

S&P 500 Relative Value Cheat Sheet

One more bullish indicator

A tale of two markets: cap-weighted vs. equal weighted

It's nearly impossible to be bullish on the market capitalization weighted S&P 500 on valuation – it trades expensive on 19 of 20 measures we track (Exhibit 8). Our Dividend Discount Model Equity Risk Premium is the only measure on which the US market trades inexpensive, aligned with our view that the risk premium for stocks may be too high and the so-called “risk-free” 10yr T-bond rate may be too low. But excluding the largest seven companies, or based on the equal weighted S&P 500, PE ratios are roughly at historical average levels (Exhibit 1 & Exhibit 2). Valuation is a powerful long-term forecasting tool, but sentiment has been more predictive of near-term returns, and analyst consensus long-term growth (LTG) expectations today suggest big gains.

Drop in long-term growth expectations indicate +25%

On PE to growth or PEG (price paid for future growth) the S&P 500 trades 3 std dev above average. This is largely due to consensus LTG expectations plummeting to near record lows of 7ppt. Low LTG has been bullish. In fact in November 2021, we cited lofty expectations as a bearish set-up (see [late 2021 bear note](#)), given the strong inverse relationship between LTG and future S&P 500 returns. Today's LTG suggests >25% price returns over the next 12 months for the S&P 500, all else equal (Exhibit 3).

The one exception: “TMT will grow twice as fast!”

Whereas most sectors' growth expectations have been slashed (Exhibit 4), Communication Services is one surprising exception where investors expect LTG to double to 15% per year from 7% over the last cycle. This is surprising as big increases in rates have been most negative for long duration sectors like Comm. Services.

“Energy will die a slow death”. We disagree.

Energy expectations have dropped most, in keeping with oil futures implying a 30% drop over the next three years. Energy has grown earnings 40% per year over the last 3 years. Energy companies have newfound supply discipline. Oil supply is constrained in general. But analysts pencil in significant losses (-7% per year) in earnings. Energy screens as #2 in our model, (Exhibit 56) where negative revisions are keeping it from #1. We are OW.

The bull case for beta and cyclicals isn't hard to make

Today's ~2% level in real rates, a post-GFC high, is still below the 50-year average real rate of 2.25%, and can move higher. Companies are focused on efficiency which is bullish for margin preservation, floating rate risk is de minimis, and macro data has inflected higher (see [regime note](#)). Capex is strong, and if Comm Services is going to grow even close to 2X as fast, incremental grid / infrastructure spend are necessary and should benefit Energy, Metals, Utilities and even Retail (stickier real wage growth). But the move in real rates has been cast as unequivocally bearish for stocks despite that rising rates have usually been accompanied by falling equity risk premia (Exhibit 6).

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.

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Refer to important disclosures on page 17 to 19.

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Equity and Quant Strategy
United States

Savita Subramanian

Equity & Quant Strategist
BofA
+1 646 855 3878
savita.subramanian@bofa.com

Ohsung Kwon, CFA

Equity & Quant Strategist
BofA
+1 646 855 1683
ohsung.kwon@bofa.com

Jill Carey Hall, CFA

Equity & Quant Strategist
BofA
+1 646 855 3327
jill.carey@bofa.com

Alex Makedon

Equity & Quant Strategist
BofA
+1 646 855 5982
alex.makedon@bofa.com

Victoria Roloff

Equity & Quant Strategist
BofA
+1 646 743 6339
victoria.roloff@bofa.com

Nicolas Woods

Equity & Quant Strategist
BofA
+1 646 556 4179
nicolas.woods_barron@bofa.com

ERP = Equity Risk Premium

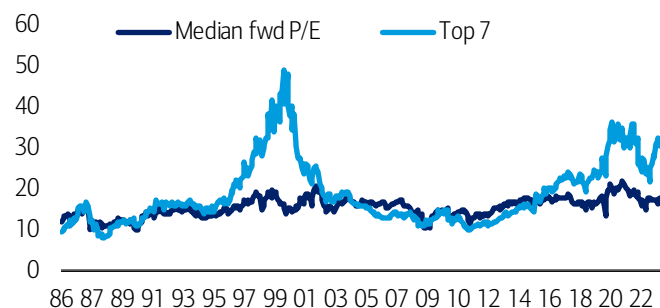
LTG = Long-term Growth

GFC = Global Financial Crisis

OW = overweight

Exhibit 1: Equal-weighted S&P 500 trades in line with the historical average, both on fwd P/E...

S&P 500 median fwd P/E vs. top 7 P/E (1986-8/23)

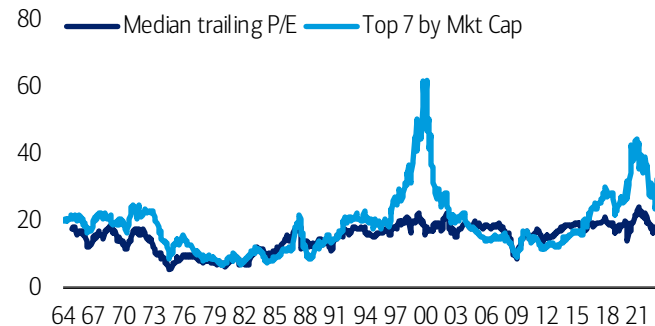


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 2: ...and on trailing P/E

S&P 500 median trailing P/E vs. top 7 P/E (1986-8/23)

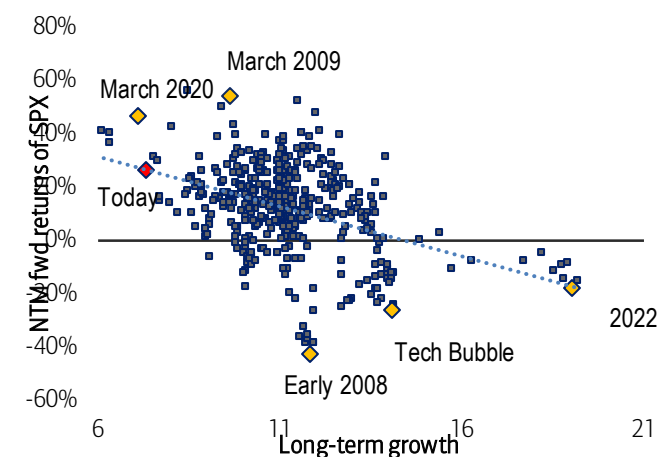


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 3: Low long-term earnings growth expectations suggest outsized equity market returns

Long-term growth rates vs. forward 12 month returns



Source: BofA US Equity Strategy & Quantitative Strategy

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Exhibit 4: Consensus growth expectations are most bearish on Energy, most bullish on Communication Services

Consensus long-term growth vs. trailing 5-yr earnings growth (as of 8/23)

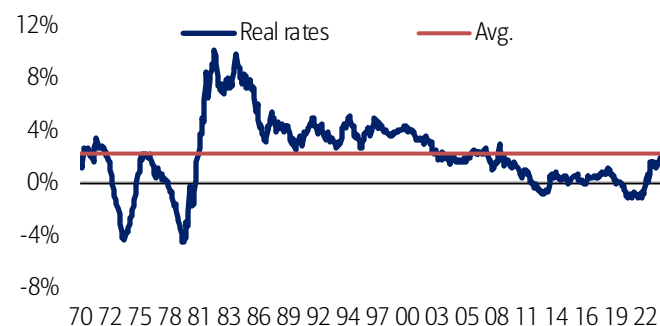
	Trailing 5-yr growth	Long-term growth (LTG) expected	LTG expected 1 yr ago
Energy	40%	-7%	20%
Materials	17%	-1%	3%
Utilities	3%	3%	6%
Health Care	13%	4%	4%
Staples	7%	6%	7%
Real Estate	6%	6%	7%
S&P 500	12%	7%	11%
Financials	10%	9%	10%
Tech	15%	10%	12%
Cons. Disc.	8%	12%	28%
Industrials	6%	14%	19%
Comm. Svcs.	7%	15%	8%

Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 5: Real rates are higher vs. last 10 years but not vs last 50yrs

10-yr real rates since 1970 (as of 8/23)



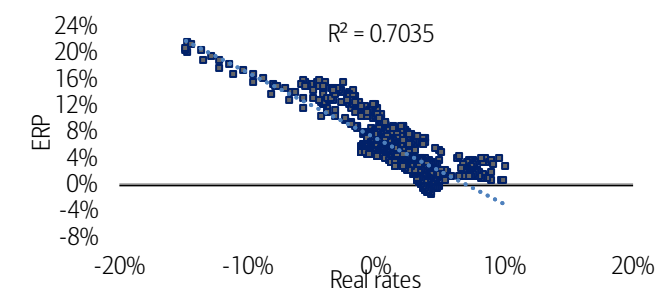
Source: Global Financial Data, Bloomberg, BofA US Equity & Quant Strategy

Note: Real rates are based on 10-yr breakevens after Aug. 1998 and fwd 1-yr CPI prior to that

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Exhibit 6: Higher rates have been accompanied by lower ERP (good for higher beta equities)

Historical relationship between our normalized ERP vs. real rates (1945-8/23)



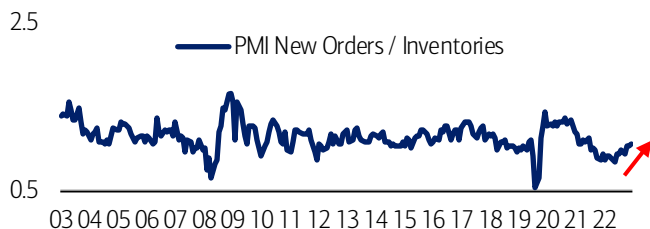
Source: BofA US Equity & Quant Strategy, Global Financial Data, Bloomberg

Note: See [Target Update](#) for details on calculations.

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Exhibit 7: De-stocking cycle turn: orders rising, inventories falling

ISM Manufacturing PMI new orders vs. inventories (2003-8/23)



Source: Bloomberg, BofA US Equity & Quant Strategy

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S&P 500: cheap or expensive?**Exhibit 8: S&P 500 Valuations – shading indicates that metric is statistically expensive relative to history (as of 8/23)**

S&P 500 valuation metrics

Metric	Current	Average	Avg. ex. Tech Bubble	Min	Max	% Above (below) avg	Z-Score	History
Trailing PE	20.5	14.8	14.5	5.2	30.5	38.3%	1.2	1960-present
Trailing GAAP PE	24.9	15.1	14.8	4.2	122.4	64.7%	1.1	1832-present
Forward Consensus PE	19.6	15.8	15.0	9.8	25.1	24.2%	1.1	1986-present
Trailing Normalized PE	22.6	19.1	17.8	9.2	34.5	18.8%	0.7	9/1987-present
Median Forward P/E	17.6	15.5	15.3	10.0	21.9	13.5%	0.9	1986-present
Shiller PE	30.8	17.4	16.8	4.8	44.2	77.2%	1.9	1881-present
P/BV	4.37	2.66	2.48	0.98	5.34	64.5%	1.7	1978-present
EV/EBITDA	13.8	10.5	10.2	6.0	17.1	31.1%	1.4	1986-present
Trailing PEG	2.79	1.67	1.64	1.05	3.24	67.6%	3.2	1986-present
Forward PEG	2.67	1.43	1.40	0.93	3.50	86.5%	3.4	1986-present
P/OCF	16.5	11.3	10.7	5.4	19.3	46.6%	1.6	1986-present
P/FCF	28.8	27.8	25.0	12.9	65.7	3.5%	0.1	1986-present
EV/Sales	2.78	1.97	1.91	0.86	3.40	40.8%	1.4	1986-present
ERP (Market-Based)	584	504	521	136	880	15.8%	-0.4	11/1980-present
Normalized ERP	276	348	395	-143	880	-20.9%	0.3	1987-present
S&P 500 Div. Yld. vs. 10yr Tsy. Yld.	0.35	1.23	1.25	0.17	4.20	-71.5%	1.4	1792-present
S&P 500 in WTI terms	55.4	26.7	24.4	2.7	175.3	107.4%	1.5	1960-present
S&P 500 in Gold terms	2.32	1.64	1.42	0.17	5.48	41.4%	0.6	1968-present
S&P 500 vs. R2000 Fwd. P/E	1.44	1.03	0.99	0.76	1.70	39.8%	2.1	1986-present
S&P 500 Market Cap/GDP	1.41	0.66	0.63	0.22	1.66	113.5%	2.2	1964-present

*Above average implied equities are attractive relative to bonds. Note: Trailing P/E based on GAAP EPS from 1960-77, Operating EPS from 1978-87, Pro forma EPS 1988-now. Trailing GAAP P/E based on GAAP P/E for entire series. Market-based ERP based on DDM-implied S&P 500 return less AAA corp bond yield. Normalized ERP based on normalized EPS yield less normalized real risk-free rate.

Source: S&P, Compustat, Bloomberg, FactSet/First Call, BofA US Equity & Quant Strategy

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Exhibit 9: Relative valuation (vs. S&P 500) by sector (based on data from 1986 - 8/23)

Relative price to book, price to operating cash flow, price to earnings by sector

Sector	Price to Book (Relative)			Price to Operating Cash Flow (Relative)			Forward P/E (Relative)		
	Current	Average	Implied upside	Current	Average	Implied upside	Current	Average	Implied upside
S&P 500 (absolute metrics)	4.37	2.95	-33%	16.50	11.24	-32%	19.07	15.78	-17%
Consumer Discretionary	2.18	1.36	-38%	1.14	0.91	-20%	1.35	1.05	-22%
Consumer Staples	1.33	1.69	27%	1.01	1.27	26%	1.03	1.13	10%
Energy	0.55	0.77	40%	0.38	0.73	90%	0.62	1.05	69%
Financials	0.43	0.59	37%	N/A	N/A	N/A	0.72	0.77	8%
Health Care	1.10	1.70	54%	0.96	1.57	63%	0.92	1.09	19%
Industrials	1.24	1.16	-7%	0.97	1.01	5%	0.98	1.01	4%
Information Technology	2.52	1.49	-41%	1.55	1.23	-21%	1.41	1.12	-21%
Materials	0.67	0.90	35%	0.78	0.89	14%	0.93	1.04	11%
Real Estate	0.64	0.87	36%	N/A	N/A	N/A	0.85	1.54	81%
Communication Services	0.87	1.00	14%	0.73	0.84	15%	0.90	1.18	31%
Utilities	0.44	0.60	37%	0.71	0.65	-10%	0.83	0.89	7%

Source: Compustat, First Call, BofA US Equity & US Quant Strategy

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See page 19 for definitions of valuation measures.



Sector valuations

Consumer Discretionary

Exhibit 10: Relative Valuation (vs. S&P 500) for Consumer Discretionary industries (based on data from 1986-8/23)

Consumer Discretionary relative price to book, price to operating cash flow, price to earnings by industry

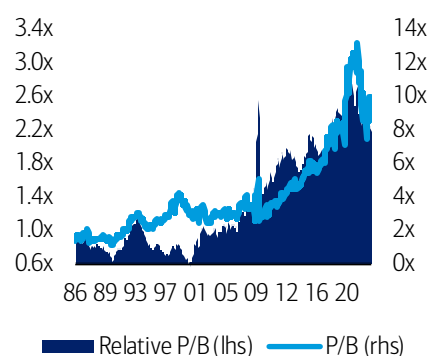
Consumer Discretionary (# of co's)	Price to Book (Relative)			Price to Operating Cash Flow (Relative)			Forward P/E (Relative)		
	Current	Average	Implied upside	Current	Average	Implied upside	Current	Average	Implied upside
Automobile Components (2)	0.51	0.78	54%	0.66	0.78	18%	0.76	0.81	7%
Automobiles (3)	1.36	0.84	-38%	1.25	0.28	-77%	1.57	0.67	-57%
Distributors (3)	1.00	1.10	10%	0.95	1.14	19%	0.85	1.01	18%
Hotels Restaurants & Leisure (17)	517.15	1.51	-100%	1.07	1.14	7%	1.11	1.22	9%
Household Durables (8)	0.44	0.73	65%	0.59	1.04	75%	0.51	0.80	58%
Broadline Retail (3)	1.93	1.01	-48%	1.37	1.05	-23%	2.41	1.15	-52%
Leisure Products (1)	0.93	1.15	23%	1.76	0.96	-45%	0.81	0.91	13%
Specialty Retail (12)	85.68	1.66	-98%	0.95	1.28	34%	1.03	1.12	8%
Textiles Apparel & Luxury Goods (4)	1.96	1.21	-38%	1.50	1.32	-12%	1.11	1.01	-9%

Source: Compustat, First Call, BofA US Equity & US Quant Strategy

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Exhibit 11: Consumer Discretionary P/B at 9.5x vs. 4.1x historical average, 1986-08/23

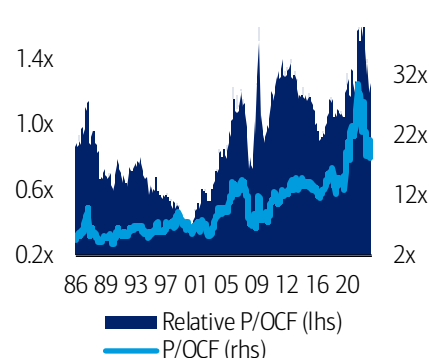
Consumer Discretionary price-to-book and relative price-to-book vs. S&P 500



Source: Compustat, BofA US Equity & US Quant Strategy
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Exhibit 12: Consumer Discretionary P/OCF at 18.8x vs. 10.3x historical average, 1986-08/23

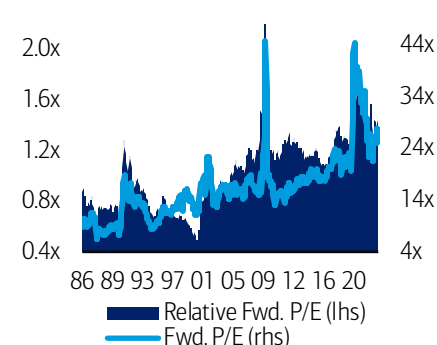
Consumer Discretionary price-to-operating cash flow and relative price-to-op. cash flow vs. S&P 500



Source: Compustat, BofA US Equity & US Quant Strategy
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Exhibit 13: Consumer Discretionary fwd P/E at 25.8x vs. 16.6x historical average, 1986-08/23

Consumer Discretionary price-to-fwd earnings and relative price-to-fwd earnings vs. S&P 500



Source: Compustat, BofA US Equity & US Quant Strategy
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Consumer Staples

Exhibit 14: Relative Valuation (vs. S&P 500) for Consumer Staples industries (based on data from 1986-8/23)

Consumer Staples relative price to book, price to operating cash flow, price to earnings by industry

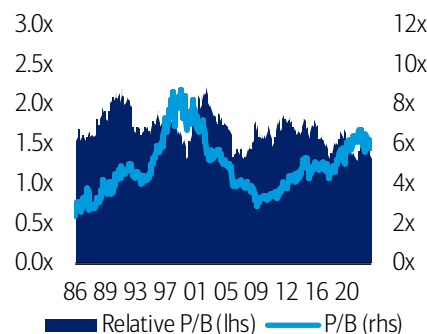
Consumer Staples (# of co's)	Price to Book (Relative)			Price to Operating Cash Flow (Relative)			Forward P/E (Relative)		
	Current	Average	Implied upside	Current	Average	Implied upside	Current	Average	Implied upside
Beverages (7)	1.60	2.07	30%	1.41	1.49	6%	1.17	1.29	11%
Consumer Staples Distribution & Retail (8)	1.30	1.38	6%	0.78	1.08	39%	1.12	1.16	3%
Food Products (14)	0.53	1.20	128%	0.96	1.22	27%	0.82	1.07	30%
Household Products (5)	2.37	1.80	-24%	1.27	1.35	7%	1.22	1.18	-4%
Personal Care Products (1)	1.40	2.91	108%	1.51	1.74	15%	1.24	1.38	11%
Tobacco (2)	-3.86	2.47	NM	0.79	0.96	22%	0.61	0.75	22%

Source: Compustat, First Call, BofA US Equity & US Quant Strategy

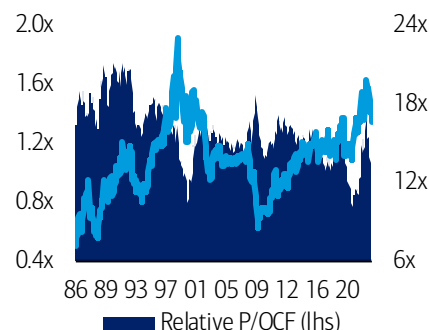
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Exhibit 15: Consumer Staples P/B at 5.8x vs. 4.9x historical average, 1986-08/23

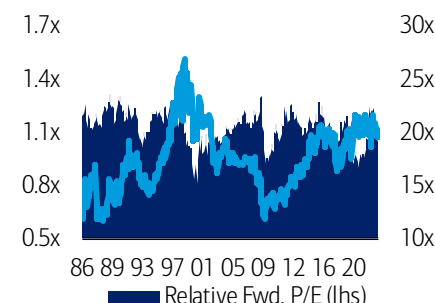
Consumer Staples price-to-book and relative price-to-book vs. S&P 500

Source: Compustat, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH**Exhibit 16: Consumer Staples P/OCF at 16.6x vs. 13.8x historical average, 1986-08/23**

Consumer Staples price-to-op. cash flow and relative price-to-op. cash flow vs. S&P 500

Source: Compustat, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH**Exhibit 17: Consumer Staples fwd P/E at 19.6x vs. 17.6x historical average, 1986-08/23**

Consumer Staples price-to-fwd earnings and relative price-to-fwd earnings vs. S&P 500

Source: Compustat, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH**Energy****Exhibit 18: Relative Valuation (vs. S&P500) for Energy industries (based on data from 1986-8/23)**

Energy relative price to book, price to operating cash flow, price to earnings by industry

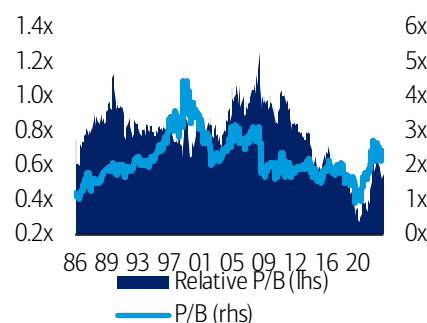
Energy (# of co's)	Price to Book (Relative)			Price to Operating Cash Flow (Relative)			Forward P/E (Relative)		
	Current	Average	Implied upside	Current	Average	Implied upside	Current	Average	Implied upside
Energy Equipment & Services (3)	0.85	0.83	-1%	0.86	1.22	42%	0.83	1.31	57%
Oil Gas & Consumable Fuels (20)	0.53	0.71	32%	0.36	0.65	80%	0.61	0.92	51%

Source: Compustat, First Call, BofA US Equity & Quant Strategy

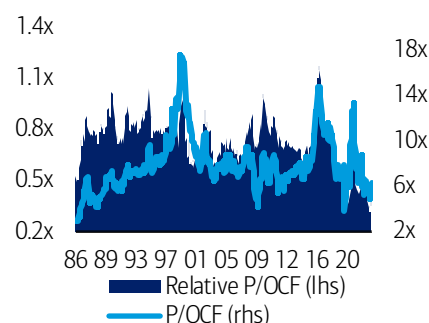
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Exhibit 19: Energy P/B at 2.4x vs. 2.2x historical average, 1986-08/23

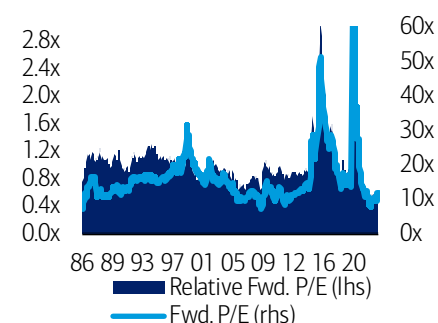
Energy price-to-book and relative price-to-book vs. S&P 500

Source: Compustat, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH**Exhibit 20: Energy P/OCF at 6.3x vs. 8.0x historical average, 1986-08/23**

Energy price-to-op. cash flow and relative price-to-op. cash flow vs. S&P 500

Source: Compustat, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH**Exhibit 21: Energy fwd P/E at 11.9x vs. 16.8x historical average, 1986-08/23**

Energy price-to-fwd earnings and relative price-to-fwd earnings vs. S&P 500

Source: Compustat, BofA US Equity & US Quant Strategy
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Financials

Exhibit 22: Relative Valuation (vs. S&P 500) for Financials industries (based on data from 1986-8/23)

Financials relative price to book, price to operating cash flow, price to earnings by industry

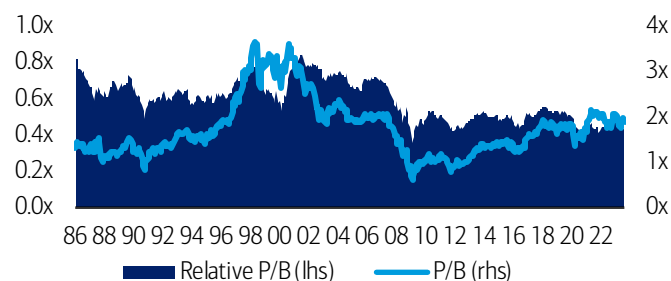
Financials (# of co's)	Price to Book (Relative)			Price to Operating Cash Flow (Relative)			Forward P/E (Relative)		
	Current	Average	Implied upside	Current	Average	Implied upside	Current	Average	Implied upside
Capital Markets (21)	0.52	0.56	7%	N/A	N/A	N/A	0.81	0.75	-7%
Banks (16)	0.23	0.50	115%	N/A	N/A	N/A	0.46	0.68	49%
Consumer Finance (4)	0.44	0.75	72%	N/A	N/A	N/A	0.52	0.79	52%
Financial Services (9)	0.66	0.68	3%	N/A	N/A	N/A	1.10	0.85	-22%
Insurance (23)	0.52	0.50	-4%	N/A	N/A	N/A	0.64	0.75	16%

Source: Compustat, First Call, BofA US Equity & US Quant Strategy

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Exhibit 23: Financials P/B at 1.9x vs. 1.8x historical average, 1986-08/23

Financials price-to-book and relative price-to-book vs. S&P 500

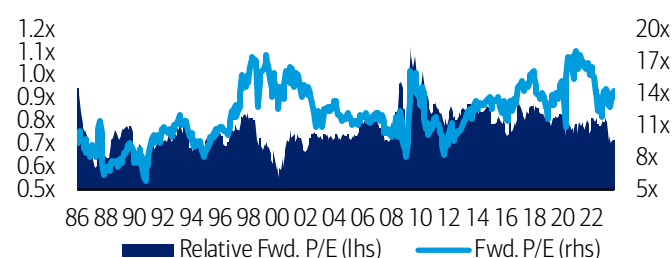


Source: Compustat, BofA US Equity & US Quant Strategy

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Exhibit 24: Financials fwd P/E at 13.7x vs. 12.1x historical average, 1986-08/23

Financials price-to-fwd earnings and relative price-to-fwd earnings vs. S&P 500



Source: Compustat, BofA US Equity & US Quant Strategy

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Health Care

Exhibit 25: Relative Valuation (vs. S&P 500) for Health Care industries (based on data from 1986 – 8/23)

Health Care relative price to book, price to operating cash flow, price to earnings by industry

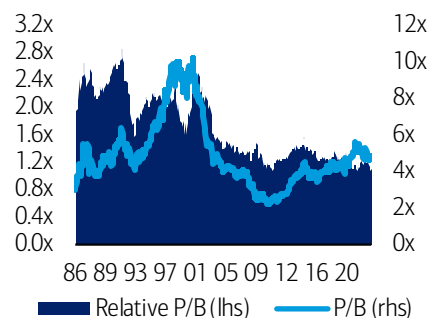
Health Care (# of co's)	Price to Book (Relative)			Price to Operating Cash Flow (Relative)			Forward P/E (Relative)		
	Current	Average	Implied upside	Current	Average	Implied upside	Current	Average	Implied upside
Biotechnology (8)	1.53	2.25	47%	0.83	1.45	74%	0.83	1.15	38%
Health Care Equipment & Supplies (20)	1.01	1.33	31%	1.75	1.63	-7%	1.27	1.22	-4%
Health Care Providers & Services (16)	0.82	1.07	30%	0.48	1.05	121%	0.71	0.90	27%
Life Sciences Tools & Services (12)	1.06	0.94	-11%	1.62	1.42	-13%	1.36	1.13	-17%
Pharmaceuticals (9)	1.33	1.65	24%	1.38	1.47	6%	0.87	1.01	16%

Source: Compustat, First Call, BofA US Equity & US Quant Strategy

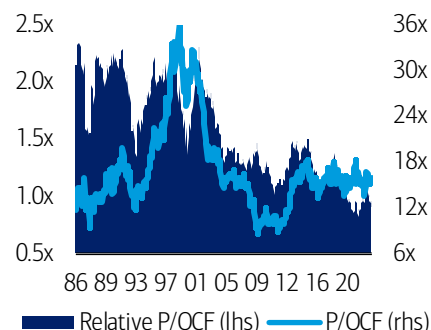
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Exhibit 26: Health Care P/B at 4.8x vs. 4.9x historical average, 1986-08/23

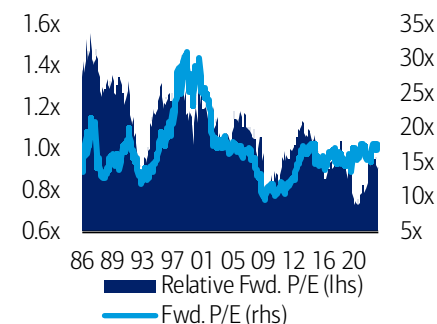
Health Care price-to-book and relative price-to-book vs. S&P 500

Source: Compustat, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH**Exhibit 27: Health Care P/OCF at 15.9x vs. 17.1x historical average, 1986-08/23**

Health Care price-to-op. cash flow and relative price-to-op. cash flow vs. S&P 500

Source: Compustat, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH**Exhibit 28: Health Care fwd P/E at 17.5x vs. 17.0x historical average, 1986-08/23**

Health Care price-to-fwd earnings and relative price-to-fwd earnings vs. S&P 500

Source: Compustat, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH**Industrials****Exhibit 29: Relative Valuation (vs. S&P 500) for Industrials industries (based on data from 1986-8/23)**

Industries relative price to book, price to operating cash flow, price to earnings by industry

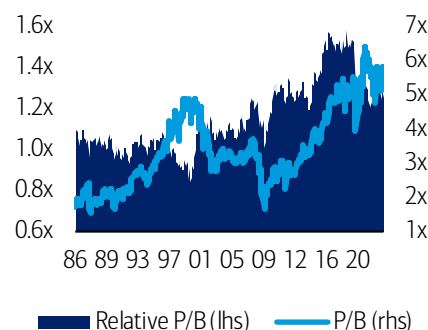
Industrials (# of co's)	Price to Book (Relative)			Price to Operating Cash Flow (Relative)			Forward P/E (Relative)		
	Current	Average	Implied upside	Current	Average	Implied upside	Current	Average	Implied upside
Aerospace & Defense (10)	1.12	1.01	-10%	1.08	1.03	-5%	1.09	0.89	-19%
Air Freight & Logistics (4)	1.11	1.07	-4%	0.61	0.73	20%	0.85	0.99	17%
Passenger Airlines (5)	0.69	0.70	2%	0.20	0.51	150%	0.31	1.04	236%
Building Products (6)	1.18	1.07	-9%	1.22	1.10	-9%	0.96	0.94	-2%
Commercial Services & Supplies (5)	1.84	1.28	-31%	1.23	0.96	-22%	1.52	1.14	-25%
Construction & Engineering (1)	1.24	0.76	-39%	1.73	1.31	-25%	1.38	0.84	-39%
Electrical Equipment (5)	1.01	1.13	12%	1.67	1.23	-26%	1.19	1.03	-14%
Industrial Conglomerates (3)	1.27	1.22	-4%	1.08	0.99	-8%	1.03	1.10	7%
Machinery (17)	1.12	1.00	-11%	1.11	1.03	-7%	0.84	0.91	8%
Professional Services (9)	2.06	1.60	-23%	1.58	1.54	-2%	1.43	1.33	-7%
Ground Transportation (5)	1.56	0.76	-51%	0.84	0.71	-15%	1.00	0.89	-11%
Trading Companies & Distributors (3)	1.71	1.17	-31%	0.82	1.09	33%	0.89	0.98	10%

Source: Compustat, First Call, BofA US Equity & US Quant Strategy

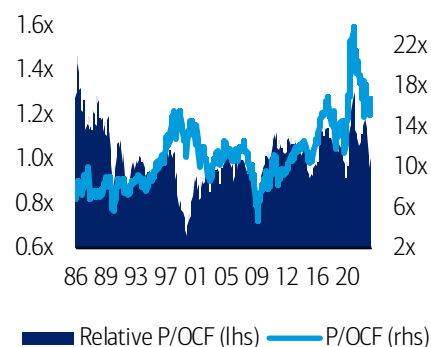
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Exhibit 30: Industrials P/B at 5.4x vs. 3.4x historical average, 1986-08/23

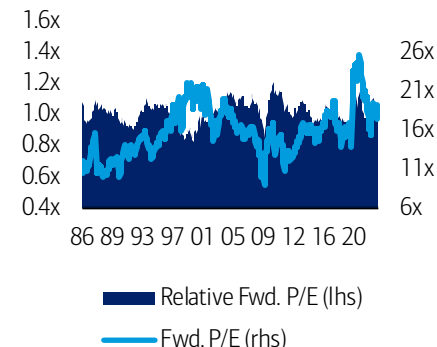
Industrials price-to-book and relative price-to-book vs. S&P 500

Source: Compustat, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH**Exhibit 31: Industrials P/OCF at 16.0x vs. 11.3x historical average, 1986-08/23**

Industrials price-to-op. cash flow and relative price-to-op. cash flow vs. S&P 500

Source: Compustat, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH**Exhibit 32: Industrials fwd P/E at 18.6x vs. 15.9x historical average, 1986-08/23**

Industrials price-to-fwd earnings and relative price-to-fwd earnings vs. S&P 500

Source: Compustat, BofA US Equity & US Quant Strategy
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Information Technology

Exhibit 33: Relative Valuation (vs. S&P500) for information Technology industries (based on data from 1986-8/23)

Information Technology relative price to book, price to operating cash flow, price to earnings by industry

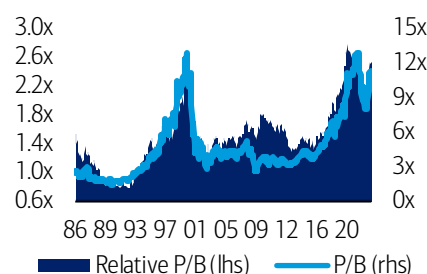
Information Technology (# of co's)	Price to Book (Relative)			Price to Operating Cash Flow (Relative)			Forward P/E (Relative)		
	Current	Average	Implied upside	Current	Average	Implied upside	Current	Average	Implied upside
Communications Equipment (5)	1.51	1.24	-18%	0.92	1.37	48%	0.85	1.16	35%
Electronic Equipment Instruments & Components (8)	0.98	0.97	-1%	1.19	1.30	9%	1.04	1.13	8%
IT Services (8)	1.51	1.38	-8%	0.94	0.87	-8%	1.04	0.93	-11%
Semiconductors & Semiconductor Equipment (21)	1.71	1.25	-27%	1.80	1.11	-38%	1.46	1.08	-26%
Software (18)	2.65	2.14	-19%	1.69	1.61	-5%	1.53	1.30	-15%
Technology Hardware Storage & Peripherals (6)	7.97	1.30	-84%	1.51	1.19	-21%	1.45	1.04	-29%

Source: Compustat, First Call, BofA US Equity & US Quant Strategy

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Exhibit 34: Tech P/B at 11.0x vs. 4.4x historical average, 1986-08/23

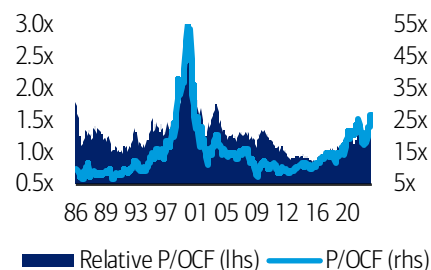
Information Technology price-to-book and relative price-to-book vs. S&P 500



Source: Compustat, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH

Exhibit 35: Tech P/OCF at 25.6x vs. 13.3x historical average, 1986-08/23

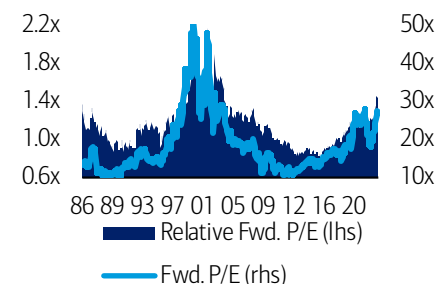
Information Technology price-to-op. cash flow and relative price-to-op. cash flow vs. S&P 500



Source: Compustat, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH

Exhibit 36: Tech fwd P/E at 26.9x vs. 17.5x historical average, 1986-08/23

Information Technology price-to-fwd earnings and relative price-to-fwd earnings vs. S&P 500



Source: Compustat, BofA US Equity & US Quant Strategy
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Materials

Exhibit 37: Relative Valuation (vs. S&P 500) for Materials industries (based on 1986-8/23)

Materials relative price to book, price to operating cash flow, price to earnings by industry

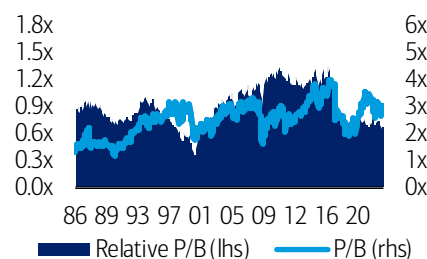
Materials (# of co's)	Price to Book (Relative)			Price to Operating Cash Flow (Relative)			Forward P/E (Relative)		
	Current	Average	Implied upside	Current	Average	Implied upside	Current	Average	Implied upside
Chemicals (16)	0.70	1.03	48%	0.93	0.94	1%	0.97	1.07	10%
Construction Materials (2)	0.89	0.75	-16%	1.35	1.27	-6%	1.34	1.60	19%
Containers & Packaging (7)	0.61	0.81	33%	0.59	0.77	29%	0.83	0.88	5%
Metals & Mining (4)	0.54	0.62	15%	0.46	0.72	57%	0.75	0.92	21%

Source: Compustat, First Call, BofA US Equity & US Quant Strategy

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Exhibit 38: Materials P/B at 2.9x vs. 2.5x historical average, 1986-08/23

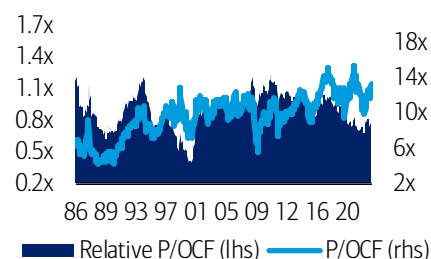
Materials price-to-book and relative price-to-book vs. S&P 500



Source: Compustat, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH

Exhibit 39: Materials P/OCF at 12.9x vs. 9.8x historical average, 1986-08/23

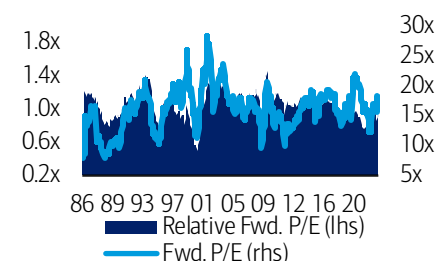
Materials price-to-op. cash flow and relative price-to-op. cash flow vs. S&P 500



Source: Compustat, BofA US Equity & US Quant Strategy
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Exhibit 40: Materials fwd P/E at 17.8x vs. 16.2x historical average, 1986-08/23

Materials price-to-fwd earnings and relative price-to-fwd earnings vs. S&P 500



Source: Compustat, BofA US Equity & US Quant Strategy
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Real Estate

Exhibit 41: Relative Valuation (vs. S&P 500) for Real Estate industries (based on data from 2001-8/23)

Real Estate relative price to book, price to operating cash flow, price to earnings by industries

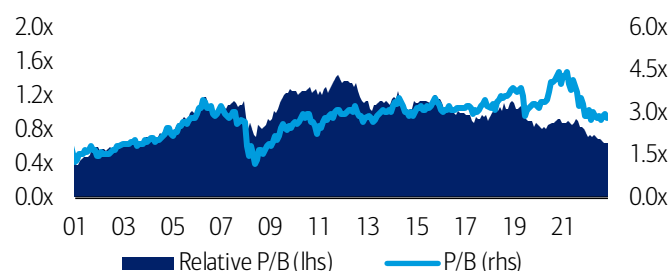
Real Estate (# of co's)	Price to Book (Relative)			Price to Operating Cash Flow (Relative)			Forward P/E (Relative)**		
	Current	Average	Implied upside	Current	Average	Implied upside	Current	Average	Implied upside
Health Care Reits (3)	0.42	0.62	47%	N/A	N/A	N/A	0.89	0.96	9%
Hotel & Resort Reits (1)	0.37	0.73	96%	N/A	N/A	N/A	0.44	0.98	123%
Industrial Reits (1)	0.48	0.53	10%	N/A	N/A	N/A	1.16	1.51	30%
Office Reits (2)	0.28	0.76	177%	N/A	N/A	N/A	0.57	1.09	90%
Real Estate Management & Development (1)	0.77	0.92	20%	N/A	N/A	N/A	0.89	0.99	10%
Residential Reits (7)	0.55	0.82	49%	N/A	N/A	N/A	0.86	1.11	29%
Retail Reits (5)	0.45	1.11	144%	N/A	N/A	N/A	0.61	0.86	41%
Specialized Reits (10)	1.17	0.84	-28%	N/A	N/A	N/A	0.93	1.62	75%

Source: Compustat, First Call, BofA US Equity & US Quant Strategy

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Exhibit 42: Real Estate P/B at 2.8x vs. 2.4x historical average, 1986-08/23

Real Estate price-to-book and relative price-to-book vs. S&P 500

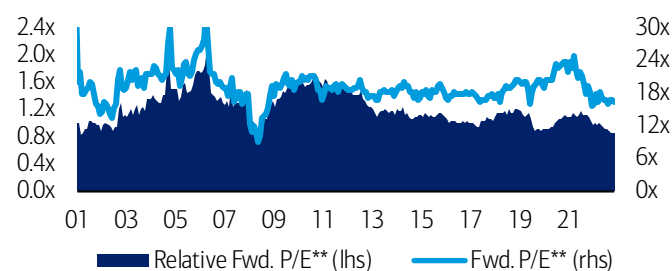


Source: Compustat, BofA US Equity & US Quant Strategy

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Exhibit 43: Real Estate fwd P/E at 16.3x vs. 23.8x historical average, 1986-08/23

Real Estate price-to-fwd EPS and relative price-to-fwd EPS vs. S&P 500



Source: Compustat, BofA US Equity & US Quant Strategy

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Communication Services

Exhibit 44: Relative Valuation (vs. S&P 500) for Communication Services industries (based on data from 1986-8/23)

Communication Services relative price to book, price to operating cash flow, price to earnings by industry

Comm. Svcs (# of co's)	Price to Book (Relative)			Price to Operating Cash Flow (Relative)			Forward P/E (Relative)		
	Current	Average	Implied upside	Current	Average	Implied upside	Current	Average	Implied upside
Diversified Telecommunication Services (2)	0.30	0.78	161%	0.21	0.52	151%	0.35	0.83	134%
Media (8)	0.54	0.91	67%	0.44	0.92	108%	0.62	1.35	119%
Entertainment (7)	0.60	0.90	50%	1.40	1.33	-5%	1.29	1.49	16%
Interactive Media & Services (3)	1.46	1.33	-8%	0.98	1.48	51%	1.08	1.71	58%

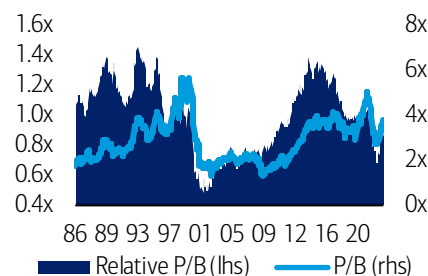
Source: Compustat, First Call, BofA US Equity & US Quant Strategy

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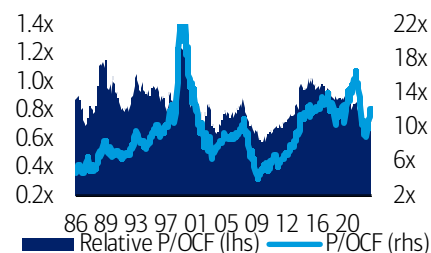


Exhibit 45: Communication Services P/B at 3.8x vs. 2.9x historical average, 1986-08/23

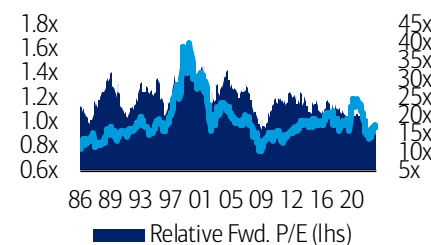
Communication Services price-to-book and relative price-to-book vs. S&P 500

Source: Compustat, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH**Exhibit 46: Communication Services P/OCF at 12.1x vs. 9.5x historical average, 1986-08/23**

Communication Services price-to-op. cash flow and relative price-to-op. cash flow vs. S&P 500

Source: Compustat, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH**Exhibit 47: Communication Services fwd P/E at 17.2x vs. 18.7x historical average, 1986-08/23**

Communication Services price-to-fwd earnings and relative price-to-fwd earnings vs. S&P 500

Source: Compustat, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH**Utilities****Exhibit 48: Relative Valuation (vs. S&P 500) for Utilities industries (based on data from 1986-8/23)**

Utilities relative price to book, price to operating cash flow, price to earnings by industry

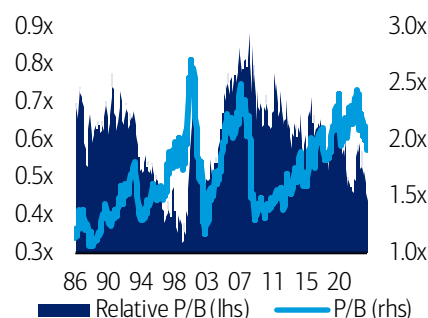
Utilities (# of co's)	Price to Book (Relative)			Price to Operating Cash Flow (Relative)			Forward P/E (Relative)		
	Current	Average	Implied upside	Current	Average	Implied upside	Current	Average	Implied upside
Electric Utilities (17)	0.44	0.56	27%	0.88	0.60	-32%	0.83	0.83	1%
Independent Power and Renewable Electricity Producers (1)	1.71	0.78	-54%	0.24	0.40	71%	0.51	0.80	57%
Multi-Utilities (10)	0.41	0.61	48%	0.56	0.67	20%	0.84	0.99	18%

Source: Compustat, First Call, BofA US Equity & US Quant Strategy

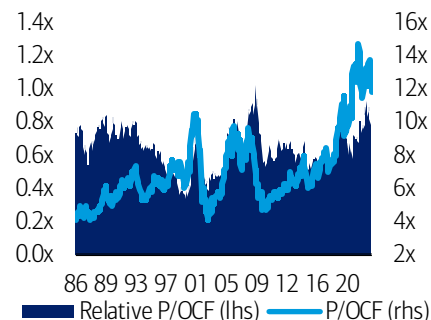
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Exhibit 49: Utilities P/B at 1.9x vs. 1.7x historical average, 1986-08/23

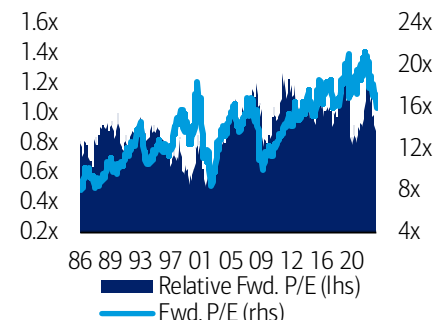
Utilities price-to-book and relative price-to-book vs. S&P 500

Source: Compustat, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH**Exhibit 50: Utilities P/OCF at 11.8x vs. 7.1x historical average, 1986-08/23**

Utilities price-to-op. cash flow and relative price-to-op. cash flow vs. S&P 500

Source: Compustat, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH**Exhibit 51: Utilities fwd P/E at 15.9x vs. 13.9x historical average, 1986-08/23**

Utilities price-to-fwd earnings and relative price-to-fwd earnings vs. S&P 500

Source: Compustat, BofA US Equity & US Quant Strategy
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Tactical industry rotation framework

Exhibit 52: S&P 500 Momentum & Value Framework - industry ranks as of 8/23

Industry ranks based on relative price momentum, EPS revision and valuation

Industry	Sector	Combined Rank	Price Momentum Rank	EPS Revision Rank	Valuation Rank	Style Highlight
Interactive Media & Services	Communication Services	27	7	10	10	Opportunity
Household Durables	Consumer Discretionary	27	8	10	9	Opportunity
Media	Communication Services	27	9	8	10	Opportunity
Passenger Airlines	Industrials	25	6	9	10	Opportunity
Energy Equipment & Services	Energy	25	10	6	9	Opportunity
Construction Materials	Materials	23	8	10	5	
Machinery	Industrials	23	10	8	5	
Office Reits	Real Estate	23	8	5	10	
Building Products	Industrials	22	10	8	4	
Communications Equipment	Information Technology	21	8	5	8	
Hotels Restaurants & Leisure	Consumer Discretionary	21	5	10	6	
Electrical Equipment	Industrials	21	10	9	2	
Insurance	Financials	21	7	7	7	Opportunity
Specialized Reits	Real Estate	21	5	8	8	
Semiconductors & Semiconductor Equipment	Information Technology	20	9	10	1	
Broadline Retail	Consumer Discretionary	20	9	10	1	
Trading Companies & Distributors	Industrials	20	9	5	6	
Automobiles	Consumer Discretionary	20	10	9	1	
Entertainment	Communication Services	20	4	9	7	
Construction & Engineering	Industrials	20	10	9	1	
Professional Services	Industrials	20	9	8	3	
Specialty Retail	Consumer Discretionary	20	8	7	5	
Leisure Products	Consumer Discretionary	19	10	3	6	
Industrial Conglomerates	Industrials	19	5	9	5	
Financial Services	Financials	18	7	8	3	
Oil Gas & Consumable Fuels	Energy	18	8	1	9	
Residential Reits	Real Estate	17	3	5	9	
Health Care Providers & Services	Health Care	17	3	6	8	
Metals & Mining	Materials	17	9	1	7	
Auto Components	Consumer Discretionary	16	8	4	4	
Independent Power And Renewable Electricity Producers	Utilities	16	1	5	10	
Biotechnology	Health Care	16	4	4	8	
Banks	Financials	15	4	2	9	
Retail Reits	Real Estate	15	3	3	9	Value Trap
Beverages	Consumer Staples	15	2	7	6	
Distributors	Consumer Discretionary	15	4	4	7	
Food Products	Consumer Staples	15	1	6	8	
Tobacco	Consumer Staples	15	4	4	7	
Chemicals	Materials	15	7	2	6	
Personal Care Products	Consumer Staples	15	1	10	4	
Hotel & Resort Reits	Real Estate	14	1	3	10	Value Trap
Electronic Equipment Instruments & Components	Information Technology	14	6	3	5	
Health Care Reits	Real Estate	14	5	5	4	
Diversified Telecommunication Services	Communication Services	14	1	3	10	Value Trap
Capital Markets	Financials	14	6	4	4	
Consumer Finance	Financials	13	2	3	8	Value Trap
IT Services	Information Technology	13	6	5	2	
Air Freight & Logistics	Industrials	13	5	1	7	
Household Products	Consumer Staples	13	4	6	3	
Multi-Utilities	Utilities	13	2	3	8	Value Trap
Electric Utilities	Utilities	13	1	7	5	
Pharmaceuticals	Health Care	13	6	1	6	
Aerospace & Defense	Industrials	13	3	8	2	
Software	Information Technology	12	3	7	2	
Technology Hardware Storage & Peripherals	Information Technology	12	5	6	1	
Health Care Equipment & Supplies	Health Care	12	2	7	3	
Containers & Packaging	Materials	12	7	1	4	
Ground Transportation	Industrials	11	7	2	2	Momentum Breakdown
Real Estate Management & Development	Real Estate	11	5	1	5	
Commercial Services & Supplies	Industrials	10	3	6	1	
Life Sciences Tools & Services	Health Care	10	6	2	2	
Industrial Reits	Real Estate	9	2	4	3	
Consumer Staples Distribution & Retail	Consumer Staples	8	3	2	3	
Textiles Apparel & Luxury Goods	Consumer Discretionary	7	2	2	3	

Source: BofA US Equity & US Quant Strategy

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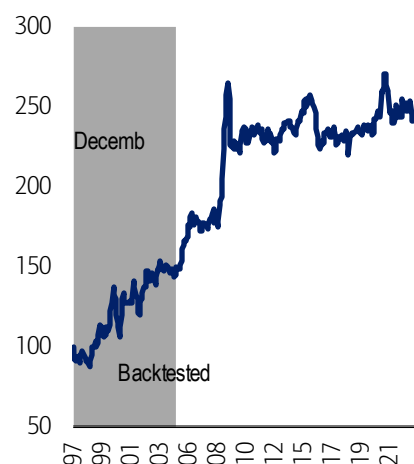


Industry framework performance

Each month, we track the performance of industries categorized as Opportunities, Value Traps, and Momentum Breakdowns as defined above.

Exhibit 53: “Opportunities” Cumulative Relative Performance, 12/1996-8/2023 (backtested)

Cumulative relative performance of “Opportunities” vs. the equal-weighted S&P industries



Note: the shaded area shows backtested results during the period from month-end December 1996 to month-end December 2004.

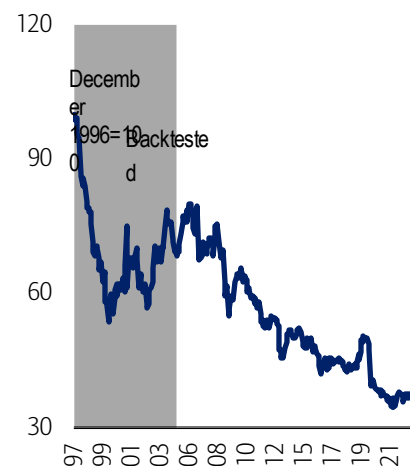
The unshaded portion represents actual performance since January 2005. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not actual performance and is not intended to be indicative of future performance. The backtested performance results are based on criteria applied retroactively with the benefit of hindsight and knowledge of factors that may have positively affected its performance, and cannot account for all financial risks that may affect the performance of the screen going forward. See Appendix for performance data and calculation methodology.

Source: BofA US Equity & US Quant Strategy

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Exhibit 54: “Value Traps” Cumulative Relative Performance, 12/1996-8/2023 (backtested)

Cumulative relative performance of “Value Traps” vs. the equal-weighted S&P industries



Note: the shaded area shows backtested results during the period from month-end December 1996 to month-end December 2004. The unshaded portion represents actual performance since January 2005. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not actual performance and is not intended to be indicative of future performance.

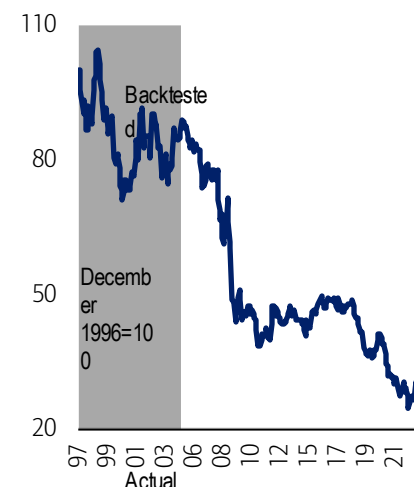
The backtested performance results are based on criteria applied retroactively with the benefit of hindsight and knowledge of factors that may have positively affected its performance, and cannot account for all financial risks that may affect the performance of the screen going forward. See Appendix for performance data and calculation methodology.

Source: BofA US Equity & US Quant Strategy

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Exhibit 55: “Momentum Breakdowns” Cumulative Relative Performance, 12/1996-8/2023 (backtested)

Cumulative relative performance of “Momentum Breakdowns” vs. the equal-weighted S&P industries



Note: the shaded area shows backtested results during the period from month-end December 1996 to month-end December 2004. The unshaded portion represents actual performance since January 2005. Backtesting is hypothetical in nature and reflects application of the screen prior to its introduction. It is not actual performance and is not intended to be indicative of future performance.

The backtested performance results are based on criteria applied retroactively with the benefit of hindsight and knowledge of factors that may have positively affected its performance, and cannot account for all financial risks that may affect the performance of the screen going forward. See Appendix for performance data and calculation methodology.

Source: BofA US Equity & US Quant Strategy

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Sector ranks

We also use this framework to rank sectors based on price momentum, earnings momentum, and valuation factors. Sectors are sorted from highest (most attractive) to lowest (least attractive) ranks as of the latest month below.

We use this framework as one component in determining our overall S&P 500 sector preferences, but fundamentals, risk and other macro factors are also important drivers. We more heavily utilize this framework in determining our favored industries (though again, other factors also contribute) and in highlighting attractive short-term sector opportunities for more tactical investors.

Exhibit 56: S&P 500 Momentum & Value Framework Sector Ranks as of 8/23

Sector ranks based on relative price momentum, EPS revision and valuation

Sector	Combined Rank	Price Momentum Rank	EPS Revision Rank	Valuation Rank
Communication Services	27	7	10	10
Energy	23	11	1	11
Consumer Discretionary	22	10	11	1
Industrials	20	9	8	3
Financials	18	6	6	6
Information Technology	16	5	9	2
Real Estate	16	3	4	9
Utilities	16	1	7	8
Materials	15	8	2	5
Health Care	14	4	3	7
Consumer Staples	11	2	5	4

Source: BofA US Equity & US Quant Strategy

BofA GLOBAL RESEARCH

Methodology

Definitions of valuation metrics:

- **Price/Book:** month-end market cap divided by latest total common equity.
- **Price/Operating Cash Flow:** Month-end market cap divided by the last twelve months cash flow from operations as of the most recent fiscal quarter.
Note: All industries' multiples are relative to the S&P 500 ex. Fins. for P/OCF.
- **Forward Price/Earnings:** Month-end market cap divided by I/B/E/S consensus next twelve months earnings.

Implied upside is based on comparing the current relative multiple vs. the historical average relative multiple. Industries with <10 yrs of data history are excluded. Boxes highlight sectors/industries with the highest greatest upside and implied downside.

Momentum & Value Model

Our tactical "momentum and value" framework was backtested from January 1997-December 2004, and has been running live since January 2005. We calculate price momentum, earnings momentum and valuation for the S&P 500 GICS sectors and industries relative to the index beginning in January 1997. We exclude industries that have only one company or have less than five years of historical price data. For our backtest, we have used as a market benchmark the portfolio of equal-weighted S&P 500 industries that were eligible for the framework at a given point in time.

Price momentum

The price momentum of an industry is the change in the industry's relative price in the current month vs. three months ago, with relative price defined as the month-end industry price dividend by the month-end index level of the S&P 500. Industries are assigned a price momentum rank from 1 to 10, with 10 being the strongest price momentum and 1 being the weakest. Sectors are assigned a price momentum rank from 1 to 11, with 11 being the strongest price momentum and 1 being the weakest.

Earnings momentum

The earnings momentum of an industry is the change in relative forecast EPS between the current month and three months ago. Relative EPS is the ratio of the 12-month rolling forward I/B/E/S consensus earnings forecast of a given industry divided by that of the S&P 500. Industries are assigned an earnings revision rank of 1 to 10, with 10 being the strongest earnings momentum and 1 being the weakest. Sectors are assigned an earnings revision rank of 1 to 11, with 11 being the strongest earnings momentum and 1 being the weakest.

Valuation

We calculate the earnings yield (E/P) of an industry as the ratio of current relative forward (consensus) EPS divided by current relative price. We then calculate the earnings yield relative to its historical average by dividing the current E/P by the average E/P for the industry since the framework's inception in January 1997. For industries introduced after the inception date, at least one year of data is required before an industry is eligible for a rank. Industries are assigned a valuation rank from 1 to 10, with 10 being the highest relative earnings yield (most inexpensive) and 1 being the lowest relative earnings yield (most expensive). Sectors are assigned a valuation rank from 1 to 11, with 11 being the highest relative earnings yield (most inexpensive) and 1 being the lowest relative earnings yield (most expensive). Current data is compared to this average using the following formula: $(\text{Current E/P} - \text{Historical Avg. E/P}) / \text{Abs (Historical Avg. E/P)}$. We calculate both the current and historical average relative to the market because of P/E multiple expansion in the market, and use earnings yield (inverse of P/E) to accommodate industries which have negative aggregate earnings.

Combined rank

The combined rank of an industry is the sum of the three ranks from the price momentum, earnings momentum, and valuation factors above, with 30 ranking the best and 3 ranking the worst. For sectors, 33 ranks the best and 3 ranks the worst.

Opportunities, Value Traps and Momentum Breakdowns

We classify industries based on their framework ranks as follows:

- Opportunities are industries with above avg. (6 or higher) ranks in all three ranks.
- Value Traps are industries that have above avg. ranks in valuation (6 or higher) but are in the bottom tertile in price momentum and earnings momentum (ranks 1-3).
- Momentum Breakdowns are industries with below avg. ranks in valuation (4 or lower), lower price momentum ranks than in the previous month, and below avg. earnings momentum ranks (4 or lower).

Exhibit 57: Relative performance of Opportunities, Value Traps and Momentum Breakdowns (as of 8/23)

Relative performance vs. equal-weighted S&P industries

	1m	3m	6m	12m	YTD	2yr	Ann'zed	3yr	Ann'zed	5yr	Ann'zed
Opportunities	0.1%	-5.0%	-4.4%	-1.0%	-3.3%	-6.9%	-3.6%	-0.4%	-0.1%	6.8%	1.0%
Value Traps	-0.7%	-1.7%	0.6%	-1.1%	-0.3%	2.7%	1.4%	-6.5%	-1.8%	-24.0%	-3.8%
Momentum Breakdown	0.0%	-0.9%	12.8%	5.3%	16.9%	-5.0%	-2.6%	-34.9%	-10.6%	-49.5%	-8.5%

Source: BofA US Equity & US Quant Strategy

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S&P 500 Company Distribution

Exhibit 58: Latest month's end S&P 500 weights for companies sorted by sectors/industries

Company Distribution of S&P 500 by GICS Sector/Industry Classifications as of 8/31/2023

Sector/Industry	Wgt	Sector/Industry	Wgt	Sector/Industry	Wgt	Sector/Industry	Wgt
COMMUNICATION SERVICES	8.81%	AUTOZONE INC	0.12%	EXXON MOBIL CORP	1.19%	CHUBB LIMITED	0.22%
DIVERSIFIED TELECOM	0.67%	BATH & BODY WORKS	0.02%	HESS CORP	0.11%	CINCINNATI FINANCIAL CORP	0.04%
AT&T INC	0.28%	BEST BUY CO INC	0.04%	KINDER MORGAN INC	0.09%	EVEREST GROUP LTD	0.04%
VERIZON COMMUNICATIONS	0.39%	CARMAX INC	0.03%	MARATHON OIL CORP	0.04%	GLOBE LIFE INC	0.03%
ENTERTAINMENT	1.35%	HOME DEPOT INC	0.89%	MARATHON PETROLEUM	0.16%	HARTFORD FINL SERVICES GROUP	0.06%
ACTIVISION BLIZZARD INC	0.17%	LOWE'S COS INC	0.36%	OCCIDENTAL PETROLEUM	0.12%	LINCOLN NATIONAL CORP	0.01%
ELECTRONIC ARTS	0.08%	O'REILLY AUTOMOTIVE	0.15%	ONEOK INC	0.08%	LOEWS CORP	0.03%
LIVE NATION ENTERTAINMENT	0.03%	ROSS STORES INC	0.11%	PHILLIPS 66	0.14%	MARSH & MCLENNAN COMPANIES	0.26%
NETFLIX INC	0.51%	TJX COS INC	0.28%	PIONEER NATURAL	0.15%	METLIFE INC	0.11%
TAKE-TWO INTERACTIVE	0.06%	TRACTOR SUPPLY CO	0.06%	TARGA RESOURCES CORP	0.05%	PRINCIPAL FINANCIAL GROUP	0.05%
WALT DISNEY CO	0.41%	ULTA BEAUTY, INC	0.06%	THE WILLIAMS COMPANIES	0.11%	PROGRESSIVE CORP	0.21%
WARNER BROS DISCOVERY	0.08%	TEXTILES APPAREL & LUX	0.38%	VALERO ENERGY CORP	0.12%	PRUDENTIAL FINANCIAL INC	0.09%
INTERACTIVE MEDIA & SERV	5.78%	NIKE INC B	0.33%	FINANCIALS	12.46%	TRAVELERS COS INC	0.10%
ALPHABET INC A	2.15%	RALPH LAUREN CORP A	0.01%	BANKS	2.95%	WILLIS TOWERS WATSON PLC	0.06%
ALPHABET INC C	1.86%	TAPESTRY, INC	0.02%	BANK OF AMERICA CORP	0.53%	WR BERKLEY CORP	0.03%
MATCH GROUP, INC.	0.03%	VF CORP	0.02%	CITIGROUP INC	0.21%	HEALTH CARE	13.16%
META PLATFORMS, INC. CLASS	1.74%	CONSUMER STAPLES	6.56%	CITIZENS FINANCIAL GROUP	0.04%	BIOTECHNOLOGY	2.01%
MEDIA	0.80%	BEVERAGES	1.64%	COMERICA INC (MI)	0.02%	ABBVIE INC.	0.69%
CHARTER COMMUNICATIONS	0.12%	BROWN-FORMAN CORP	0.03%	FIFTH THIRD BANCORP (OH)	0.05%	BIOGEN INC	0.10%
COMCAST CORP A	0.52%	COCA-COLA CO	0.62%	HUNTINGTON BANCSHARES	0.04%	GILEAD SCIENCES INC	0.25%
FOX CORP A	0.02%	CONSTELLATION	0.11%	JP MORGAN CHASE & CO	1.14%	INCYTE CORP	0.03%
FOX CORP B	0.01%	KEURIG DR PEPPER INC	0.08%	KEYCORP	0.03%	MODERNA, INC.	0.10%
INTERPUBLIC GROUP COS	0.03%	MOLSON COORS	0.03%	M&T BANK CORP	0.06%	REGENERON PHARMACEUTICALS INC	0.24%
NEWS CORP A	0.02%	MONSTER BEVERAGE	0.12%	PNC FINL SERVICES GROUP	0.13%	VERTEX PHARMACEUTICALS INC	0.24%
NEWS CORP B	0.01%	PEPSICO INC	0.65%	REGIONS FINANCIAL CORP	0.05%		
OMNICON GROUP	0.04%	CONSUMER STAPLES DIST	1.78%	TRUIST FINANCIAL CORP	0.11%	HEALTH EQUIP & SUPPLIES	2.63%
PARAMOUNT GLOBAL CLASS B	0.02%	COSTCO WHOLESALE	0.65%	US BANCORP	0.14%	ABBOTT LABORATORIES	0.48%
WIRELESS TELECOM	0.21%	DOLLAR GENERAL CORP	0.08%	WELLS FARGO & CO	0.41%	ALIGN TECHNOLOGY INC	0.07%
T-MOBILE US INC	0.21%	DOLLAR TREE INC	0.07%	ZIONS BANCORPORATION	0.01%	BAXTER INTL INC	0.05%
CONSUMER DISCRETIONARY	10.61%	KROGER CO	0.08%	CAPITAL MARKETS	2.66%	BECTON DICKINSON & CO	0.21%
AUTO COMPONENTS	0.10%	SYSCO CORP	0.09%	AMERIPRISE FINANCIAL INC	0.09%	BOSTON SCIENTIFIC CORP	0.21%
APTIV PLC	0.07%	TARGET CORP	0.16%	BLACKROCK INC	0.28%	COOPER COMPANIES INC	0.05%
BORGWARNER INC	0.03%	WALGREENS BOOTS	0.05%	CBOE GLOBAL MARKETS, INC	0.04%	DENTSPLY SIRONA INC.	0.02%
AUTOMOBILES	2.10%	WALMART INC.	0.61%	CHARLES SCHWAB CORP	0.23%	DEXCOM INC	0.10%
FORD MOTOR CO	0.13%	FOOD PRODUCTS	0.98%	CME GROUP INC A	0.19%	EDWARDS LIFESCIENCES CORP	0.12%
GENERAL MOTORS COMPANY	0.12%	ARCHER-DANIELS-	0.11%	FACTSET RESEARCH SYSTEM	0.04%	GE HEALTHCARE TECHNOLOGIES INC.	0.07%
TESLA, INC	1.85%	BUNGE LTD	0.05%	FRANKLIN RESOURCES INC	0.02%	HOLOGIC INC	0.05%
BROADLINE RETAIL	3.36%	CAMPBELL SOUP CO	0.02%	GOLDMAN SACHS GROUP	0.29%	IDEXX LABORATORIES INC	0.11%
AMAZON.COM INC	3.27%	CONAGRA BRANDS, INC	0.04%	INTERCONTINENTAL	0.18%	INSULET CORP	0.04%
EBAY INC.	0.06%	GENERAL MILLS INC	0.11%	INVESCO LTD	0.02%	INTUITIVE SURGICAL INC	0.29%
ETSY, INC.	0.02%	HERSHEY FOODS CORP	0.08%	MARKETAXESS HOLDINGS	0.02%	MEDTRONIC PLC	0.29%
DISTRIBUTORS	0.13%	HORMEL FOODS CORP	0.03%	MOODY'S CORP	0.14%	RESMED INC	0.06%
GENUINE PARTS CO	0.06%	J.M. SMUCKER CO	0.04%	MORGAN STANLEY	0.29%	STERIS PLC	0.06%
LKQ CORP	0.04%	KELLOGG CO	0.04%	MSCI INC	0.12%	STRYKER CORP	0.25%
POOL CORP	0.04%	LAMB WESTON	0.04%	NASDAQ INC	0.05%	TELEFLEX INC	0.03%
HOTELS REST LEIS	2.02%	MCCORMICK & CO	0.05%	NORTHERN TRUST CORP (IL)	0.04%	ZIMMERBIOMET HOLDINGS INC	0.07%
BOOKING HOLDINGS INC	0.30%	MONDELEZ	0.26%	RAYMOND JAMES	0.05%	HEALTH PROVIDERS & SVS	2.77%
CAESARS ENTERTAINMENT,	0.03%	THE KRAFT HEINZ	0.07%	S&P GLOBAL INC	0.34%	CARDINAL HEALTH INC	0.06%
CARNIVAL CORP	0.04%	TYSON FOODS INC A	0.04%	STATE STREET CORP	0.06%	CENCORA, INC.	0.08%
CHIPOTLE MEXICAN GRILL INC.	0.14%	HOUSEHOLD PRODUCTS	1.36%	T ROWE PRICE GROUP INC	0.07%	CENTENE CORP	0.09%
DARDEN RESTAURANTS INC	0.05%	CHURCH & DWIGHT CO	0.06%	THE BANK OF NEW YORK	0.09%	CVS HEALTH CORPORATION	0.22%
DOMINO'S PIZZA INC	0.04%	CLOROX CO	0.05%	CONSUMER FINANCE	0.45%	DAVITA INC	0.02%
EXPEDIA GROUP, INC.	0.04%	COLGATE-PALMOLIVE	0.16%	AMERICAN EXPRESS CO	0.25%	ELEVANCE HEALTH, INC.	0.28%
HILTON WORLDWIDE	0.10%	KIMBERLY-CLARK	0.12%	CAPITAL ONE FINANCIAL	0.10%	HCA HEALTHCARE INC	0.15%
LAS VEGAS SANDS	0.05%	PROCTER & GAMBLE	0.97%	DISCOVER FINANCIAL	0.06%	HENRY SCHEIN INC	0.03%
MARRIOTT INTL A	0.14%	PERSONAL PRODUCTS	0.20%	SYNCHRONY FINANCIAL	0.04%	HUMANA INC	0.15%
MCDONALD'S CORP	0.55%	ESTEE LAUDER COS. A	0.10%	FINANCIAL SVS	4.32%	LABORATORY CORPORATION OF	0.05%
MGM RESORTS	0.04%	KENVUE INC.	0.11%	BERKSHIRE HATHAWAY B	1.71%	MCKESSON CORP	0.15%
NORWEGIAN CRUISE LINE	0.02%	TOBACCO	0.61%	FIDELITY NATIONAL	0.09%	MOLINA HEALTHCARE	0.05%
ROYAL CARIBBEAN GROUP	0.06%	ALTRIA GROUP INC	0.21%	FISERV INC	0.20%	QUEST DIAGNOSTICS	0.04%
STARBUCKS CORP	0.30%	PHILIP MORRIS	0.40%	FLEETCOR TECHNOLOGIES	0.05%	THE CIGNA GROUP	0.22%
WYNN RESORTS LTD	0.03%	ENERGY	4.42%	GLOBAL PAYMENTS INC	0.09%	UNITEDHEALTH GROUP INC	1.18%
YUM! BRANDS INC	0.10%	ENERGY EQUIP & SVS	0.41%	JACK HENRY & ASSOCIATES	0.03%	UNIVERSAL HEALTH SERVICES B	0.02%
HOUSEHOLD DURABLES	0.37%	BAKER HUGHES	0.10%	MASTERCARD INC A	0.92%	LIFE SCIENCES TOOLS	1.63%
GARMIN LTD	0.04%	HALLIBURTON CO	0.09%	PAYPAL HOLDINGS INC.	0.19%	AGILENT TECHNOLOGIES INC	0.10%
HORTON D.R. INC	0.10%	SCHLUMBERGER LTD	0.22%	VISA INC A	1.06%	BIO-RAD LABORATORIES INC A	0.02%
LENNAR CORP A	0.08%	OIL GAS & CONSUMABLE	4.01%	INSURANCE	2.08%	BIO-TECHNE CORP	0.03%
MOHAWK INDUSTRIES INC	0.01%	APA CORPORATION	0.04%	AFLAC INC	0.11%	CHARLES RIVER LABORATORIES	0.03%
NEWELL BRANDS INC	0.01%	CHEVRON CORP	0.76%	ALLSTATE CORP	0.08%	DANAHER CORP	0.47%
NVR INC	0.05%	CONOCOPHILLIPS	0.38%	AMERICAN INTL GROUP INC	0.11%	ILLUMINA INC	0.07%
PULTE GROUP INC	0.05%	COTERRA ENERGY INC	0.06%	AON PLC	0.18%	IQVIA HOLDINGS INC	0.11%
WHIRLPOOL CORP	0.02%	DEVON ENERGY CORP	0.09%	ARCH CAPITAL GROUP LTD	0.08%	METTLER-TOLEDO INTL	0.07%
LEISURE PRODUCTS	0.02%	DIAMONDBACK ENERGY	0.07%	ARTHUR J. GALLAGHER & CO	0.13%	REVVITY, INC.	0.04%
HASBRO INC	0.02%	EOG RESOURCES	0.20%	ASSURANT INC	0.02%	THERMO FISHER SCIENTIFIC	0.57%
SPECIALTY RETAIL	2.14%	EQT CORPORATION	0.04%	BROWN & BROWN INC	0.05%	WATERS CORP	0.04%

Source: BoFA Global Research

BoFA GLOBAL RESEARCH



Exhibit 59: Latest month's end S&P 500 weights for companies sorted by sectors/industries

Company Distribution of S&P 500 by GICS Sector/Industry Classifications as of 8/31/2023

Sector/Industry	Wgt	Sector/Industry	Wgt	Sector/Industry	Wgt	Sector/Industry	Wgt
WEST PHARMACEUTICAL SERVICES	0.08%	STANLEY BLACK & DECKER	0.04%	CADENCE DESIGN SYSTEMS	0.17%	INVITATION HOMES	0.05%
PHARMACEUTICALS	4.11%	WABTEC	0.05%	FAIR ISAAC & CO INC	0.06%	MID-AMERICA APT	0.04%
BRISTOL-MYERS SQUIBB	0.34%	XYLEM INC	0.07%	FORTINET INC	0.10%	UDR INC	0.03%
CATALENT INC	0.02%	AIRLINES	0.21%	GEN DIGITAL INC.	0.03%	RETAIL REITS	0.28%
ELI LILLY & CO	1.16%	ALASKA AIR GROUP INC	0.01%	INTUIT INC	0.40%	FEDERAL REALTY INVT	0.02%
JOHNSON & JOHNSON	1.03%	AMERICAN AIRLINES GROUP INC.	0.03%	MICROSOFT CORP	6.47%	KIMCO REALTY CORP	0.03%
MERCK & CO INC	0.73%	DELTA AIR LINES	0.07%	ORACLE CORP	0.49%	REALTY INCOME CORP	0.10%
ORGANON & CO	0.01%	SOUTHWEST AIRLINES CO	0.05%	PALO ALTO NETWORKS INC.	0.20%	REGENCY CENTERS CORP	0.03%
PFIZER INC	0.53%	UNITED AIRLINES HOLDING, INC	0.04%	PTC INC	0.04%	SIMON PROPERTY GROUP	0.10%
VIATRIS INC	0.03%	PROFESSIONAL SERVICES	0.77%	ROPER TECHNOLOGIES, INC	0.14%	SPECIALIZED REITS	1.08%
ZOETIS INC	0.23%	AUTOMATIC DATA PROCESSING	0.28%	SALESFORCE, INC.	0.58%	AMERICAN TOWER CORP	0.22%
INDUSTRIALS	8.43%	BROADRIDGE FINANCIAL	0.06%	SERVICENOW INC.	0.32%	CROWN CASTLE INC.	0.12%
AEROSPACE & DEFENSE	1.61%	CERIDIAN HCM HOLDING INC.	0.03%	SYNOPSIS INC	0.19%	DIGITAL REALTY TRUST	0.10%
AXON ENTERPRISE INC	0.04%	EQUIFAX INC	0.07%	TYLER TECHNOLOGIES INC	0.04%	EQUINIX INC	0.19%
BOEING CO	0.34%	JACOBS SOLUTIONS INC.	0.05%	TECHNOLOGY HARDWARE	7.62%	EXTRA SPACE STORAGE	0.07%
GENERAL DYNAMICS	0.14%	LEIDOS HOLDINGS INC	0.04%	APPLE INC.	7.38%	IRON MOUNTAIN INC	0.05%
HOWMET AEROSPACE INC.	0.05%	PAYCHEX INC	0.10%	HEWLETT PACKARD	0.06%	PUBLIC STORAGE	0.12%
HUNTINGTON INGALLS	0.02%	PAYCOM SOFTWARE INC	0.04%	HP INC	0.07%	SBA COMMUNICATIONS	0.06%
L3HARRIS TECHNOLOGIES INC	0.09%	ROBERT HALF INC	0.02%	NETAPP INC	0.04%	VICI PROPERTIES INC.	0.08%
LOCKHEED MARTIN	0.27%	VERISK ANALYTICS INC	0.09%	SEAGATE TECHNOLOGY	0.04%	WEYERHAEUSER CO	0.06%
NORTHROP GRUMMAN CORP	0.16%	TRADING CO. & DISTR	0.26%	WESTERN DIGITAL CORP	0.04%	UTILITIES	2.43%
RTX CORPORATION	0.33%	FASTENAL CO	0.09%	MATERIALS	2.46%	ELECTRIC UTILITIES	1.59%
TEXTRON INC	0.04%	UNITED RENTALS INC	0.09%	CHEMICALS	1.69%	ALLIANT ENERGY CORP	0.03%
TRANSDIGM GROUP	0.13%	W.W. GRAINGER INC	0.08%	AIR PRODUCTS &	0.17%	AMERICAN ELECTRIC	0.11%
AIR FREIGHT & LOGISTICS	0.56%	INFORMATION TECHNOLOGY	28.21	ALBEMARLE CORP	0.06%	CONSTELLATION ENERGY	0.09%
CH ROBINSON WORLDWIDE INC	0.03%	COMMUNICATIONS EQUIP	0.93%	CELANESE CORP A	0.03%	DUKE ENERGY CORP	0.18%
EXPEDITORS INTL OF WA INC	0.05%	ARISTA NETWORKS INC	0.13%	CF INDUSTRIES HOLDINGS	0.04%	EDISON INTL	0.07%
FEDEX CORP	0.16%	CISCO SYSTEMS INC	0.62%	CORTEVA INC.	0.10%	ENTERGY CORP	0.05%
UNITED PARCEL SERVICE INC B	0.33%	F5, INC.	0.03%	DOW INC	0.10%	EVERGY INC.	0.03%
BUILDING PRODUCTS	0.45%	JUNIPER NETWORKS INC	0.02%	DUPONT DE NEMOURS INC.	0.09%	EVERSOURCE ENERGY	0.06%
A.O. SMITH CORP	0.02%	MOTOROLA SOLUTIONS INC	0.13%	EASTMAN CHEMICAL CO	0.03%	EXELON CORP	0.11%
ALLEGION PLC	0.03%	ELECTRONIC EQUIP, INSTR & COMP	0.58%	ECOLAB INC	0.12%	FIRSTENERGY CORP	0.05%
CARRIER GLOBAL CORP.	0.13%	AMPHENOL CORP A	0.14%	FMC CORP	0.03%	NEXTERA ENERGY INC	0.36%
JOHNSON CONTROLS	0.11%	CDW CORP	0.08%	INTL FLAVORS &	0.05%	NRG ENERGY	0.02%
MASCO CORP	0.04%	CORNING INC	0.07%	LYNDE PLC	0.50%	PG&E CORPORATION	0.07%
TRANE TECHNOLOGIES PLC	0.12%	KEYSIGHT TECHNOLOGIES INC	0.06%	LYONDELLBASELL	0.07%	PINNACLE WEST CAPITAL	0.02%
COMMERCIAL SVS	0.47%	TE CONNECTIVITY LTD.	0.11%	MOSAIC CO	0.03%	PPL CORP	0.05%
CINTAS CORP	0.12%	TELEDYNE TECHNOLOGIES INC	0.05%	PPG INDUSTRIES INC	0.09%	SOUTHERN CO	0.20%
COPART INC	0.10%	TRIMBLE INC	0.04%	SHERWIN-WILLIAMS CO	0.17%	XCEL ENERGY INC	0.08%
REPUBLIC SERVICES INC	0.08%	ZEBRA TECHNOLOGIES CORP	0.04%	CONSTRUCTION MATERIALS	0.15%	GAS UTILITIES	0.04%
ROLLINS INC	0.02%	IT SVS	1.21%	MARTIN MARIETTA	0.07%	ATMOS ENERGY CORP	0.04%
WASTE MANAGEMENT INC	0.15%	ACCENTURE PLC A	0.54%	VULCAN MATERIALS CO	0.08%	INDEPENDENT POWER	0.03%
CONSTR & ENGINEERING	0.08%	AKAMAI TECHNOLOGIES INC	0.04%	CONTAINERS & PACKAGING	0.23%	AES CORP	0.03%
QUANTA SERVICES INC	0.08%	COGNIZANT TECH SOLUTIONS	0.10%	AMCOR PLC	0.04%	MULTI-UTILITIES	0.69%
ELECTRICAL EQUIP	0.61%	DXC TECHNOLOGY COMPANY	0.01%	AVERY DENNISON CORP	0.04%	AMEREN CORP	0.06%
AMETEK INC	0.10%	EPAM SYSTEMS INC	0.04%	BALL CORP	0.05%	CENTERPOINT ENERGY	0.05%
ATON CORP PLC	0.24%	GARTNER INC	0.07%	INTL PAPER CO	0.03%	CMS ENERGY CORP	0.04%
EMERSON ELECTRIC CO	0.15%	INTL BUSINESS MACHINES	0.35%	PACKAGING CORP OF	0.04%	CONSOLIDATED EDISON	0.08%
GENERAC HOLDINGS INC	0.02%	VERISIGN INC	0.05%	SEALED AIR CORP	0.01%	DOMINION ENERGY INC	0.11%
ROCKWELL AUTOMATION INC	0.10%	SEMICONDUCTORS	7.75%	WESTROCK CO	0.02%	DTE ENERGY CO	0.06%
GROUND TRANSP	0.79%	ADVANCED MICRO DEVICES	0.45%	METALS & MINING	0.40%	NISOURCE INC	0.03%
CSX CORPORATION	0.16%	ANALOG DEVICES INC	0.24%	FREEPORT-MCMORAN INC	0.15%	PUBLIC SERVICE	0.08%
J.B. HUNT TRANSPORT SERVICES	0.04%	APPLIED MATERIALS INC	0.34%	NEWMONT CORP	0.08%	SEMPRA	0.12%
NORFOLK SOUTHERN CORP	0.12%	BROADCOM INC	1.02%	NUCOR CORP	0.11%	WEC ENERGY GROUP INC	0.07%
OLD DOMINION FREIGHT LINE INC	0.10%	ENPHASE ENERGY INC	0.05%	STEEL DYNAMICS INC	0.05%	WATER UTILITIES	0.07%
UNION PACIFIC CORP	0.36%	FIRST SOLAR INC	0.05%	REAL ESTATE	2.44%	AMERICAN WATER WORKS	0.07%
IND CONGLOMERATES	0.82%	INTEL CORP	0.39%	HEALTH CARE REITS	0.19%		
3M CO	0.16%	KLA CORPORATION	0.18%	HEALTHPEAK PROPERTIES	0.03%		
GENERAL ELECTRIC CO	0.33%	LAM RESEARCH CORP	0.25%	VENTAS INC	0.05%		
HONEYWELL INTL INC	0.33%	MICROCHIP TECHNOLOGY INC	0.12%	WELLTOWER INC	0.11%		
MACHINERY	1.81%	MICRON TECHNOLOGY INC	0.20%	HOTEL & RESORT REITS	0.03%		
CATERPILLAR INC	0.38%	MONOLITHIC POWER SYSTEMS	0.06%	HOST HOTELS & RESORTS	0.03%		
CUMMINS INC	0.09%	NVIDIA CORP	3.24%	INDUSTRIAL REITS	0.30%		
DEERE & CO	0.29%	NXP SEMICONDUCTOR NV	0.14%	PROLOGIS INC	0.30%		
DOVER CORP	0.06%	ON SEMICONDUCTOR CORP	0.11%	OFFICE REITS	0.07%		
FORTIVE CORP	0.07%	QORVO, INC	0.03%	ALEXANDRIA REAL ESTATE	0.05%		
IDEX CORP	0.05%	QUALCOMM INC	0.34%	BOSTON PROPERTIES INC	0.03%		
ILLINOIS TOOL WORKS INC	0.18%	SKYWORKS SOLUTIONS INC	0.05%	REAL ESTATE M&D	0.16%		
INGERSOLL RAND INC.	0.07%	SOLAREDGE TECHNOLOGIES INC	0.02%	CBRE GROUP INC.	0.07%		
NORDSON CORP	0.03%	TERADYNE INC	0.04%	COSTAR GROUP INC	0.09%		
OTIS WORLDWIDE CORP	0.09%	TEXAS INSTRUMENTS INC	0.41%	RESIDENTIAL REITS	0.33%		
PACCAR INC	0.11%	SOFTWARE	10.12	AVALONBAY COMMUNITIES	0.07%		
PARKER-HANNIFIN CORP	0.14%	ADOBE INC.	0.68%	CAMDEN PROPERTY TRUST	0.03%		
PENTAIR PLC	0.03%	ANSYS INC	0.07%	EQUITY RESIDENTIAL	0.06%		
SNAP ON INC	0.04%	AUTODESK INC	0.13%	ESSEX PROPERTY TRUST	0.04%		

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster ^{R1}
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

^{R1} 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.

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