S&P 500 Relative Value Cheat Sheet

Why a 95th percentile PE shouldn't keep you up at night

28 February 2024

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The S&P 500 is egregiously expensive vs. history

It's hard to be bullish based on valuation: the S&P 500 is statistically expensive on 19 of 20 metrics and is trading at a 95th percentile price to trailing earnings ratio based on data back to 1900 (Exhibit 1). Does this portend a market collapse? Statistical valuation models matter in the long-term and suggest lower returns over the next decade (3% p.a., Exhibit 3). But factors like sentiment and surprise matter more for 3- to 12-months. We incorporate all frameworks into our forecasting toolkit. But at a basic level, we question the validity of comparing an index to its younger selves, especially today's S&P 500.

If today's S&P 500 is apples; '80s '90s & '10s are oranges

The S&P 500 is half as levered, is higher quality and has lower earnings volatility than prior decades. The index gradually shifted from 70% asset-intensive manufacturing, financials and real estate companies in 1980 to 50% asset-light Tech & Health Care. The internal composition of the S&P 500 also recalls the apples to oranges problem: the Magnificent 7 (~30% by mkt cap) trades at half the equity risk premium of the remaining 493. A fair value approach to the index based on long-term trends in earnings and cost of equity would have grossly underestimated S&P 500 returns in recent years.

Risk premium may rise for seven, but could fall for 493…

Our analysis of prior regimes suggests that closer control of supply chain, a drop in inflation and rate volatility, and ring-fenced refinancing risk could drive the risk premium lower from here for the majority of companies, especially old economy cyclicals that grew lean and disciplined after being starved of capital for 10+ years. Moreover, today's focus on efficiency/AI rhymes with the 80s' and 90s' shift from labor intensity to labor lightness, a period during which the ERP averaged 250bp, lower than today's level.

…and cyclically adjusting earnings is more art than science

We found that a log-linear trendline applied to an earnings time series yields a more accurate normalized earnings forecast than other mathematical methods like Shiller's, etc. But the approach is sensitive to its starting point: S&P 500 normalized earnings estimates for 2025 range from $220 to $245 depending on the starting decade. An alternative approach is that of growing trough earnings at a long-term growth rate (8%) which yields $260. This suggests that the regression approach may be overly punitive.

Our prognosis: likelier direction for S&P from here is up

Our base case is that normalized earnings are unlikely to plummet from current levels assuming no hard landing and near peak Fed funds rates; encouragingly, earnings and GDP growth have positively surprised in recent quarters. We also assume that the equity risk premium for most of the S&P 500 (ex-Mag 7) could be too high and could settle closer to that of the 80s-90s analog. This realistic good case scenario suggests a fair value for the S&P 500 of ~5500. (See Exhibit 15 for a full range of outcomes based on different earnings and cost of capital assumptions.)

S&P 500 egregiously expensive v. history

The S&P 500 is statistically expensive on 19 of the 20 metrics we track and is trading at its 95th percentile based on the first metric, Trailing PE, based on data since 1900. Valuation has been predictive of long-term returns and our favored metric today suggests 3% price returns per annum over the next decade (Exhibit 3). But near-term factors like sentiment and earnings surprise matter over the next quarter/ year and are likely bigger drivers of 2023/2024 gains so far.

Exhibit 1: S&P 500 Valuations – shading indicates that metric is statistically expensive relative to history (as of 2/22/24)
S&P 500 valuation metrics

Metric	Current	Average	Avg. ex. Tech Bubble	Min	Max	% Above (below) avg	Z-Score	History
Trailing PE	23.2	14.8	14.5	5.2	30.5	56.5%	1.7	1900-present
Trailing GAAP PE	27.6	15.1	14.8	4.2	122.4	82.5%	1.4	1832-present
Forward Consensus PE	20.8	15.8	15.0	9.8	25.1	32.0%	1.5	1986-present
Trailing Normalized PE	24.7	19.1	17.8	9.2	34.5	29.4%	1.1	9/1987-present
Median Forward P/E	17.3	15.5	15.3	10.0	21.9	11.4%	0.8	1986-present
Shiller PE	30.8	17.4	16.8	4.8	44.2	77.1%	1.9	1881-present
P/BV	4.7	2.7	2.5	1.0	5.3	76.9%	2.0	1978-present
EV/EBITDA	15.1	10.5	10.2	6.0	17.1	43.1%	1.9	1986-present
Trailing PEG	2.4	1.7	1.6	1.1	3.2	43.1%	2.1	1986-present
Forward PEG	2.1	1.4	1.4	0.9	3.5	44.7%	1.8	1986-present
P/OCF	17.0	11.3	10.7	5.4	19.3	50.3%	1.7	1986-present
P/FCF	29.5	27.8	25.0	12.9	65.7	5.9%	0.2	1986-present
EV/Sales	3.0	2.0	1.9	0.9	3.4	51.3%	1.8	1986-present
ERP (Market-Based)	563.0	504.8	521.2	136.0	880.0	11.5%	0.2	11/1980-present
Normalized ERP	231	384	432	-120	929	-40.0%	-0.8	1987-present
S&P 500 Div. Yld. vs. 10yr Tsy. Yld.	0.5	1.2	1.2	0.2	4.2	-62.6%	0.0	1792-present
S&P 500 in WTI terms	49.3	26.9	24.7	2.7	175.3	83.0%	36.4	1960-present
S&P 500 in Gold terms	2.2	1.6	1.4	0.2	5.5	34.7%	0.0	1968-present
S&P 500 vs. R2000 Fwd. P/E	1.4	1.0	1.0	0.8	1.7	35.3%	0.3	1986-present
S&P 500 Market Cap/GDP	1.27	0.66	0.63	0.22	1.64	92.5%	3.0	1964-present

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

*Above average implied equities are attractive relative to bonds. Note: Trailing P/E based on GAAP EPS from 1900-77, 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.

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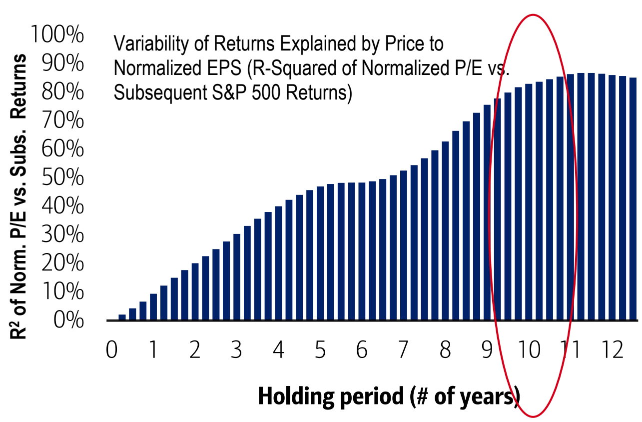
Exhibit 2: Valuation matters little in the near term, but is almost all that matters in the long-term
Price to normalized earnings predictive power on subsequent holding period returns (since 1987)



Source: BofA US Equity & US Quant Strategy, Haver Analytics, FactSet

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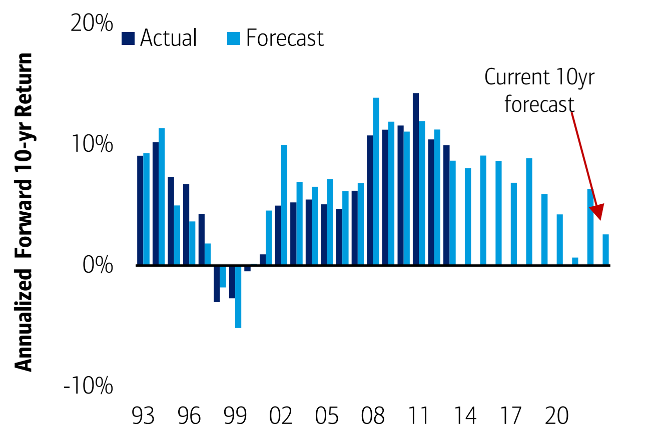
Exhibit 3: Price to normalized EPS suggest 3% p.a. return over next 10y
S&P 500 annualized forward 10-yr return: actuals vs. model forecast (1993-present)



Source: FactSet, Haver, BofA US Equity & Quant Strategy

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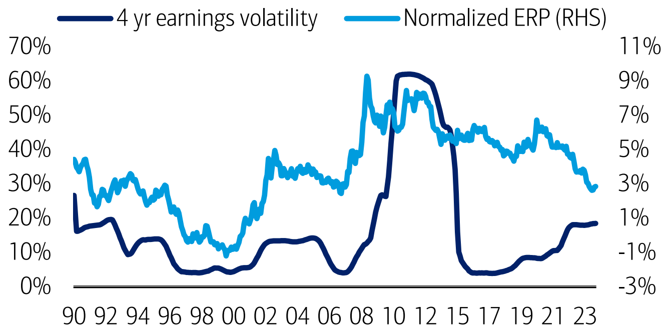
Why the equity risk premium might be too high

Riskier earnings streams require higher returns. But today's S&P 500 is half as levered, is higher quality and has similar or lower earnings volatility than in prior decades. The index composition has shifted from 70% asset-intensive manufacturing, financials and real estate in 1980 to 50% asset-light innovation-oriented companies today.

Exhibit 4: Equity risk premium moves with earnings volatility
S&P 500 4yr rolling earnings volatility vs. Normalized ERP (RHS) (1990-1/2024)



Source: Bloomberg, FactSet, Haver Analytics, BofA US Equity & US Quant Strategy

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Exhibit 5: Prior cycles of similar earnings risk saw lower ERP
Average Norm. ERP and real rates given different levels of earnings volatility (since 1990)

4yr earnings vol (since 1990) Greater than...	Less than...	Avg. ERP	Avg. Real Rates
0%	5%	2.5%	2.4%
5%	10%	3.3%	1.8%
10%	15%	3.8%	2.3%
15%	20%	3.4%	2.7%
20%	65%	6.8%	0.5%

Source: Bloomberg, FactSet, Haver Analytics, BofA US Equity & US Quant Strategy

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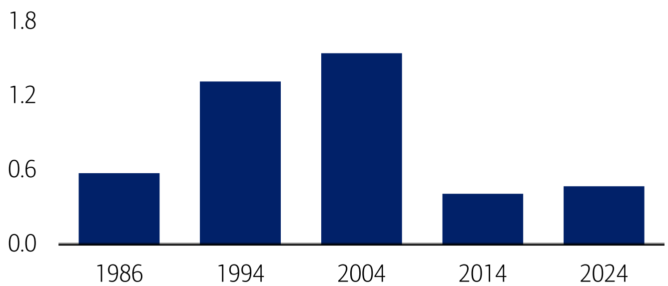
Exhibit 6: Leverage lower than 1990s-early 2000s
S&P 500 non-Financials net debt/Equity, 1986-present



Source: FactSet, BofA US Equity & Quant Strategy

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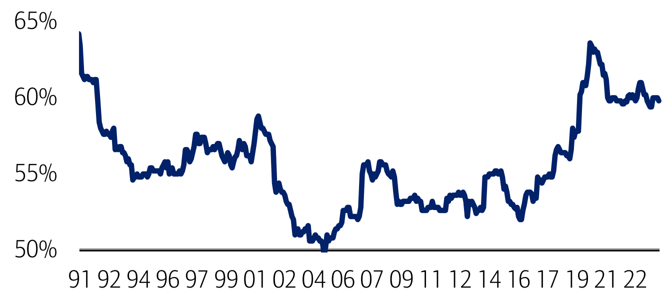
Exhibit 7: Higher quality composition than prior decades
S&P 500: % of B+ or better quality-rated stocks, 1990-1/24



Source: FactSet, BofA US Equity & US Quant Strategy

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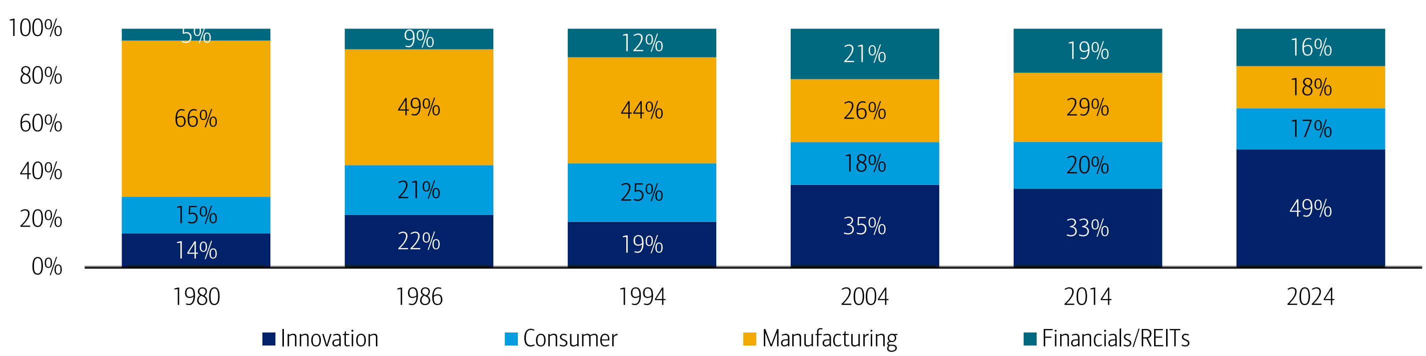
Exhibit 8: 50% of S&P 500 is asset-light sectors today vs. <15% in 1980; Manufacturing is <20% of index today vs. 66% in 1980
% of S&P 500 market cap by sector, 1980-present (Asset light / Innovation = Tech, Comm. Services ex-Telecom & Health Care, Consumer =Staples/Discretionary, Manufacturing/Asset Intensive/Capex = Industrials, Materials, Energy, Utilities, Telecom)



Source: Haver Analytics/S&P Analyst Handbook, FactSet, BofA US Equity & Quant Strategy

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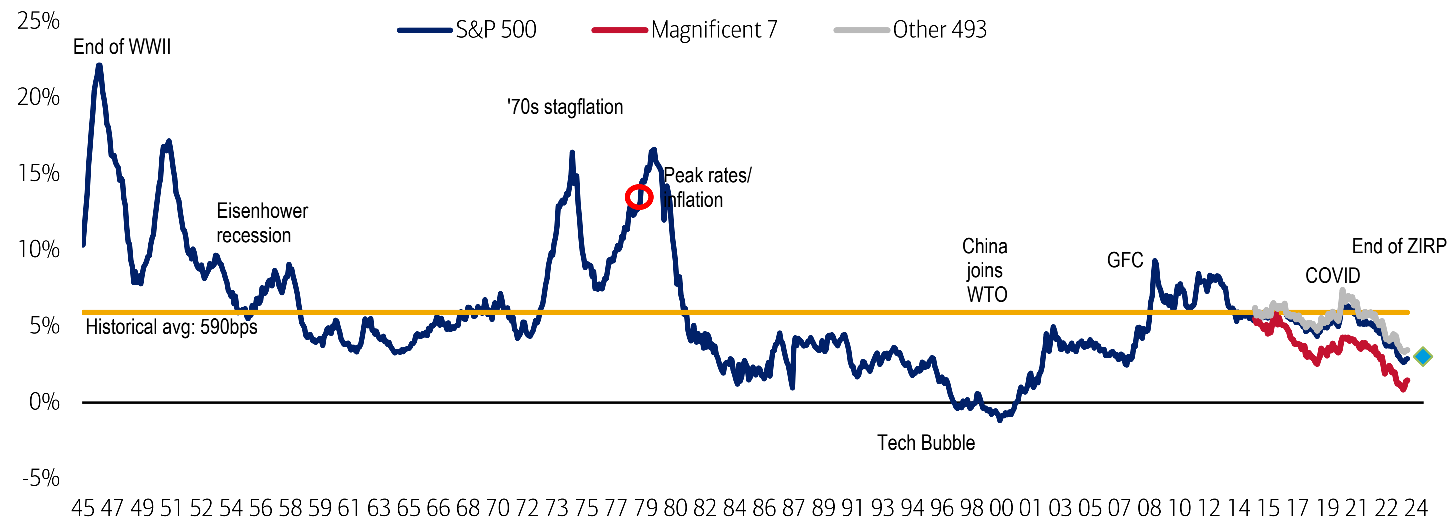
Apples and oranges within the S&P 500

The internal composition of the S&P 500 also recalls the apples to oranges problem: the Magnificent 7 trades at less than half the equity risk premium of the remaining 493.

Exhibit 9: Today's ERP is far lower than its average since 1945 of 590

S&P 500 normalized equity risk premium 1950-present (and forecast for year-end 2024), with ERP for Magnificent 7 vs. rest of index from 2015-present



Source: Bloomberg, FactSet, Haver Analytics, BofA US Equity & US Quant Strategy

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What's the right equity risk premium to use today?

Risk premia can be mapped onto different regimes based on factors like policy impacts, supply chain sustainability, quality of earnings (real vs. financially engineered, levered, etc.) labor intensity and other factors. Today's regime seems more similar to the lower risk premia regime, with productivity driven measures and corporates focused on efficiency and AI today.

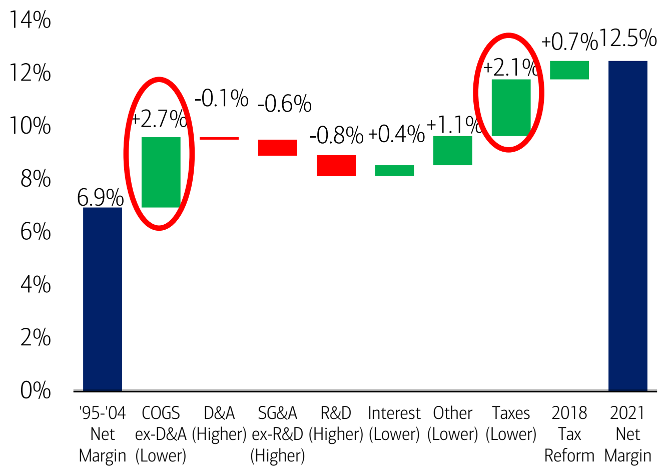
Highest: Post-GFC to 2021: high EPS volatility, uncertainty about Quantittive Easing/Zero-Interest-Rate-Policy exit strategy, brewing geopolitical tensions and COVID-revealed supply chain risks. A good chunk of EPS growth was manufactured from buybacks funded by cheap capital. **Average ERP: 6%.**

Higher: 2002 to 2007: China joined the World Trade Organization in 2001 and ushered in a decade of global arbitrage: import costs, labor and taxes shrank as a percentage of sales contributing to a big chunk of S&P 500 margin expansion (Exhibit 11). But risks about pace and sustainability were apparent – i.e., how much corporate tax arbitrage is too much, will the US remain friendly with other regions vying for superpower, oil dependence etc. **Average ERP 3.4%.**

Lower: **Post-Volcker efficiency era 1982 to 1998**: 2yrs post peak nominal rates (similar to today, given mid-2022 peak). Characterized by monstrous gains in labor efficiency (Exhibit 12) via robotics and automation. **Average ERP: 2.5%**

Lowest: 1999 to 2001: Tech Bubble - because it was, literally, a speculative bubble. **Average ERP: -0.1%**

Exhibit 10: Globalization contributed to margin expansion in the 2000s
S&P 500 ex-Fins change in net margin contribution from 1990s to 2021



Source: FactSet, BofA US Equity & Quant Strategy

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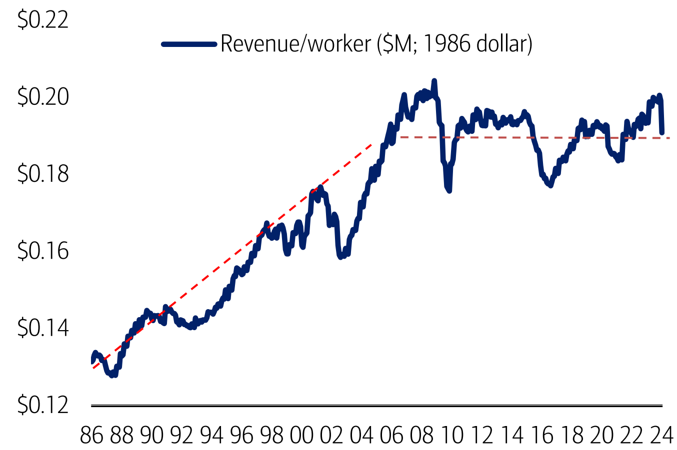
Exhibit 11: 1980s-to early 2000s: labor efficiency gains
S&P 500 companies' revenue per worker ($M 1986 dollar)



Source: BofA US Equity & Quant Strategy, Bloomberg, FactSet

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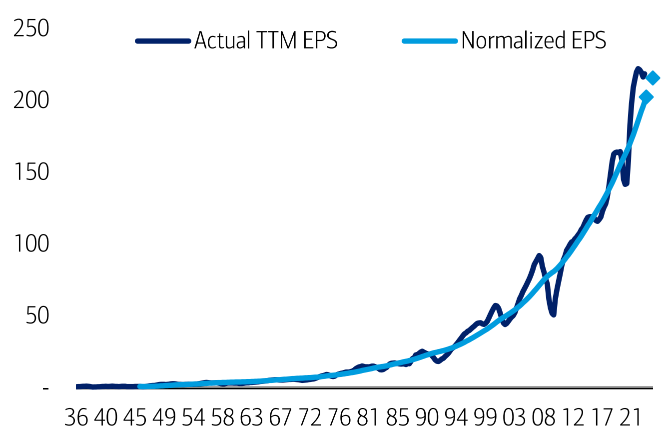
What is the right number for normalized earnings?

Our preferred approach to Shiller or other statistical methods for cyclically adjusting earnings, is that of applying a log-liner trendline to a time series of actual earnings to adjust for cyclicality, and *log-linear* (vs. linear) to accommodate secular shifts in earnings power (Exhibit 13). But, the output is incredibly sensitive to the starting point of the look-back period, with 2025 forecasts ranging from $220 to $245 (Exhibit 14). Moreover, a regression-based approach would have underestimated earnings over the last several years due to margin stability of US corporates despite the shock of a global pandemic, plus massive rate and inflation volatility. An alternative approach - growing trough earnings at a normalized growth rate assumption – yields a higher number. On trough earnings in Q2'23 and a growth rate equivalent to the long-term average earnings growth for the S&P 500 (8%), 2025's normalized earnings is $262.

Exhibit 12: Actual earnings are elevated vs. a log-linear normalized earnings assumption
S&P 500 EPS vs. normalized EPS based on log-linear regression since 1936 (dots = 2023 and 2024 estimates)



Source: BofA US Equity & Quant Strategy, FactSet, Haver Analytics. Pro-forma EPS used since 1988, Operating EPS used between 1977-1988, GAAP EPS (adjusted for write-offs) used from 1936-1977.

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Exhibit 14: Normalized earnings estimates are sensitive to the start date of the look-back period
Normalized EPS estimates based on log-linear regression of actual earnings starting in different decades

Regression begins in...	2024 Norm EPS	2025 Norm EPS
1936	$216	$230
1950	$212	$226
1960	$225	$241
1970	$227	$242
1980	$224	$239
1990	$228	$244
2000	$219	$233

Source: BofA US Equity & Quant Strategy, FactSet, Haver Analytics.

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What's the prognosis? Up more likely than down

We believe that a realistic good case for the market based on lower real rates (1.5%) and an equity risk premium equivalent to that in the 80s/90s period of visibility/efficiency of 3ppt implies a 4.5ppt cost of equity. If we assume normalized earnings of $250 due to higher run-rate nominal GDP growth (we've already seen upward revisions to US GDP) plus margin stability, this yields a fair value of about 5500.

Exhibit 15: S&P 500 fair value given cost of equity and EPS

Fair value = (1/cost of equity)*2025 EPS

Real cost of equity (real rate + ERP)	2025 Normalized EPS								
	$225	**$230**	**$235**	**$240**	**$245**	**$250**	**$255**	**$260**	**$265**
4.00%	5625	5750	5875	6000	6125	6250	6375	6500	6625
4.25%	5294	5412	5529	5647	5765	5882	6000	6118	6235
4.50%	5000	5111	5222	5333	5444	5556	5667	5778	5889
4.75%	4737	4842	4947	5053	5158	5263	5368	5474	5579
5.00%	4500	4600	4700	4800	4900	5000	5100	5200	5300
5.25%	4286	4381	4476	4571	4667	4762	4857	4952	5048
5.50%	4091	4182	4273	4364	4455	4545	4636	4727	4818
5.75%	3913	4000	4087	4174	4261	4348	4435	4522	4609
6.00%	3750	3833	3917	4000	4083	4167	4250	4333	4417
6.25%	3600	3680	3760	3840	3920	4000	4080	4160	4240
6.50%	3462	3538	3615	3692	3769	3846	3923	4000	4077
6.75%	3333	3407	3481	3556	3630	3704	3778	3852	3926
7.00%	3214	3286	3357	3429	3500	3571	3643	3714	3786
7.25%	3103	3172	3241	3310	3379	3448	3517	3586	3655
7.50%	3000	3067	3133	3200	3267	3333	3400	3467	3533
7.75%	2903	2968	3032	3097	3161	3226	3290	3355	3419
8.00%	2813	2875	2938	3000	3063	3125	3188	3250	3313

Source: BofA US Equity & Quant Strategy. Max of $265 is based on trough earnings in 2Q 2023 of $217 grown at the l-t average EPS growth rate of 8%.

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Appendix: sector and industry valuations

Relative sector/industry valuations

Exhibit 16: Relative valuation (vs. S&P 500) by sector (based on data from 1986 - 1/24)
Relative price to book, price to operating cash flow, price to earnings by sector

	Price to Book (Relative)			Price to Operating Cash Flow (Relative)			Forward P/E (Relative)		
Sector	**Current**	**Average**	**Implied upside**	**Current**	**Average**	**Implied upside**	**Current**	**Average**	**Implied upside**
S&P 500 (absolute metrics)	**4.62**	**2.96**	**-36%**	**16.82**	**11.30**	**-33%**	**19.75**	**15.81**	**-20%**
Consumer Discretionary	2.02	1.36	-33%	1.00	0.91	-9%	1.26	1.06	-16%
Consumer Staples	1.23	1.68	37%	0.95	1.27	34%	0.99	1.13	14%
Energy	0.47	0.77	65%	0.39	0.72	85%	0.57	1.05	83%
Financials	0.47	0.59	27%	N/A	N/A	N/A	0.77	0.77	0%
Health Care	1.09	1.69	55%	1.09	1.56	43%	0.93	1.09	16%
Industrials	1.27	1.16	-9%	0.99	1.01	2%	1.00	1.01	2%
Information Technology	2.52	1.50	-41%	1.61	1.23	-24%	1.37	1.12	-18%
Materials	0.63	0.90	43%	0.73	0.89	21%	0.93	1.04	12%
Real Estate	0.61	0.87	43%	N/A	N/A	N/A	0.84	1.53	82%
Communication Services	0.89	0.99	11%	0.72	0.84	16%	0.91	1.18	29%
Utilities	0.40	0.60	50%	0.56	0.65	14%	0.77	0.89	15%

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

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Tactical sector & industry framework

Comm. Svcs. remains #1 in a stock picker's market

Communication Services remains #1 in our tactical sector framework for the third straight month and 12 out of the last 13 months. With META's srong results (see META earnings) earlier this month, the sector is likely to remain #1 in February again. Tech climbed to #2 from #3 last month, while Real Estate fell to #3 from #2. Materials remains the weakest sector for the fourth straight month, followed by Energy and Industrials tied at the second weakest (Exhibit 17). But beyond sector ranks, we see increasing signs that the market is becoming less macro focused. Six industries (GICS level 3) screen as "Opportunities," all of which are from different sectors (GICS level 1), and six "Value Trap" industries are also all from different sectors (Exhibit 22). It's the first time we have this many Opportunities and Value Traps all from different sectors in our history since 1997. It's becoming a stock picker's market.

Sector ranks

We use this framework to rank sectors based on price momentum, earnings momentum, and valuation. Sectors are sorted from highest (most attractive) to lowest (least attractive) as of the latest month. We use this framework to highlight attractive short-term (one- to three-month) sector opportunities for more tactical investors, and also use it as one component in our S&P 500 sector preferences along with a host of factors.

Exhibit 17: S&P 500 Momentum & Value Framework Sector Ranks as of 1/24
Sector ranks based on relative price momentum, EPS revision and valuation

Sector	Combined Rank	Price Momentum Rank	EPS Revision Rank	Valuation Rank
Communication Services	**29**	9	10	10
Information Technology	**24**	11	11	2
Real Estate	**21**	8	4	9
Financials	**20**	10	6	4
Consumer Staples	**18**	3	8	7
Utilities	**17**	2	7	8
Consumer Discretionary	**16**	6	9	1
Health Care	**16**	5	5	6
Energy	**13**	1	1	11
Industrials	**13**	7	3	3
Materials	**11**	4	2	5

Source: BofA US Equity & US Quant Strategy

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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).

Industry framework performance

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

Exhibit 18: Relative performance of Opportunities, Value Traps and Momentum Breakdowns (as of 1/24)
Relative performance vs. equal-weighted S&P industries

	1m	3m	6m	12m	YTD	2yr	Ann'zed	3yr	Ann'zed	5yr	Ann'zed
Opportunities	-0.3%	-1.1%	0.1%	-2.3%	-0.3%	0.7%	0.3%	-1.0%	-0.3%	5.1%	0.7%
Value Traps	2.4%	3.7%	3.2%	2.2%	2.4%	4.4%	2.2%	-0.5%	-0.1%	-20.2%	-3.0%
Momentum Breakdown	-1.5%	-1.1%	-2.2%	12.1%	-1.5%	2.2%	1.1%	-23.4%	-7.4%	-46.3%	-7.4%

Source: BofA Us Equity & US Quant Strategy

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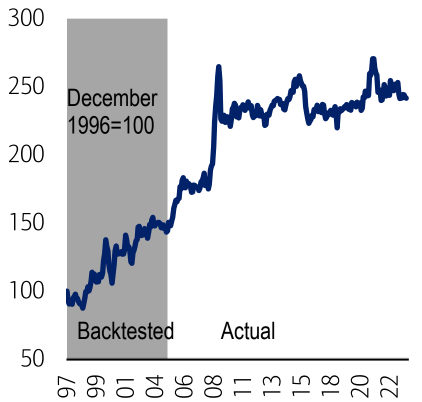
Exhibit 19: "Opportunities" Cumulative Relative Performance, 12/1996-1/2024 (backtested)

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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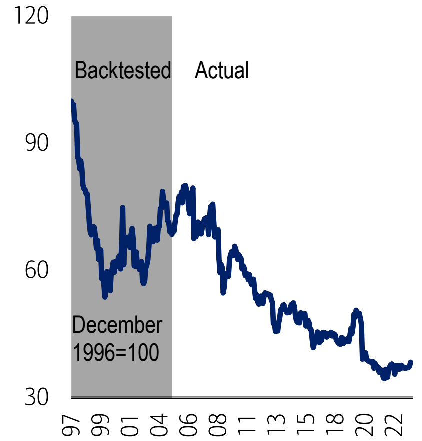
Exhibit 20: "Value Traps" Cumulative Relative Performance, 12/1996-1/2024 (backtested)

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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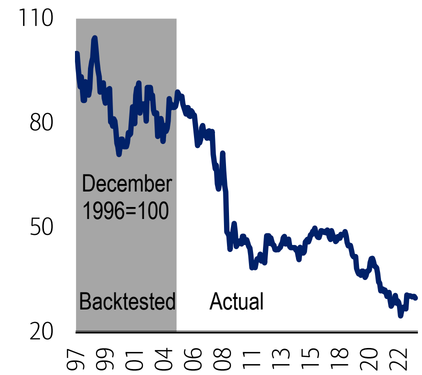
Exhibit 21: "Momentum Breakdowns" Cumulative Relative Performance, 12/1996-1/2024 (backtested)

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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Exhibit 22: S&P 500 Momentum & Value Framework - industry ranks as of 1/24
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
Passenger Airlines	Industrials	30	10	10	10	Opportunity
Interactive Media & Services	Communication Services	26	7	9	10	Opportunity
Household Durables	Consumer Discretionary	26	10	8	8	Opportunity
Hotel & Resort Reits	Real Estate	25	9	8	8	Opportunity
Consumer Finance	Financials	25	10	8	7	Opportunity
Construction Materials	Materials	24	8	10	6	Opportunity
Entertainment	Communication Services	24	9	10	5	
Independent Power And Renewable Electricity Producers	Utilities	23	5	8	10	
Office Reits	Real Estate	23	10	3	10	
Semiconductors & Semiconductor Equipment	Information Technology	22	10	10	2	
Building Products	Industrials	22	8	9	5	
Electronic Equipment Instruments & Components	Information Technology	22	8	9	5	
Retail Reits	Real Estate	21	7	5	9	
Banks	Financials	21	10	3	8	
Media	Communication Services	21	4	7	10	
Hotels Restaurants & Leisure	Consumer Discretionary	20	7	8	5	
Trading Companies & Distributors	Industrials	20	10	7	3	
Software	Information Technology	20	8	10	2	
Insurance	Financials	19	4	9	6	
Industrial Conglomerates	Industrials	18	5	7	6	
Diversified Telecommunication Services	Communication Services	18	7	1	10	
Consumer Staples Distribution & Retail	Consumer Staples	18	6	9	3	
It Services	Information Technology	18	9	8	1	
Distributors	Consumer Discretionary	18	5	5	8	
Broadline Retail	Consumer Discretionary	17	6	10	1	
Energy Equipment & Services	Energy	17	1	6	10	
Commercial Services & Supplies	Industrials	17	6	10	1	
Biotechnology	Health Care	17	6	4	7	
Health Care Equipment & Supplies	Health Care	17	9	5	3	
Capital Markets	Financials	17	8	6	3	
Industrial Reits	Real Estate	17	9	4	4	
Residential Reits	Real Estate	16	4	3	9	
Multi-Utilities	Utilities	16	2	5	9	
Aerospace & Defense	Industrials	15	4	9	2	
Electrical Equipment	Industrials	15	5	7	3	
Construction & Engineering	Industrials	15	6	7	2	
Machinery	Industrials	15	8	3	4	
Containers & Packaging	Materials	15	5	6	4	
Electric Utilities	Utilities	14	2	6	6	
Beverages	Consumer Staples	14	2	5	7	
Health Care Reits	Real Estate	14	3	6	5	
Communications Equipment	Information Technology	14	3	2	9	Value Trap
Tobacco	Consumer Staples	14	1	5	8	
Food Products	Consumer Staples	14	2	4	8	
Specialty Retail	Consumer Discretionary	14	7	3	4	
Professional Services	Industrials	14	5	5	4	
Leisure Products	Consumer Discretionary	14	3	2	9	Value Trap
Life Sciences Tools & Services	Health Care	14	9	3	2	
Specialized Reits	Real Estate	13	4	2	7	
Auto Components	Consumer Discretionary	13	1	4	8	
Household Products	Consumer Staples	13	3	6	4	
Health Care Providers & Services	Health Care	12	1	4	7	
Technology Hardware Storage & Peripherals	Information Technology	12	3	8	1	
Textiles Apparel & Luxury Goods	Consumer Discretionary	12	2	7	3	
Financial Services	Financials	12	6	4	2	
Real Estate Management & Development	Real Estate	12	7	2	3	Momentum Breakdown
Pharmaceuticals	Health Care	12	4	3	5	
Oil Gas & Consumable Fuels	Energy	11	1	1	9	Value Trap
Chemicals	Materials	11	3	2	6	Value Trap
Metals & Mining	Materials	11	5	1	5	
Air Freight & Logistics	Industrials	10	2	1	7	Value Trap
Ground Transportation	Industrials	10	8	1	1	
Personal Care Products	Consumer Staples	10	3	1	6	Value Trap
Automobiles	Consumer Discretionary	**4**	1	2	1	

Source: BofA US Equity & US Quant Strategy

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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: (Current E/P – Historical Avg. E/P) / 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.

Disclosures

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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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