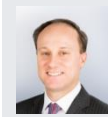


Growth at any price?: Tech investors pay 1999 growth premiums again



David Bianco
Americas Chief Investment Officer
DWS

Tech investors pay-up like it's 1997-1999, yet central banks fear it's 1980-1982

We see similarities to and lessons from 1999 for Tech investors and 1980 for central banks. If Tech investors aren't more valuation conscious, the risk of losses or a long future period of sub fair returns is high. If central banks retreat from their inflation fight too soon, the risk of inflation reaccelerating and thus cause for higher interest rates shouldn't be ignored. We expect the challenges of returning the U.S. economy to healthy growth and inflation rates, combined with very demanding growth premiums now embedded in the valuations of the digital and Tech titans dominating the S&P 500, will lead to greater equity market volatility.

Significant growth premium returns to S&P PE: Lost for 20 years by Tech wreck

At 45x, the S&P 500 trades at 20.7x our 2023E S&P EPS and 19.4x our 2024E S&P EPS. We estimate a fair PE for a company or index expected to generate long-term nominal EPS growth, plus its dividend yield, that is equal to its nominal cost of equity to be: 1/ real CoE.

We estimate a fair long-term nominal total return on S&P 500 ownership, i.e. its cost of equity (CoE), at about 8%. This consists of a 5.5% real cost of equity and a long-term inflation assumption of about 2.5%. This valuation construct for a fair steady-state PE suggests that the forward 4-quarters observed S&P PE of about 20 is 10% above its fair steady state forward PE of 18.2. This is before making any adjustments to our non-GAAP S&P EPS estimates for accounting quality or any adjustments for the possibility of current S&P EPS being above long-term norms. We happen to think that forward S&P EPS and margins are close to sustainable norms, despite margins still well above history. But we strongly advocate at least a 5% reduction to our and most other non-GAAP S&P EPS estimates for more accurate accounting quality. Thus, we see the S&P 500 as trading with a 15% premium to a fair steady-state PE. As exhibits inside show, this is the highest growth premium since 2002 and contrasts with the growth discount from 2002 until the pandemic. The Tech wreck and stagflation of the 1970s eviscerated past S&P 500 growth premiums.

Growth premiums are risky: Adds to interest rate and risk premium uncertainties

Short and long-term interest rates remain more uncertain than usual owing to the ongoing inflation fight by central banks as well as fiscal and global factors that could cause interest rates to return to pre 2008 financial crisis norms despite very slow economic growth. The fair equity risk premium (ERP) for the S&P 500 entails gauging cyclical risks as well as uncertainties related to normalized S&P EPS estimates. These two key valuation factors, future interest rates and a fair equity risk premium, have long vexed investors; but a significant growth premium at the index level introduces another big dimension of risk.

Estimating a fair growth premium requires evaluating the feasibility of earning returns on capital above the cost of capital on new investments. Not just the returns earned on new investment, but also the size of the new investments and for how many years such strong returns and investment growth will continue. How certain are such economic profit growth estimates in a competitive world, particularly in Tech, and among the largest companies?

The S&P is now a growth index! And more concentrated by stocks and 1 sector

None of the uncertainties about growth premiums above are new to growth stock investors. They know the risks and volatility that usually comes with investing in such stocks and the importance of diversification to help guard against these risks. Today, the S&P 500 is a growth index and more concentrated by stocks and one sector or similar industries than ever, save perhaps 1972 and 1999. While we might be willing to assign a moderate growth premium to the S&P of not much more than 10%, we think it's important to consider diversifying away from the very large and concentrated growth premium at Tech. The Tech sector trades at 30x forward EPS, which is a 50% premium to the S&P PE, but also represents an about 65% growth premium vs. 15% at the S&P. We are under-weight Tech and are seeking less demanding growth stocks at Health Care and select Industrials and Consumer industries.

Just because big Tech is expensive, doesn't make the rest of the S&P cheap

S&P EPS growth and broader U.S. corporate profits have been stalled for two years. We expect 2Q23 earnings season to indicate that profit growth challenges remain and likely continue through the year. We still expect a small recession and more importantly a shallow recovery and slow growth afterward. Provided no sharp job market damage, we continue to expect S&P EPS for 2023, 2024 & 2025 of about \$220, \$235 & \$245. This EPS outlook supports an immediate S&P 500 fair value of about 4000, unless the market stays willing to pay aggressively and very upfront for the growth potential, large but uncertain, at Tech.

Contributor: Ju Wang, Portfolio Manager Equity

Global Equity Index Forecasts: 12-months			
Index	Jun 2024F	NTM EPS Growth	Target PE
S&P 500	4,200	1.6%	18.8
EuroStoxx 50	4,450	0.3%	12.9
Stoxx 600	480	0.3%	13.8
MSCI Japan	1,400	3.3%	14.9
MSCI Asia xJ	680	6.3%	14.2
MSCI EM	1,040	4.6%	12.6

S&P 500 Outlook at Yearend			
	2021	2022	2023F
S&P 500	4766	3840	4000
Dividend Yield	1.3%	1.75%	1.75%
S&P EPS	\$210	\$222	\$220
Trailing PE	22.7	17.3	18.2
DPS	\$61	\$67	\$70

S&P 500 Outlook at Yearend			
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Next 5%+ Price Move
(Up / Balanced Risk / **Down**)
Risk of near-term 10%+ correction
(Low / Moderate / **High**)

Taxable U.S. Investor Asset Allocations		
Asset Class	Long-term	Current
Fixed Income/Cash	30-35%	38.5%
Equities	55-60%	53.0%
US Equities	40%	34%
S&P 500	35%	32%
Small Caps	0-10%	2%
Foreign DM	10-15%	11%
Foreign EM	0-10%	8%
Alternatives	10%	8.5%

Key CIO Views		
Macro signal:	Jul 2023	Jun 2024F
U.S. Fed Funds rate	5.00%-5.25%	4.75%-5.00%
10yr Treasury yield	3.85%	4.20%
US IG Corp Spreads	165bp	110bp
US High Yield Spreads	460bp	450bp
Crude Oil (WTI) \$/bbl	75	85
EUR / USD FX rate	1.12	1.12

GDP Forecasts			
Region	2022	2023F	2024F
US	2.1%	1.0%	0.8%
World	3.4%	2.8%	3.0%
Euro area	3.5%	0.8%	0.9%
China	3.0%	6.0%	5.0%
Japan	1.0%	1.0%	0.9%

* Q4/Q4 GDP growth.
EPS = Earnings Per Share
GDP = Gross Domestic Product
FX = Foreign Exchange
TIPS = Treasury Inflation Protected Securities
Source: DWS Investment Management GmbH. All opinions and claims are based upon data on 7/21/2023 and may not come to pass. This information is subject to change at any time, based upon economic, market and other considerations and should not be construed as a recommendation. All foreign asset exposures are not FX hedged unless otherwise noted. For illustrative purposes only.



S&P 500 Sector and Industry views

	Market	Allocated	Sector	2022 PE			Overweight	2022			Equal weight	2022			Underweight	2022		
				2022	2023	2024		2022	2023	2024		2022	2023	2024		2022	2023	2024
Over-weight	13.1%	17.8%	Health Care	16.5	17.5	16.4	Biotechnology Health Care Equipment & Supplies Pharmaceuticals	12.1 27.2 13.4	14.8 25.6 15.2	13.8 22.7 14.5	Health Care Providers & Services	16.4	15.3	14.5	Life Sciences Tools & Services	24.6	25.7	23.7
	8.4%	11.4%	Communication Services	21.6	18.8	17.7	Diversified Telecommunication Services Entertainment Interactive Media & Services	6.1 56.4 28.7	6.9 28.4 23.6	6.8 23.3 22.1	Media Wireless Telecommunication Services	11.8 68.0	12.2 20.9	12.0 19.4				
	4.1%	5.6%	Energy	8.1	10.1	9.5	Energy Equipment & Services	25.0	17.4	14.8	Oil Gas & Consumable Fuels	7.5	9.7	9.2				
	12.6%	13.4%	Financials	16.1	15.1	14.3	Banks Insurance	10.4 17.2	10.0 14.0	9.8 12.7					Capital Markets Consumer Finance Financial Services	18.5 9.8 25.4	19.0 11.5 22.6	17.8 10.0 21.7
	2.5%	3.3%	Utilities	19.4	18.3	17.3	Electric Utilities	20.0	18.3	17.2	Gas Utilities Independent Power & Renewable	21.4 13.1	20.3 12.5	19.2 11.6	Water Utilities Multi-Utilities	33.2 17.9	32.2 17.8	30.8 17.1
Equal-weight	8.5%	8.5%	Industrials	23.3	21.1	19.8	Aerospace & Defense Passenger Airlines Electrical Equipment Ground Transportation	34.5 20.3 25.1 19.3	23.5 9.0 25.3 19.7	20.4 8.2 23.4 18.0	Industrial Conglomerates	22.1	24.7	21.4	Air Freight & Logistics Building Products Commercial Services & Supplies Construction & Engineering Machinery Professional Services Trading Companies & Distributors	14.8 22.8 35.6 31.5 20.3 29.1 21.3	17.9 20.9 34.5 28.6 18.4 28.6 18.6	17.3 19.3 33.3 23.9 18.9 27.3 17.9
	2.5%	2.5%	Materials	14.9	18.3	17.2	Metals & Mining	9.4	14.8	17.2	Chemicals	16.7	19.1	17.2	Construction Materials Containers & Packaging	40.5 12.2	38.6 14.9	32.2 12.9
Under-weight	6.5%	6.0%	Consumer Staples	21.6	21.1	20.2	Beverages	26.8	24.9	23.5	Consumer Staples Distribution & Household Products Personal Care Products Tobacco	23.1 26.7 29.9 13.0	22.1 25.6 28.3 12.7	20.8 24.6 24.9 12.7	Food Products	16.6	17.7	17.3
	2.5%	1.7%	Real Estate	17.9	18.3	17.6	Specialized REITs	18.3	18.8	17.9	Hotel & Resort REITs Residential REITs Retail REITs	9.8 19.0 12.9	10.4 18.2 13.3	10.4 17.7 13.0	Health Care REITs Industrial REITs Office REITs Real Estate Mgmt. & Development	19.0 24.0 11.7 27.4	18.7 22.5 12.0 40.3	17.7 22.0 12.0 35.8
	10.8%	7.1%	Consumer Discretionary	36.6	30.0	27.6	Automobile Components	20	16.8	13.9	Hotels Restaurants & Leisure	64	27.6	24.3	Automobiles Distributors Household Durables Broadline Retail Leisure Products Multiline Retail Specialty Retail Textiles Apparel & Luxury Goods	28.1 17.5 9.1 -1535.6 14.3 19.6 25.1	34.0 17.1 12.5 72.2 13.9 20.0 24.4	32.7 16.0 12.6 55.4 13.9 19.8 23.0
	28.6%	22.8%	Information Technology	30.4	30.6	28.1	Communications Equipment IT Services	17.5 20.8	15.6 20.0	14.9 18.7	Software	37.6	33.7	31.0	Electronic Equipment Semiconductors Technology Hardware Storage & Peripherals	20.8 28.9 29.8	22.5 35.4 29.5	21.4 31.5 27.3
				Aggregate PE: DWS View				Overweight	17.5	16.8	15.8	Equalweight	15.2	15.9	14.9	Underweight	27.4	27.2
S&P								4535				2022, 2023 & 2024 EPS	219.79	220.00	235.00	2022, 2023 & 2024 PE	20.6	20.6
										Bottom-up Consensus EPS	219.79	220.00	246.50	Bottom-up Cons. PE	20.6	20.6	18.4	
														2022, 2023 & 2024 Ex Energy PE	215	215	20.1	
														Btm-up Cons. Ex Energy PE	22.2	21.4	19.0	

Sector OW	10.55%
Sector UW	-10.55%
Industry OW	21.99%
Industry UW	-21.99%

Macro tilts:	
Cyclicals	-4.69%
Defensive	4.70%
Value (Financial+Energy)	1.87%
Growth	0.09%
Growth ex Health Care	-4.91%
Consumer	-3.66%
Services/experience	0.21%
Disc. Goods	-4.10%
Retailing	-1.55%
Durables	-2.55%
Staples Goods/Retail	0.23%
Commodity	1.23%
Energy	1.44%
Metals/Chemicals	-0.21%
Capex	5.30%
Capacity additions	2.21%
Productivity	3.09%
Health Care	5.00%
Innovation	3.30%
Marketers	2.40%
Insurers	0.05%
Financials	0.43%
Up rates/low spreads	1.59%
Capital Markets	-2.74%
Insurance	1.58%
Bond Substitutes	-0.02%
Weak FX \$ plays	0.98%
High R&D plays	2.07%
Transport	0.72%
Geopolitical risk	1.88%
Weak oil prices	0.20%
Inflation shock	0.40%
Stagflation Protection	4.57%
Domestic GDP	-1.89%
Global GDP	-5.65%
Consumer TMT	0.73%
Trade sensitive	-2.53%

Note: Multi-Utilities moved from EW to UW, Software from UW to EW.
 More details on sector earnings forecast and sector intrinsic valuation can be found towards the back of this note.
 Price as of 7/20/2023
 Source: DWS Investment Management GmbH

DWS Investment GmbH View: S&P 500 fair value by sector: Assuming a ~5.60% real cost of equity (CoE) for overall S&P 500

	Market Value (\$bn)	Current 2023 PE	2023E Earnings (\$bn)	Normal Ratio	Normal 2023E Earnings	Accounting Quality Adjustment	Fully Adjusted Earnings	Net Debt / Market Cap	Real CoE	Steady State Value	Growth Premium	2023 Start Fair Value (\$bn)	2023E Dividend Yield	2023 End Fair Value (\$bn)	PE on Normal 2023E EPS	2023 End Upside %	2023 End Upside vs. S&P 500
Communication Services	3,221	18.8	171.0	97%	166.2	-8%	152.9	15%	5.60%	2,731	0%	2,731	1.0%	2,939	17.7	-9%	6%
Consumer Discretionary	4,030	30.0	134.5	105%	141.2	-8%	129.9	13%	5.50%	2,362	15%	2,725	1.0%	2,929	20.7	-27%	-13%
<i>Automobiles</i>	817	34.0	24.0	100%	24.0	-12%	21.1	21%	6.50%	325	30%	422	0.3%	461	19.2	-44%	-29%
<i>Broadline (Internet) Retail</i>	1,191	72.2	16.5	150%	24.8	-7%	23.0	2%	5.50%	419	50%	628	0.0%	681	27.5	-43%	-28%
<i>ex. Auto & Broadline (Internet) Retail</i>	2,023	21.5	94.0	98%	92.4	-7%	85.7	16%	5.30%	1,618	3%	1,674	1.5%	1,788	19.3	-12%	3%
Consumer Staples	2,531	21.1	120.0	100%	120.0	-7%	111.6	15%	5.00%	2,232	0%	2,232	2.8%	2,349	19.6	-7%	7%
Energy	1,621	10.1	160.0	86%	138.1	-15%	117.4	14%	6.00%	1,957	-20%	1,565	2.9%	1,660	12.0	2%	17%
Financials	4,905	15.1	324.0	99%	320.4	-9%	291.5		6.40%	4,555	-8%	4,191	2.0%	4,500	14.0	-8%	6%
<i>Banks</i>	1,222	10.0	122.0	100%	122.0	-10%	109.8		7.50%	1,464	-15%	1,244	3.4%	1,333	10.9	9%	24%
Health Care	5,080	17.5	290.0	99%	288.4	-8%	265.4	9%	5.40%	4,914	0%	4,914	1.6%	5,249	18.2	3%	18%
Industrials	3,260	21.1	154.5	101%	155.7	-8%	143.3	17%	5.60%	2,558	0%	2,558	1.8%	2,733	17.6	-16%	-2%
Information Technology	10,706	30.6	350.0	103%	362.0	-5%	343.9	2%	5.40%	6,369	10%	7,005	0.9%	7,534	20.8	-30%	-15%
Materials	952	18.3	52.0	99%	51.3	-10%	46.1	18%	5.75%	802	0%	802	1.7%	858	16.7	-10%	5%
Real Estate	915	18.3	50.0	97%	48.4	-8%	44.5	35%	5.25%	848	0%	848	3.6%	888	18.3	-3%	12%
Utilities	978	18.3	53.5	103%	55.3	-8%	50.9	80%	5.25%	969	0%	969	3.4%	1,016	18.4	4%	18%
S&P 500 (\$ bn)	38,198	20.5	1859.5	99%	1847.0	-8.1%	1697.4		5.57%	30,296	0.8%	30540	1.6%	32,655	17.7	-15%	0%
S&P 500 Index (\$/sh)	4535	20.6	220.0	100%	220.0	-8.2%	202.0	11%	5.60%	3607	0.0%	3607	1.6%	3847	17.5	-15%	0%



Source: IBES, DWS Investment GmbH as of 7/20/2023. Past performance may not be indicative of future results.

S&P 500 EPS historical constituents represents the earnings per share (EPS) of S&P 500 index constituents at the time, while S&P 500 EPS current constituents represents the earnings per share of index constituents as of the date the data was compiled 3/31/2023.

The estimated 2023 year end upside is on absolute valuation basis of each sector, not on relative sector valuation basis.

S&P 500 Intrinsic Valuation Model

S&P 500 Capitalized EPS Valuation		S&P 500 Dividend Discount Model		S&P 500 Long-term EPS & DPS Growth		S&P 500 Cost of Equity & Fair Book Multiple	
DWS 2023E S&P 500 EPS	\$220.00	DWS 2023E S&P 500 DPS	\$70.00	DWS 2023E S&P 500 aggregate ROE	21.8%	Fair long-term nominal return on S&P 500 index	8.60%
DWS "normal 2023E" S&P 500 EPS	\$220.00	DWS "normal 2023E" S&P 500 DPS	\$70.00	2022E end S&P 500 book value per share	\$1,007	Components of estimated fair S&P 500 return:	
"Normal 2023E" EPS / 2023E EPS	100%	Normal dividend payout ratio	35%	DWS "normal 2023E" S&P 500 aggregate ROE	20.1%	+ Long-term real risk free interest rate	1.60%
Accounting quality adjustment to pro forma EPS	-\$18.00	EPS directed to net share repurchases	\$38.00	S&P EPS retained for true reinvestment		+ Long-term fair S&P 500 equity risk premium*	4.00%
Normal 2023E S&P 500 EPS fair to capitalize	\$202	Normal share repurchase payout ratio	19%	Estimated ROE on reinvested S&P EPS		= Long-term real S&P 500 cost of equity	5.60%
Key principle: steady-state value = normal EPS / real CoE		Total payout of S&P 500 EPS	\$108.00	Economic margin (EM) or ROE-CoE		+ Long-term inflation forecast	3.00%
		Total payout ratio of normal and quality adj. EPS	53%	Sources of long-term earnings growth:		= S&P 500 nominal cost of equity	8.60%
				+ Long-term inflation forecast	3.00%	* S&P 500 ERP history 300-400bps, w/ real CoE @ 5% - 6.5%	
<u>S&P 500 EPS Capitalization Valuation</u>		<u>S&P 500 DPS Discount Model</u>		+ Fair return on true reinvestment	2.61%	<u>Fair S&P 500 Market Value and Book Value Multiple</u>	
Normal EPS / (real CoE - (EM/payout) - EM):		Normal DPS / (nominal CoE - DPS growth):		+ Value added return on true reinvestment	0.00%	2022E end S&P 500 book value per share	\$1,007
S&P 500 intrinsic value at 2023 start	3607	S&P 500 intrinsic value at 2023 start	3607	= Long-term earnings growth	5.61%	Fair PB = Fair PE * normal aggregate ROE	3.58
S&P 500 intrinsic value at 2023 end	3847	S&P 500 intrinsic value at 2023 end	3847	+ Growth from net share repurchases	1.05%	Fair PE =(inc ROE-g)/(inc real ROE*(real CoE-real g))	17.9
Implied fair fwd PE in early 2023 on 2023E \$220 EPS	16.4	Implied fair forward yield on 2023E DPS of \$70.0	1.94%	= Long-term S&P 500 EPS/DPS growth	6.66%	Implied S&P 500 fair value of book at 2023 start	3607
Implied fair trailing PE at 2023 end on 2023E \$220 EPS	17.5	Implied fair trailing yield on 2023E DPS of \$70.0	1.82%	+ Fair normal dividend yield	1.94%	Steady-state PB = normal agg. ROE / real CoE	3.58
				= Total long-term return at constant PE	8.60%	Confirmed by fair steady-state PE = 1 / real CoE	17.9
Normal EPS / (real CoE-value added EPS growth)	3607	DPS discount model using true DPS (all payout)	3607	Value added growth premium in fair value est.	0%	Normal 2023E economic profit per share	\$145.61

S&P 500 EPS discount model 5 steps to value:

- 1) Estimate normalized S&P 500 EPS
- 2) Adjust normalized EPS for pro forma accounting quality
- 3) Estimate a fair long-term real return on S&P 500 ownership (CoE)
- 4) Capitalize normalized and accounting quality adj. EPS at real CoE
- 5) Consider long-term potential for value added growth opportunities

		Normal 2023E S&P 500 EPS				
		\$210	\$215	\$220	\$225	\$230
Real	5.10%	4336	4473	4611	4751	4892
cost of	5.35%	3965	4079	4194	4310	4426
equity	5.60%	3653	3750	3847	3944	4041
	5.85%	3388	3471	3554	3636	3719
	6.10%	3158	3230	3302	3374	3444

Source: DWS Investment Management GmbH

Optimistic 2023 end 10yr yield outlook: 2.5% inflation expectation + 1% overnight real rate + 0.75% inflation risk premium - 0.5% risk asset hedge = 3.75%

Pessimistic 2023 end 10yr yield outlook: 2.5% inflation expectation + 1% overnight real rate + 1.5% inflation risk premium - 0% risk asset hedge = 5.00%

DWS June 2024 equity index targets

Index	3M relative View	Current Level	Previous Target CIO Day Mar	Target Jun 24	Chg in Target	Expected Total Return Jun 24	----- thereof -----		Assumptions					
							EPS growth NTM*	LTM multiple impact	Dividend Yield	EPS NTM* (e)	DWS vs. Cons.	Target LTM P/E in Jun 24	Target PE discount to US	
S&P 500		4,221	4,100	4,200	2%	1.2%	USD	1.6%	-1%	1.7%	225	-3.7%	18.8x	
Stoxx 600		461	480	480	0%	7.6%	EUR	0.3%	4%	3.4%	34.7	-7.0%	13.8x	-27%
EuroStoxx 50		4,311	4,350	4,450	2%	6.7%	EUR	0.3%	3%	3.5%	345	-6.0%	12.9x	-32%
DAX40		16,019	16,300	17,000	4%	6.1%	EUR	1.5%	1%	3.4%	1363	-7.1%	12.4x	-34%
SMI		11,415	11,100	11,500	4%	3.9%	CHF	14.0%	-11%	3.1%	692	-2.0%	16.7x	-11%
FTSE 100		7,567	8,100	7,700	-5%	5.9%	GBP	-2.6%	4%	4.1%		-7.6%	11.2x	-40%
MSCI EM		983	1,020	1,040	2%	8.9%	USD	4.6%	1%	3.1%	82.8	-0.5%	12.6x	-33%
MSCI AC Asia xJ		632	670	680	1%	10.3%	USD	6.3%	2%	2.7%	48.2	-2.3%	14.2x	-25%
MSCI Japan		1,341	1,250	1,400	12%	6.7%	YEN	3.3%	-1%	2.4%	92.3	-1.7%	14.9x	-21%
MSCI Australia		1,413	1,450	1,450	0%	7.1%	AUD	-3.3%	6%	4.4%	95.0	-4.5%	15.2x	-19%

DWS Investment GmbH S&P 500 Annual EPS Outlook

	2014A	2015A	2016A	2017A	2018A	2019A	2020A	2021A	2022A	y/y	Bottom-up Consensus (IBES)				DWS View				Normalized 2023	
											2023E	y/y	2024E	y/y	2023E	y/y	2024E	y/y	(\$)	% of 2023
S&P 500 EPS (historical index)	\$118.82	\$117.46	\$118.10	\$132.00	\$161.93	\$162.93	\$139.72	\$208.12	\$218.09	4.8%										
S&P 500 EPS (current constituents)	\$116.65	\$117.27	\$117.34	\$129.30	\$155.67	\$161.41	\$144.04	\$207.87	\$219.79	4.7%	\$220	0.1%	\$247	12.0%	\$220	0.1%	\$235	6.8%	\$220	100%
Sector (\$ bn)																				
Communication Services	67.8	78.4	91.3	99.3	124.2	130.6	135.8	188.4	148.9	-21.0%	171.8	15.3%	201.7	17.4%	171.0	14.8%	182.0	6.4%	166.2	97%
Consumer Discretionary	59.7	70.0	78.4	82.5	97.6	95.2	70.7	114.6	110.1	-4.0%	139.3	26.6%	163.4	17.3%	134.5	22.2%	146.0	8.6%	141.2	105%
Consumer Staples	83.6	82.4	85.1	89.4	96.4	97.4	104.8	117.2	117.0	-0.1%	120.2	2.7%	130.6	8.7%	120.0	2.6%	125.0	4.2%	120.0	100%
Energy	94.6	39.6	10.4	37.1	69.8	49.2	-6.7	79.1	201.3	154.6%	143.3	-28.8%	144.8	1.0%	160.0	-20.5%	170.0	6.3%	138.1	86%
Financials	184.4	200.6	203.1	212.5	262.6	276.5	224.7	362.3	308.0	-15.8%	332.3	9.0%	363.2	9.3%	324.0	6.2%	342.5	5.7%	320.4	99%
Health Care	137.2	152.1	157.1	171.4	188.2	206.1	226.2	293.3	308.0	5.0%	268.9	-12.7%	303.3	12.8%	290.0	-5.8%	310.0	6.9%	288.4	99%
Industrials	100.4	103.9	98.2	107.1	130.3	124.9	66.3	111.4	139.9	25.7%	160.1	14.4%	181.0	13.1%	154.5	10.4%	165.0	6.8%	155.7	101%
Information Technology	162.5	168.1	176.4	207.8	239.5	233.2	264.5	345.4	352.6	2.1%	357.8	1.5%	418.0	16.8%	350.0	-0.7%	381.0	8.9%	362.0	103%
Materials	24.8	23.7	22.8	28.7	36.1	34.1	32.4	61.3	64.0	4.4%	52.0	-18.8%	54.7	5.3%	52.0	-18.7%	55.5	6.7%	51.3	99%
Real Estate	22.4	25.5	28.1	31.7	35.4	36.9	36.8	43.9	51.0	16.2%	50.9	-0.3%	54.0	6.1%	50.0	-2.0%	52.0	4.0%	48.4	97%
Utilities	32.6	32.8	35.3	36.7	40.5	44.5	45.9	49.0	50.4	2.9%	53.4	6.0%	58.2	9.0%	53.5	6.3%	56.5	5.6%	55.3	103%
S&P 500	969.9	977.2	986.2	1104.1	1320.6	1328.6	1201.3	1765.9	1848.2	4.7%	1850.0	0.1%	2072.8	12.0%	1859.5	0.6%	1985.5	6.8%	1847.0	99%
S&P ex. Energy (\$bn)	875.3	937.6	975.8	1067.0	1250.7	1279.4	1208.0	1686.9	1646.9	-2.4%	1706.7	3.6%	1928.0	13.0%	1699.5	3.2%	1815.5	6.8%	1708.8	101%
S&P ex. Tech (\$bn)	807.4	809.1	809.8	896.3	1081.1	1095.4	936.8	1420.5	1495.6	5.3%	1492.2	-0.2%	1654.9	10.9%	1509.5	0.9%	1604.5	6.3%	1485.0	98%
S&P 500 Sales/Share (historical index)	\$1,163	\$1,127	\$1,151	\$1,232	\$1,339	\$1,415	\$1,362	\$1,567	\$1,753	11.9%										
S&P 500 Non-GAAP Net Margin	10.2%	10.4%	10.3%	10.7%	12.1%	11.5%	10.3%	13.3%	12.4%											

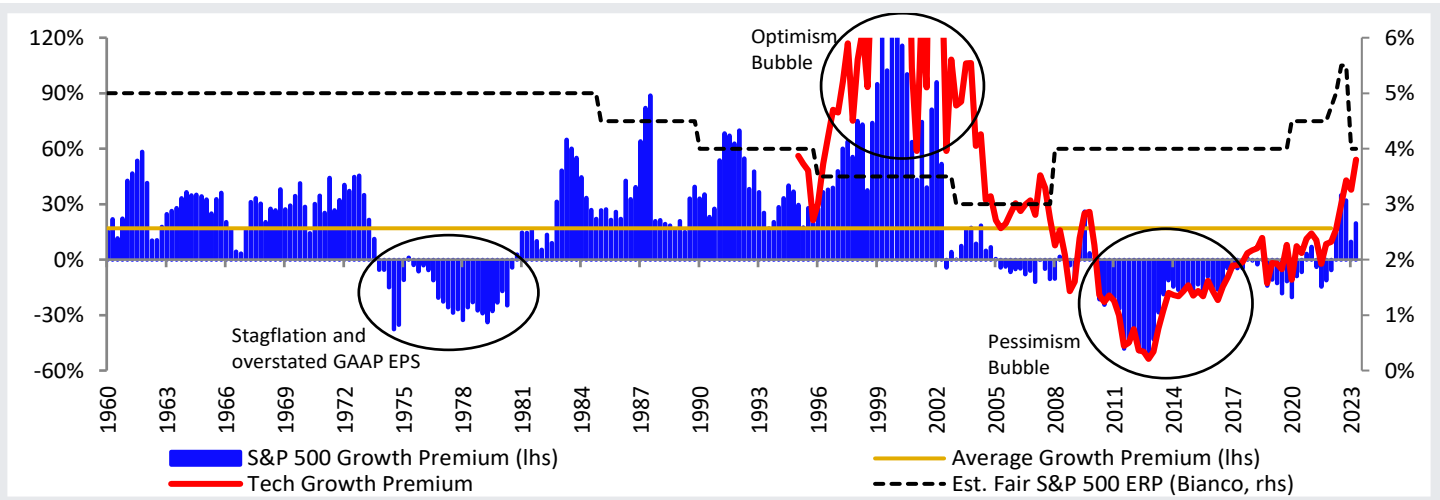
S&P 500 EPS	Year	1Q	2Q	3Q	4Q
2019A	163	39	41	41	42
2020A	140	33	28	38	42
2021A	210	49	53	54	54
2022A	222	55	58	56	53
2023E	220	53	55	55	57

S&P 500 EPS historical constituents represents the earnings per share (EPS) of S&P 500 index constituents at the time, while S&P 500 EPS current constituents represents the earnings per share of index constituents as of the date the data was compiled 3/31/2023.

Source: Factset, DWS Investment GmbH as of 7/20/2023. Past performance may not be indicative of future results.

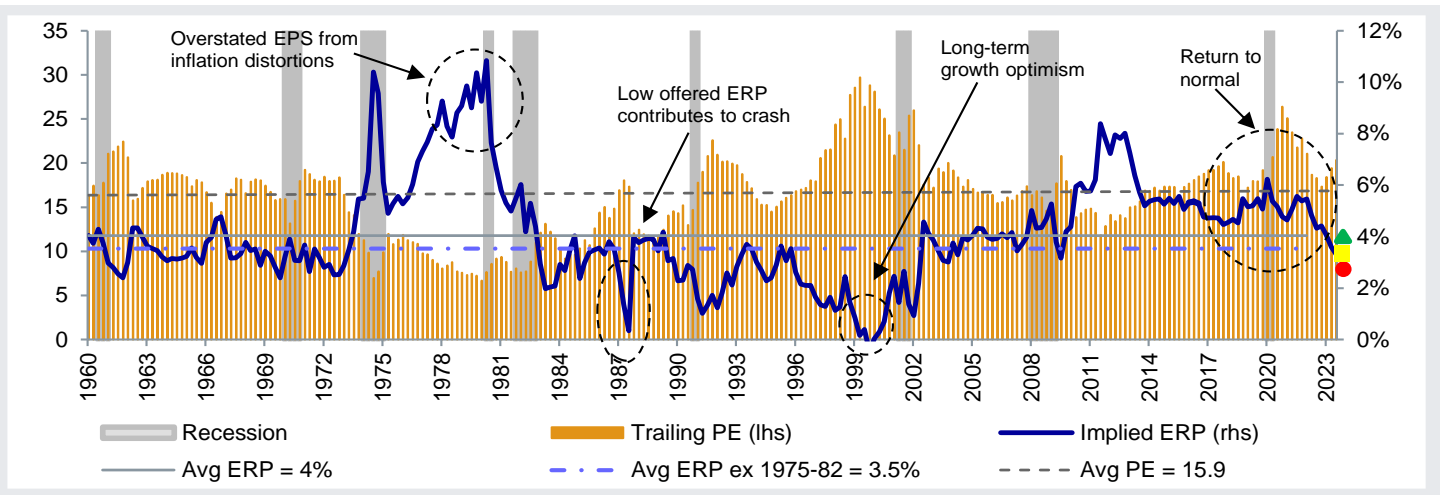
S&P 500 valuation

S&P 500 and Tech growth premium



Source: Haver, Factset, DWS Investment GmbH as of 6/30/2023. Past performance may not be indicative of future results.

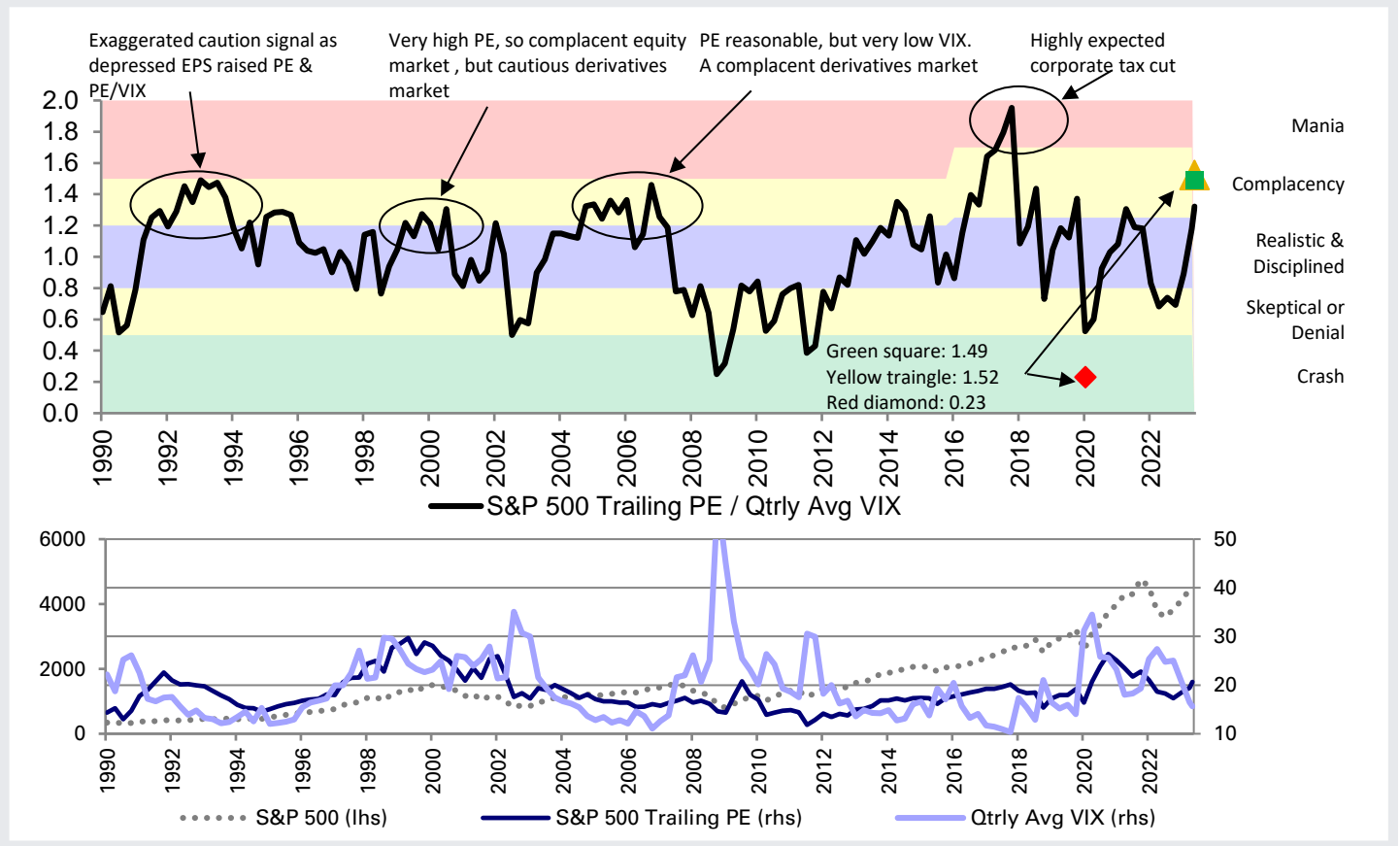
S&P 500 PE and implied ERP



Red circle: ERP=2.9% implied by PE on our 2023 EPS estimate of \$220 and 2% assumed real 10 year interest rate
 Yellow square: ERP=3.4% implied by PE on our 2023 EPS estimate of \$220 and 1.5% assumed real 10 year interest rate
 Green triangle: ERP=3.9% implied by PE on our 2023 EPS estimate of \$220 and 1% assumed real 10 year interest rate

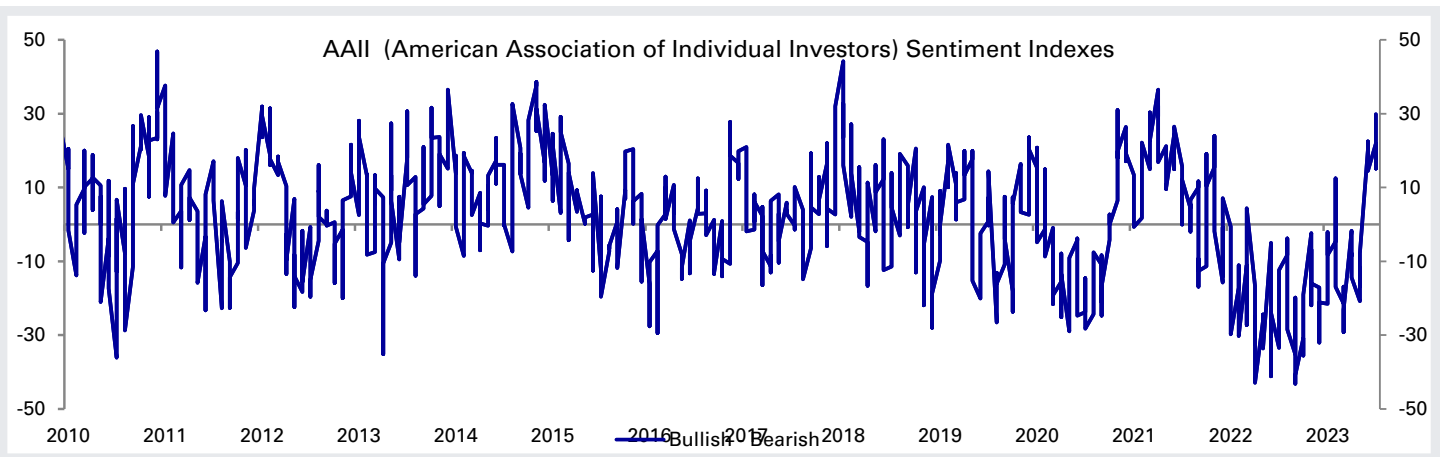
Source: IBES, Haver, DWS Investment GmbH as of 8/19/2022. Past performance may not be indicative of future results.

PE / VIX



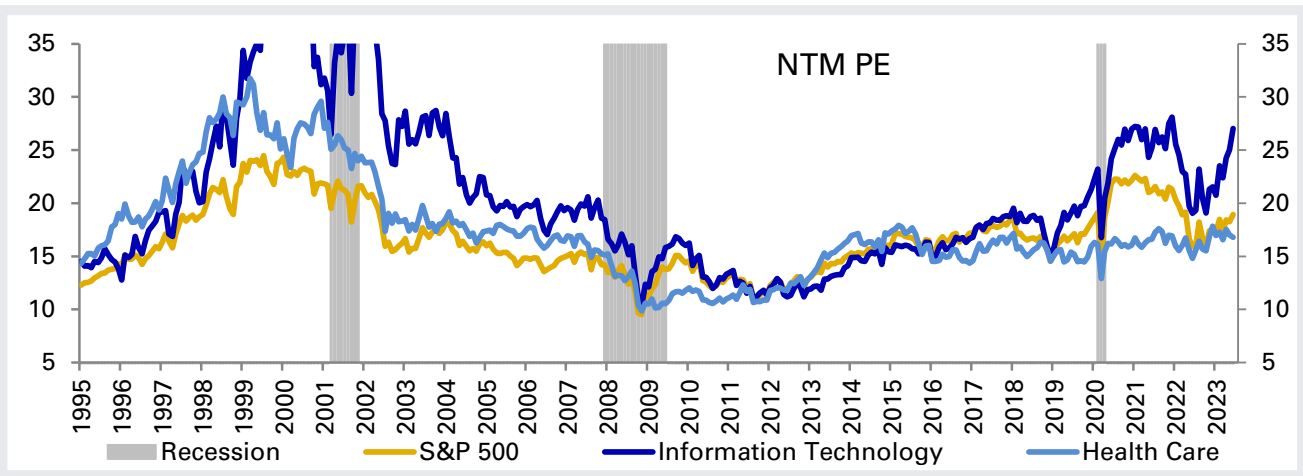
Source: Haver, Factset, DWS Investment GmbH as of 6/30/2023. Past performance may not be indicative of future results.

American Association of Individual Investors' sentiment indexes



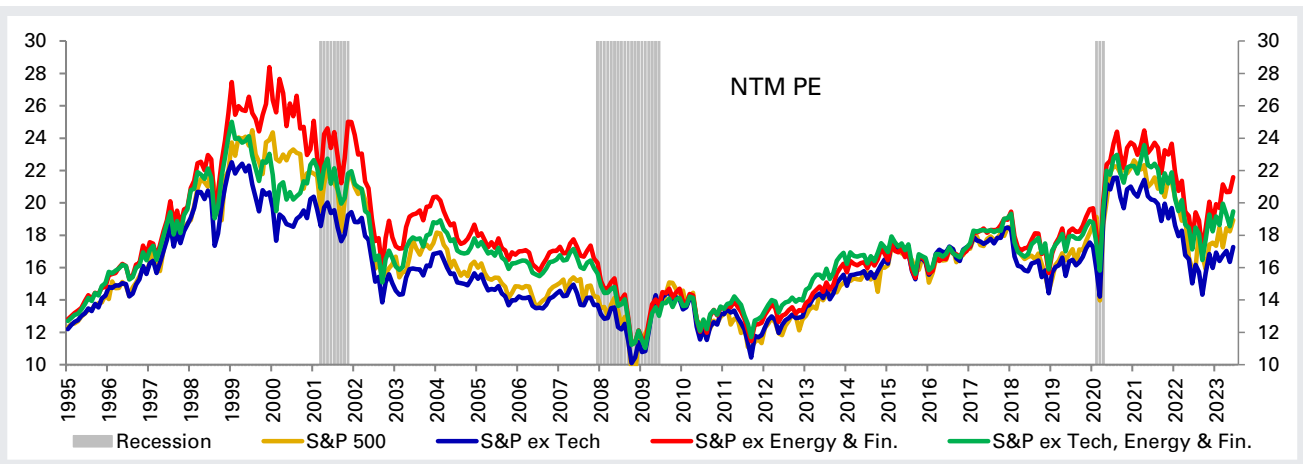
Source: Barron's, Haver, DWS Investment GmbH as of 6/30/2023. Past performance may not be indicative of future results.

S&P 500, Tech and Health Care forward PE



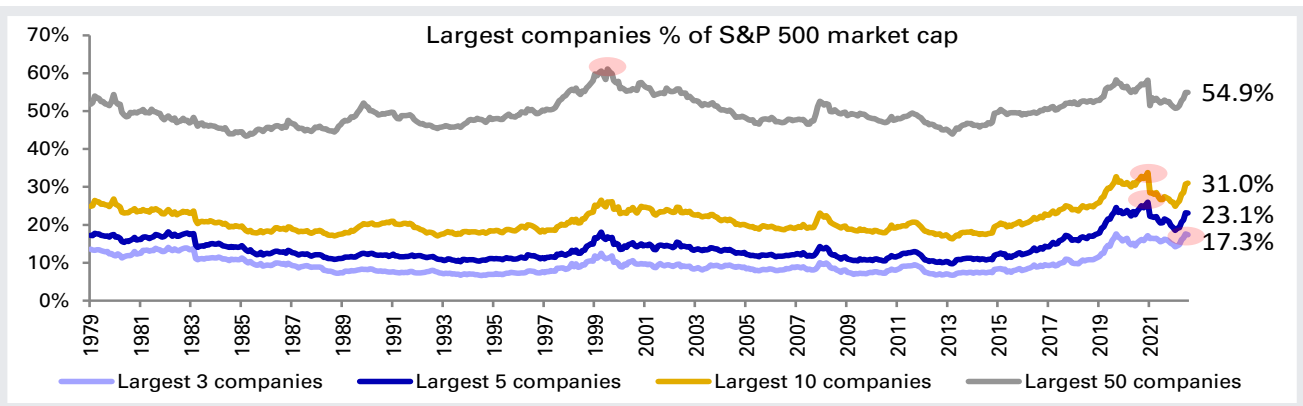
Source: Factset, DWS Investment GmbH as of 6/30/2023. Past performance may not be indicative of future results.

S&P 500 ex Tech Energy & Financials forward PE



Source: Factset, DWS Investment GmbH as of 6/30/2023. Past performance may not be indicative of future results.

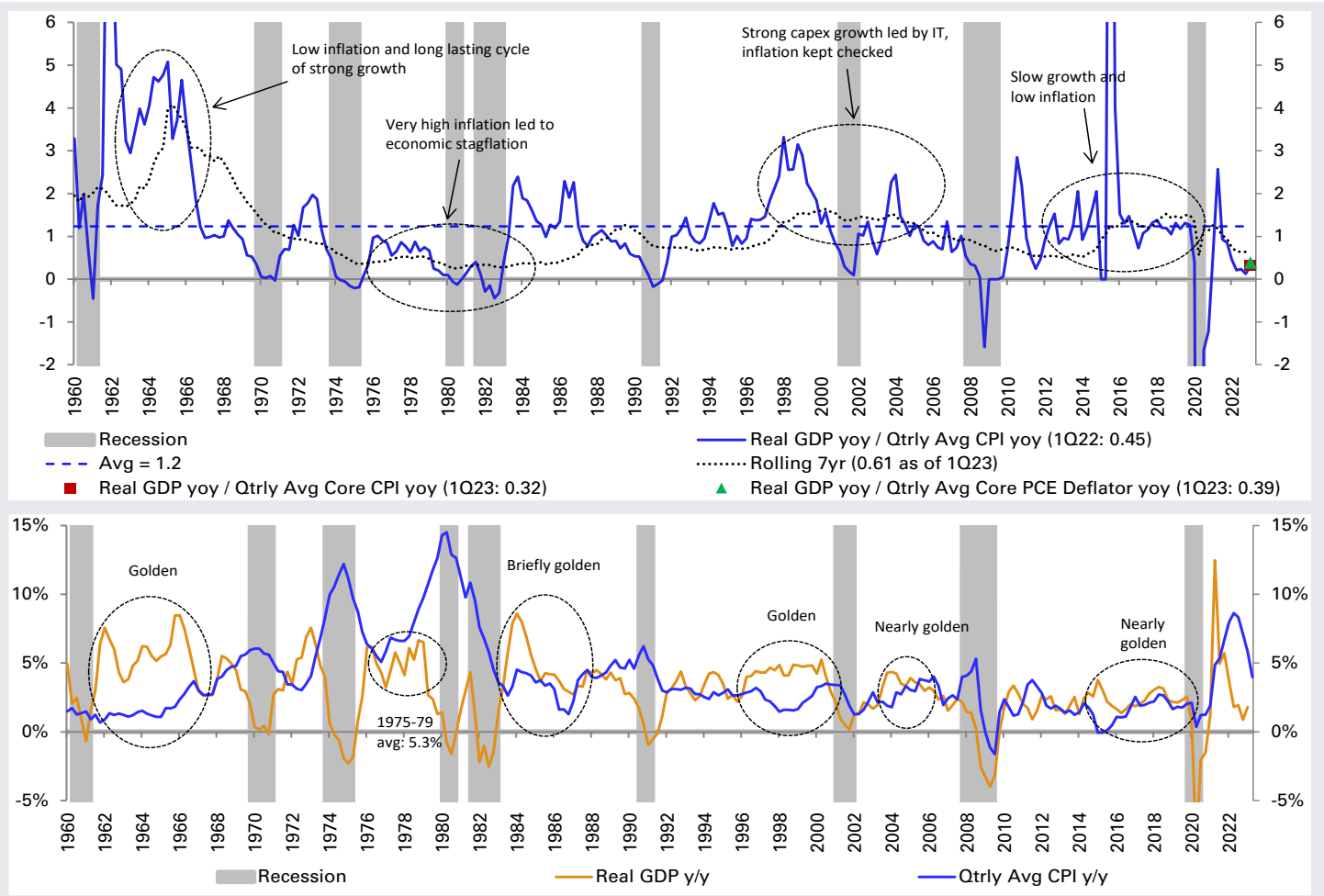
Largest 3, 5, 10, 50 companies % of S&P 500 market cap



Source: Compustat, Clarifi, DWS Investment GmbH as of 6/30/2023. Past performance may not be indicative of future results.

Long cycles of moderate growth, low inflation and low or zero real interest rates help justify economic profit growth PE premiums.

The golden ratio: GDP / CPI



Source: Haver, Factset, DWS Investment GmbH as of July 2023. Past performance may not be indicative of future results.

S&P 500 industry monitor (1 of 2)

Sector	Industry	PE on 2022	PE on 2023	2023	2024	2023 EPS	3m Total	2023 End	Combined
		EPS	Consensus EPS	Consensus EPS Growth	Consensus EPS Growth	3m Revision	Return Momentum	Upside (Intrinsic Valuation)	
Consumer Discretionary		36.7	25.7	21.0%	17.8%	4.3%	22.1%	-16.0%	1
	Automobile Components	23.1	14.3	27.4%	26.7%	-4.3%	5.0%	29.9%	0
	Automobiles	34.5	31.0	1.5%	9.6%	7.8%	68.2%	-15.2%	1
	Household Durables	9.0	10.9	-22.0%	6.0%	15.0%	15.7%	-4.0%	1
	Leisure Products	14.9	12.8	2.5%	13.3%	1.8%	27.3%	-13.3%	0
	Textiles Apparel & Luxury Goods	24.8	21.5	0.1%	15.4%	-3.2%	-10.0%	-25.8%	-1
	Hotels Restaurants & Leisure	89.3	21.6	235.7%	23.2%	7.0%	7.5%	-8.0%	1
	Distributors	18.3	16.8	-0.3%	9.2%	-0.8%	3.7%	-2.1%	0
	Broadline Retail	118.4	48.2	59.0%	54.4%	10.1%	29.5%	-32.9%	1
	Specialty Retail	20.1	18.9	-1.4%	7.9%	-2.8%	5.5%	-4.9%	0
Consumer Staples		21.6	19.2	3.4%	8.7%	-1.2%	-0.6%	-8.8%	0
	Consumer Staples Distribution & Retail	23.3	20.4	3.7%	10.3%	-3.1%	0.1%	-4.3%	-1
	Food Products	16.2	16.3	-6.2%	6.1%	-2.4%	-3.0%	-0.1%	-1
	Beverages	26.7	22.3	10.0%	8.6%	2.0%	1.0%	-10.0%	0
	Tobacco	13.3	11.8	4.9%	7.3%	-1.6%	2.5%	5.5%	0
	Household Products	26.7	22.5	8.5%	9.4%	1.3%	-0.2%	-23.7%	0
	Personal Care Products	28.5	31.8	-35.8%	39.8%	-29.9%	-25.9%	-20.5%	-1
Energy		8.8	11.1	-21.9%	1.5%	-8.7%	-3.1%	8.3%	-1
	Energy Equipment & Services	29.7	14.4	68.8%	22.0%	0.5%	12.1%	36.2%	1
	Oil Gas & Consumable Fuels	8.2	10.8	-24.6%	0.2%	-9.3%	-4.4%	5.8%	-1
Financials		15.7	13.4	7.4%	9.1%	-1.5%	5.9%	1.7%	0
	Banks	10.2	9.6	9.9%	-3.4%	0.8%	8.1%	29.2%	0
	Financial Services	25.6	19.8	13.2%	14.2%	0.5%	5.3%	-7.9%	0
	Consumer Finance	9.7	10.7	-18.1%	11.2%	-4.9%	13.8%	11.6%	-1
	Capital Markets	18.0	15.5	-1.2%	17.6%	-5.2%	7.2%	-19.8%	0
	Insurance	16.3	11.5	15.3%	23.0%	-4.0%	0.3%	9.8%	-1
Health Care		16.2	16.5	-13.0%	12.9%	-3.9%	-0.1%	5.4%	-1
	Health Care Providers & Services	16.4	13.8	7.2%	10.4%	-0.3%	4.9%	15.2%	0
	Health Care Equipment & Supplies	28.0	25.1	1.4%	9.7%	0.6%	2.6%	-3.9%	0
	Life Sciences Tools & Services	24.1	22.9	-6.7%	12.8%	-2.6%	-4.0%	-11.9%	-1
	Biotechnology	11.6	14.9	-24.7%	3.6%	-1.2%	-7.7%	18.0%	-1
	Pharmaceuticals	13.0	14.2	-24.8%	21.5%	-10.3%	0.1%	11.3%	-1
Industrials		24.8	18.0	21.4%	13.2%	2.2%	8.9%	-7.3%	1
	Aerospace & Defense	45.0	19.3	82.8%	27.3%	-1.4%	-2.8%	-4.1%	-1
	Building Products	23.6	18.6	14.9%	10.3%	1.6%	17.6%	-9.1%	1
	Trading Companies & Distributors	22.3	16.8	23.5%	7.4%	0.0%	14.1%	12.3%	1
	Electrical Equipment	25.0	22.1	2.3%	10.8%	2.8%	20.7%	-7.4%	1
	Construction & Engineering	32.1	24.1	13.6%	17.2%	-0.1%	19.6%	-23.6%	1
	Industrial Conglomerates	22.3	19.1	-6.9%	25.2%	1.4%	5.9%	-17.7%	0

Combined signal rules: Green – at least 2 of the following 3 must be green: EPS growth, EPS revision, price momentum

Red – at least 2 of the following 3 must be red: EPS growth, EPS revision, price momentum

Source: Factset, DWS Investment GmbH as of 7/19/2023. Past performance may not be indicative of future results.

S&P 500 industry monitor (2 of 2)

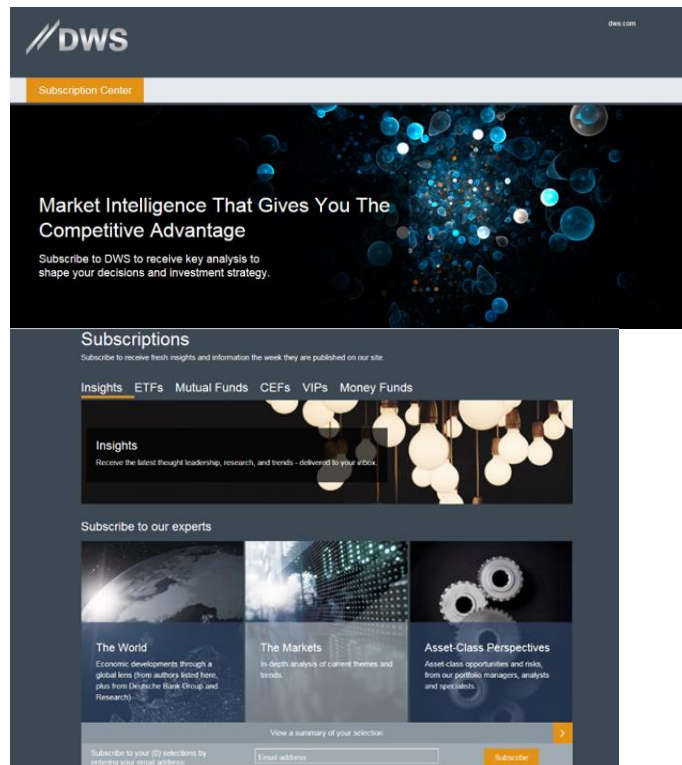
Sector	Industry	PE on 2022	PE on 2023	2023	2024	2023 EPS	3m Total	2023 End	Combined
		EPS	Consensus	Consensus	Consensus	3m	Return	Upside	
			EPS	EPS Growth	EPS Growth	Revision	Momentum	(Intrinsic Valuation)	Signal
	Machinery	21.5	16.6	24.7%	3.5%	6.6%	14.4%	3.3%	1
	Commercial Services & Supplies	35.8	28.6	12.2%	11.4%	1.8%	8.2%	-37.9%	0
	Professional Services	29.8	24.3	8.9%	12.9%	-0.3%	12.9%	-32.2%	1
	Air Freight & Logistics	14.1	15.6	-19.5%	12.7%	-5.1%	2.0%	-13.2%	-1
	Passenger Airlines	32.4	6.5	329.9%	16.1%	16.0%	28.8%	62.6%	1
	Ground Transportation	19.5	18.2	-1.7%	9.4%	-1.5%	9.3%	4.5%	0
Information Technology		30.5	26.2	-0.5%	16.7%	2.2%	23.5%	-17.1%	1
	IT Services	21.1	18.7	4.7%	8.2%	-0.7%	12.2%	-1.2%	0
	Software	39.4	29.8	15.4%	14.8%	2.6%	23.5%	-16.4%	1
	Communications Equipment	18.4	14.6	17.6%	6.8%	1.2%	11.0%	16.3%	0
	Technology Hardware Storage & Peripherals	29.5	27.5	-3.8%	11.5%	-0.5%	17.2%	-18.6%	0
	Electronic Equipment Instruments & Components	21.2	19.2	-2.1%	12.6%	-2.3%	9.6%	-17.8%	0
	Semiconductors & Semiconductor Equipment	27.6	25.4	-16.7%	30.1%	6.5%	36.3%	-21.6%	1
Materials		14.3	17.4	-22.2%	5.5%	-2.4%	3.1%	-3.4%	-1
	Chemicals	16.3	17.6	-17.2%	11.8%	-3.9%	2.9%	-3.8%	-1
	Construction Materials	39.0	26.1	26.8%	17.9%	10.0%	28.1%	-40.4%	1
	Metals & Mining	8.6	15.9	-35.9%	-15.2%	4.5%	-0.4%	7.0%	-1
	Containers & Packaging	11.7	14.8	-25.5%	6.7%	-10.2%	-2.4%	1.7%	-1
Real Estate		29.9	34.8	-20.8%	8.7%	2.4%	5.6%	4.5%	0
	Industrial REITs	28.2	43.5	-36.2%	1.6%	-0.1%	0.3%	-15.4%	-1
	Hotel & Resort REITs	15.6	16.7	-0.3%	-6.3%	37.4%	10.7%	68.4%	0
	Office REITs	20.8	30.1	-34.2%	5.0%	2.6%	5.1%	23.0%	0
	Health Care REITs	100.1	74.1	-6.2%	44.2%	46.3%	6.8%	2.4%	0
	Residential REITs	30.9	43.4	-30.7%	2.5%	3.0%	9.2%	1.6%	0
	Retail REITs	30.6	28.1	7.9%	1.1%	3.5%	7.4%	17.8%	0
	Specialized REITs	28.7	33.0	-21.9%	11.5%	-1.1%	2.3%	3.4%	0
	Real Estate Management & Development	26.9	27.0	-18.5%	22.1%	2.2%	28.4%	28.0%	1
Communication Services		19.7	16.5	1.5%	18.0%	3.2%	17.0%	-2.2%	1
	Diversified Telecommunication Services	5.8	6.6	-13.7%	1.2%	-0.2%	-10.9%	1.6%	-1
	Wireless Telecommunication Services	79.1	14.1	311.8%	35.8%	2.8%	-5.7%	11.8%	1
	Media	12.4	11.0	-1.4%	14.5%	-1.3%	9.8%	-4.5%	0
	Entertainment	32.1	22.8	-3.5%	45.8%	-10.1%	12.9%	-2.0%	0
	Interactive Media & Services	26.0	20.1	7.5%	20.1%	9.1%	25.3%	0.5%	1
Utilities		18.9	16.5	5.5%	8.4%	0.2%	-3.8%	2.0%	0
	Multi-Utilities	17.8	16.6	1.9%	5.3%	-0.8%	-4.2%	-3.8%	0
	Water Utilities	33.6	28.1	11.3%	7.3%	0.3%	-3.3%	-24.0%	0
	Gas Utilities	21.4	18.5	8.4%	6.7%	0.3%	5.3%	-6.5%	0
	Electric Utilities	19.1	16.3	6.9%	9.8%	0.6%	-3.8%	8.9%	0
	Independent Power and Renewable Electricity Producers	13.6	11.5	5.2%	11.8%	-0.3%	-6.7%	2.4%	0
S&P 500		21.0	18.9	-1.0%	12.3%	-0.5%	11.0%	-6.7%	0

Source: Factset, DWS Investment GmbH as of 7/20/2023. Past performance may not be indicative of future results.
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