticker	Ticker	Beta	Debt/EBITDA	(local crncy)	(local crncy)
Magazine Luiza	BZ	Retailing-Hardlines	MGLU3 BZ	MGZZF	2.0	4.3	14%	36%
Cemex	MX	Building Materials	CX US	CX	1.9	2.7	7%	54%
Cogna	BZ	Education & Training Services	COGN3 BZ	KROTF	1.7	3.7	41%	29%
B3 SA	BZ	Financial Services-Consumer/Commercial	B3SA3 BZ	XIMAF	1.6	NA	12%	0%
Volaris	MX	Airlines	VOLARA MM	XSOBF	1.5	5.0	16%	41%
BTG Pactual	BZ	Banks-Retail	BPAC11 BZ	XNXCF	1.5	NA	18%	12%
Televisa	MX	Cable TV	TLEVICPO MM	GRPFF	1.4	2.6	-2%	-5%
CSN	BZ	Steels	CSNA3 BZ	SIDHF	1.4	3.1	-10%	-15%
Cosan	BZ	Energy Commodities	CSAN3 BZ	CSAIF	1.3	2.2	3%	-9%
DASA	BZ	Healthcare Technology & Distribution	DASA3 BZ	DIAOF	1.3	5.0	67%	-17%
GFInbursa	MX	Banks-Retail	GFINBURO MM	GPFOF	1.3	NA	0%	23%
Localiza	BZ	Car Rental	RENT3 BZ	LZRFF	1.3	5.5	13%	20%
Embraer	BZ	Aerospace	ERJ US	ERJ	1.3	2.8	-8%	31%
Aliansce	BZ	Real Estate/Property	ALSO3 BZ	XCCGF	1.3	6.5	18%	24%
Natura	BZ	Cosmetics/Personal Care	NTCO3 BZ	XZVAF	1.3	4.6	28%	16%
Banco do Brasil	BZ	Banks-Retail	BBAS3 BZ	XBBAF	1.2	NA	4%	29%
lguatemi	BZ	Real Estate/Property	IGTI11 BZ	XBGQF	1.2	2.4	15%	19%
BanColombia	CO	Banks-Multinational/Universal	PFBCOLO CB	XAFFF	1.2	NA	-12%	-20%
Dexco	BZ	Forest Products	DXCO3 BZ	DURXF	1.2	3.5	43%	19%
Median							13%	19%

Source: BofA Global Research, Bloomberg

Stocks are selected from our LatAm universe of coverage regardless of the rating. Stocks must have at least 5y of trading. Screen criteria: Mkt Cap>US\$1bn. Net Debt/EBITDA > 2 (this condition is ignored for Financials). Beta relative to the local index >1.1. If results exceed 20 companies, those with the highest beta are selected. Fundamental ratings are not part of the screening criteria.

This screen is not a recommended list either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decision. Fundamental ratings are shown only for information and are not part of the screening criteria

BofA GLOBAL RESEARCH

Exhibit 32: List of stocks within our coverage most discounted to historicals

Commodity exporters with large earnings this and next year have depressed ratios, as well as many financial names.

							10-Year		30D	YTD
					Discount	Current	Avg.	Net	Performance	Performance
Company	Country	Industry	BBG Ticker	Ticker	to hist.	Valuation	Valuation	Debt/EBITDA	(local crncy)	(local crncy)
Cogna	BZ	Education & Training Services	COGN3 BZ	KROTF	-87%	16.8	133.8	3.7	41%	29%
Eneva	BZ	Electric Utilities	ENEV3 BZ	XZUMF	-79%	10.0	48.8	6.8	5%	-1%
Televisa	MX	Cable TV	TLEVICPO MM	GRPFF	-75%	2.6	10.4	2.6	-2%	-5%
Rumo Logistica	BZ	Rail Transport/Railroads	RAIL3 BZ	RUMOF	-71%	22.1	77.3	2.5	6%	13%
Embraer	BZ	Aerospace	ERJ US	ERJ	-67%	5.3	16.2	2.8	-8%	31%
Volaris	MX	Airlines	VOLARA MM	XSOBF	-66%	4.5	13.0	5.0	16%	41%
Natura	BZ	Cosmetics/Personal Care	NTCO3 BZ	XZVAF	-63%	0.8	2.2	4.6	28%	16%
BanColombia	CO	Banks-Multinational/Universal	PFBCOLO CB	XAFFF	-61%	0.7	1.7	NA	-12%	-20%
Cielo	BZ	Financial Services-Consumer/Commercial	CIEL3 BZ	CIOXF	-53%	6.3	13.4	NA	-2%	-6%
Gentera	MX	Banks-Retail	GENTERA* MM	CMPRF	-53%	1.3	2.7	NA	-1%	-11%
Brasil Foods	BZ	Food Processors	BRFS3 BZ	BRFFF	-51%	4.5	9.1	5.7	27%	-9%
Banrisul	BZ	Banks-Retail	BRSR6 BZ	XGRBF	-51%	0.5	1.0	NA	16%	24%
Fibra Uno	MX	REITs	FUNO11 MM	FBASF	-45%	7.8	14.2	7.1	-3%	4%
BTG Pactual	BZ	Banks-Retail	BPAC11 BZ	XNXCF	-44%	15.0	26.7	NA	18%	12%
Bradesco	BZ	Banks-Retail	BBDC4 BZ	BRDPF	-41%	1.1	1.9	NA	17%	6%
Cencosud	CL	Retailing-Broadline/General Merchandisers	CENCOSUD CI	XCSCF	-40%	5.7	9.6	3.1	-5%	10%
Alfa	MX	Industrials/Multi-Industry	ALFAA MM	ALFFF	-40%	6.4	10.6	2.7	1%	-7%
Credicorp	PE	Banks-Retail	BAP US	BAP	-39%	7.0	11.4	NA	0%	-1%
Falabella	CL	Retailing-Broadline/Department Stores	FALAB CI	XDIYF	-38%	12.6	20.5	4.5	5%	12%
GFInbursa	MX	Banks-Retail	GFINBURO MM	GPFOF	-38%	9.1	14.7	NA	0%	23%
Median									3%	8%

Source: BofA Global Research, Bloomberg

Stocks are selected from our LatAm universe of coverage regardless of the rating. Stocks must have at least 5y of trading. Screen criteria: Mkt Cap>US\$1bn. Net Debt/EBITDA < 2 (this condition is ignored for Financials). Valuation ratio < 10y hist avg (or longest available). Valuation ratios are chosen according to a company's sector: for Materials, Energy, Airlines and C. Staples EV/EBITDA is used; for Retail EV/Sales is used; for Financials Price/Book Value is used. For remaining sectors Price/Earnings is used. If results exceed 20 companies, those with the greatest discounts to historicals are selected.

This screen is not a recommended list either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decision. Fundamental ratings are shown only for information and are not part of the screening criteria



Stock screens methodology

Our monthly screens are a quantitative approach for monitoring performance across several investment strategies. The screens are generated through a quantitative process, using consensus projections and historical data. There are two main steps to the selection process: filtering and ranking. For each screening process, filter criteria is applied first, then resulting assets are ranked according to the core variable for each strategy. Each month, we select and rank the 20 stocks that best fit the screen criteria. The stocks are selected from our universe of coverage in LatAm regardless of the rating but must have a market cap above US\$1bn.

There are 5 different screens: Growth, Value, Dividends, Defensive and High Beta. Our Growth screen looks for companies with high projected growth that reinvests free cash flow. Our Value screen looks for companies with low or moderate leverage that are trading at a discounted valuation. The Dividends screen looks for companies with high dividend yields, supported by low moderate leverage. Defensive screen looks for assets with solid performance and lowest volatility while High beta screen looks for market-dependent assets with high leverage and volatility. We also provide a list of stocks within our coverage that are most discounted to historicals.



Out-of-consensus

Our out-of-consensus rank identifies companies where our estimates most diverge from consensus, according to EPS, (current and next year), EBITDA (current and next year), Sales (current and next year), ROE (current and next year) and Price Objective. Details on how the views are ranked at the end of this section.

Our out of consensus highlights can fall in one of the following categories: Out of consensus in an upwards direction: stocks with a positive out of consensus Rank and BofA Buy rating, but less than 50% Buy ratings from consensus.

Out of consensus in a downwards direction: stocks with a negative out of consensus Rank and BofA Neutral/Underperform rating, but more than 50% Buy ratings from consensus.

Exhibit 33: Top out of consensus stocks

Buy-rated stocks with a positive out of consensus ranking. The 4 stocks highlighted are non-consensus Buy-rated stocks.

							Co	onsens	us					
Company name	BBG ticker	BofA ticker	Sector	Market Cap	Rank	BofA Rating		Rating		EPS Crncy	2023	B EPS	2024	I EPS
				USDmn			Buy	Hold	Sell		BofA	Cons.	BofA	Cons.
Rede D'Or	RDOR3 BZ	XPUSF	Health Care	13,357	9.9	BUY	73%	27%	0%	BRL	1.1	0.9	1.7	1.4
Hapvida	HAPV3 BZ	XDUFF	Health Care	5,804	9.6	BUY	79%	21%	0%	BRL	0.1	0.0	0.2	0.1
Petro Rio	PRIO3 BZ	HRTPF	Energy	6,278	9.5	BUY	94%	6%	0%	USD	1.8	1.3	2.6	1.9
Cosan SA	CSAN3 BZ	CSAIF	Energy	5,864	9.2	BUY	67%	27%	7%	BRL	1.1	0.9	1.4	1.4
Coca-Cola Femsa	KOFUBL MM	COCSF	C. Staples	17,865	9.1	BUY	40%	53%	7%	MXN	10.5	9.0	12.7	10.4
Bimbo	BIMBOA MM	GRBMF	C. Staples	23,310	8.9	BUY	29%	57%	14%	MXN	5.0	4.4	6.1	5.0
Meliuz S.A	CASH3 BZ	XPZXF	Telecom	143	8.8	BUY	38%	63%	0%	BRL	0.0	0.0	0.1	0.1
Arca	AC* MM	EMBVF	C. Staples	17,208	8.7	BUY	63%	32%	5%	MXN	11.9	10.1	14.0	11.1
GCC, S.A.B. de C.V.	GCC* MM	GCWOF	Materials	2,599	8.6	BUY	92%	8%	0%	USD	0.6	0.6	0.7	0.6
VTEX	VTEX US	VTEX	Telecom	765	8.5	BUY	60%	40%	0%	USD	0.0	-0.1	0.1	0.0
Intercorp Financial	IFS US	IFS	Financials	2,540	8.4	BUY	64%	36%	0%	PEN	14.2	14.2	16.2	16.0
Orbia AC	ORBIA* MM	MXCHF	Materials	4,379	8.1	BUY	73%	27%	0%	USD	0.3	0.2	0.3	0.2
Vitru Limited	VTRU US	VTRU	C. Discretionary	542	8.0	BUY	71%	29%	0%	BRL	8.9	6.8	14.0	10.6
Fomento Econ. Mex.	FEMSAUBD MM	FMXUF	C. Staples	31,356	7.8	BUY	93%	7%	0%	MXN	8.2	12.7	9.3	10.6
Fleury	FLRY3 BZ	XPOXF	Health Care	1,729	7.7	BUY	23%	62%	15%	BRL	1.3	1.1	1.6	1.3

Highlighted rows: Out of consensus in an upwards direction. Stocks with a positive out of consensus Rank and BofA and a Buy rating, but less than 50% Buy ratings from consensus.

This screen is not a recommended list either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decision

Source: BofA Global Research, Bloomberg



Exhibit 34: Bottom out of consensus stocks

Neu/und-rated stocks with a negative out of consensus ranking. 8 NEU/UND rated stocks according to BofA are buy-rated by most of consensus (highlighted).

							Co	nsens	us									
Company name	BBG ticker	BofA ticker	Sector	Market Cap	Rank	BofA Rating	Rating		Rating		Rating		Rating E		2023	EPS	2024	1 EPS
				USDmn			Buy	Hold	Sell		BofA	Cons.	BofA	Cons.				
Cia Paranaense	CPLE6 BZ	XLPUF	Utilities	4,037	-9.7	NEU	75%	25%	0%	BRL	0.7	0.8	0.6	0.9				
Randon	RAPT4 BZ	RPRTF	Industrials	658	-9.6	NEU	67%	33%	0%	BRL	1.4	1.4	1.3	1.8				
Liverpool	LIVEPOLC MM	ELPQF	C. Discretionary	8,154	-9.5	UND	41%	41%	18%	MXN	11.4	13.1	12.4	13.9				
Cyrela Brazil	CYRE3 BZ	XCBMF	C. Discretionary	1,484	-9.2	UND	81%	13%	6%	BRL	2.1	2.1	1.6	2.4				
Carrefour Brasil	CRFB3 BZ	XLDPF	C. Staples	4,138	-9.0	NEU	44%	56%	0%	BRL	0.9	0.6	1.2	1.2				
Even	EVEN3 BZ	EVCNF	C. Discretionary	264	-8.8	UND	33%	56%	11%	BRL	0.8	0.7	0.6	0.9				
Camil Alimentos	CAML3 BZ	XSREF	C. Staples	486	-8.5	NEU	75%	25%	0%	BRL	0.9	1.1	1.2	1.2				
lochpe-Maxion	MYPK3 BZ	IOCJF	Industrials	380	-8.2	UND	30%	60%	10%	BRL	1.2	2.0	2.3	3.0				
Alsea	ALSEA* MM	ALSSF	C. Discretionary	2,309	-7.8	UND	70%	20%	10%	MXN	1.8	2.7	2.4	3.8				
WEG	WEGE3 BZ	WGSEF	Industrials	32,796	-7.3	NEU	63%	31%	6%	BRL	1.3	1.2	1.3	1.4				
EZ Tec SA	EZTC3 BZ	EZTCF	C. Discretionary	747	-7.1	UND	43%	43%	14%	BRL	1.6	1.5	2.1	1.8				
Movida	MOVI3 BZ	XMBDF	Industrials	764	-6.9	NEU	59%	35%	6%	BRL	0.0	0.3	0.7	1.3				
Assaí Atacadista	ASAI3 BZ	XFCXF	C. Staples	3,118	-6.8	NEU	81%	19%	0%	BRL	0.9	0.9	1.3	1.5				
Inbursa	GFINBURO MM	GPFOF	Financials	13,977	-6.5	UND	10%	10%	80%	MXN	4.9	4.5	5.0	4.4				

Highlighted rows: Out of consensus in a downwards direction. Stocks with a negative out of consensus Rank and BofA Neutral/Underperform rating, but more than 50% Buy ratings from consensus. This screen is not a recommended list either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decision.

Source: BofA Global Research, Bloomberg.

BofA GLOBAL RESEARCH

Out-of-Consensus Rank Methodology

Our Out-of-Consensus Rank is a -10;10 scale that measures where BofA analyst estimates are diverging from market consensus. The closer the rank is to the extremes, the farther BofA estimates are from market consensus, which is based on Bloomberg consensus estimates.

For all stocks within our coverage, we look at the following forecasts: EPS, (current and next year), EBITDA (current and next year), Sales (current and next year), ROE (current and next year) and Price Objective.

For each variable, the z-score is calculated as follows:

z-score = (BofA estimate - consensus estimate) / consensus estimate std dev

A z-score will be excluded from the sample if:

- Either BofA or consensus estimate is missing
- Number of estimates that make up the consensus is less than 3.
- Consensus has zero standard deviation
- For EPS, EBITDA and SALES, scores for both years are needed to avoid seasonality. If one year is missing the other will also be excluded.
- Z-score > 5. Such cases are probably because of lack of reliable data.
- ROE z-scores are only considered for financials

A company will be excluded from the sample if:

- Does not have a PO z-score
- It has a PO z-score but does not have a z-score for at least one other variable
- It has a PO z-score but does not have a ROE z-score (financials only)

For each variable, z-scores are ranked and scaled into [-10;10]. The most out of consensus the estimate is, the closer to the range boundaries. The average rank is computed for all companies. For any given company, the average rank will only consider the available variables. The average rank is then re-scaled again from -10 to 10 to obtain the final Out Of Consensus Rank.

This Out-of-Consensus Rank methodology was inspired by <u>Beat Factor – Global</u> iOanalytics





Disclosures

Important Disclosures

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 - Underperformstocks 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	Ratings dispersion guidelines for coverage cluster ^{R1}
	rating)	

Buy≥ 10%≤ 70%Neutral≥ 0%≤ 30%UnderperformN/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.

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

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

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

This report may refer to fixed income securities or other financial instruments that may not be offered or sold in one or more states or jurisdictions, or to certain categories of investors, including retail investors. Readers of this report are advised that any discussion, recommendation or other mention of such instruments is not a solicitation or offer to transact in such instruments. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor for information relating to such instruments. 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 Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudential Regulation Authority (PRA); BofASE (France): BofASE (Fr 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 SA, regulated by Comisión Nacional de Valores; BofAS Japan: BofA Securities Japan Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; BofAS India: BofA Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill Lynch (Israel): Merrill Lynch (Israel): Merrill Lynch (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 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



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.

its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information prepared and issued by Merrill Lynch (DIFC) is done so in accordance with the requirements of the DFSA conduct of business rules. BofA Europe (Frankfurt) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Europe and BofASE (France), may outsource/delegate the marketing and/or provision of certain research services or aspects of research services to other branches or members of the BofA Securities group. You may be contacted by a different BofA Securities entity acting for and on behalf of your service provider where permitted by applicable law. This does not change your service provider. Please refer to the Electronic Communications Disclaimers for further information.

This information has been prepared and issued by 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.

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.

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.

