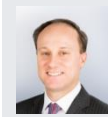


Further tightening required: Fed Funds rate exceeding 5% raises many risks



David Bianco
Americas Chief Investment Officer
DWS

DWS CIO Day: Higher Fed Funds rate, 4100 S&P target pushed to March 2024
The main theme of our CIO day was sticky inflation will force more hikes from central banks. This suggests a delayed but perhaps worse than slight recession. Our economists forecast 3.9% and 5.7% inflation for US and Europe in 2023. The Fed Funds rate is expected to peak at near 5.5% in June. The ECB policy rate to peak at 4%. Both terminal rates likely come with long holds through 2023. We raised our 10yr Treasury yield 12-month forecast from 4.2% to 4.3%; which includes an expectation of a ~2.50% 10yr breakeven inflation rate and ~1.75% 10yr TIPS yield. Long-term yields remain very uncertain for 2024, higher is possible, but if Fed hikes subdue inflation soon they could be well lower than our forecasts. DWS raises 12-month Euro target to \$1.10 from \$1.05 and keeps \$100/bbl oil.

We pushed our 4100 S&P 500 target to March 2024, but slightly boosted most European equity index targets with the 3-month roll forward in time. We see high near-term 10% plus correction risk for the S&P 500 as it would be uncommon for it to find bottom while the Fed is hiking above neutral rates with S&P EPS stalled or declining and the current PE still quite high. We estimate the fair value range for the S&P 500 for the rest of 2023 is 3700-4000.

Markets too quickly dismissed sticky inflation risk, taming inflation won't be easy
Stocks rallied strongly in January into February as 2yr Treasury yields fell from their 5% autumn highs on a sanguine consensus view of steadily declining inflation that would allow the Fed to cut by 2023 end without a recession. We cautioned repetitively against such premature optimism. Since early February (until SVB), all Tsy yields climbed as all macro reports YTD and 4Q22 revisions show inflation still running too hot at the core; despite disinflation at goods, which is being driven by a goods demand/ mfg. recession in progress. A very tight labor market that is upset about purchasing power of pay, but also struggling to boost its productivity, suggests that unit labor costs could get stuck well above the Fed's inflation target this year and next. Unfortunately, time is running out for the Fed to afford to be patient with inflation. Yields are creeping upward and the bond market is losing patience with high interest rate uncertainty/ volatility. This puts Fed in a tough spot of having to fight harder and take more hard landing risk. Also, Chair Powell's Senate testimony last week reminded us that the longer it takes to tame inflation, the more politically difficult it will get.

Some risks might emerge very soon: Silicon Valley Bank fails on a deposit run
As 3-24 month Treasury bills and notes exceed 5%, it not only raises alternatives to equities but also for bank deposits, as most still yield lower and are unlikely to go quite that high. Thus, competition among banks for saver deposits will intensify. In this fight, smaller banks are disadvantaged. They offering less services and sometimes less safety is perceived and moreover they lack the excess of deposits and reserves as at the giant banks. The risks will obviously be greater for banks that mismanage their duration risk or have lower quality "flighty" deposit bases. Of course, some banks are more exposed to the more challenged parts of the economy like commercial real estate or less capital available for unprofitable early-stage enterprises. All considered, we think it important the Fed considers how to keep fighting inflation while helping to protect smaller regional and community banks. We'd be more reassured if the Fed didn't hike the Discount rate upon further Fed Funds rate hikes.

S&P 4Q22 EPS fell a bit short of low expectations, 2023 EPS still drifting down
S&P 4Q EPS finished at \$53.30 vs. \$53.85 consensus earnings season start and our long standing \$54 estimate. Some headline 4Q S&P EPS surprise figures are slightly positive, but only from analysts cutting 1-3 days before reporting for many companies. 2023 analyst consensus EPS still drifting down. It's \$224 now vs. \$230 at year start and \$251 last June. 1Q & 2Q 2023 consensus S&P EPS has been cut most to \$50.94 and \$54.57, -7.1% and -5.2% y/y. Consensus expects 2.5% y/y growth in 3Q and now 10% EPS y/y growth in 4Q, but this has significant downside risk. Profit margins in most developed markets still at risk.

S&P EPS quality deteriorating, quality metrics suggest unsustainable cash flow
Aside from stalled S&P EPS growth, another concern is deteriorating S&P earnings quality. The GAAP to non-GAAP EPS ratio averages 86% out of recessions, usually above 90% for healthy mid-cycle quarters. However, it fell toward 78% 2022 and 73% in 4Q, borderline levels only seen during recessions. Another metric we monitor is: (Net income + D&A) / (CFO – Stock Option Expense). Free Cash Flow vs. Net Income is more an indication of investment activity than earnings quality. But comparing Cash Flow from Operations (CFO) to Net Income + Depreciation & Amortization (D&A) over several years helps reveal reported earnings quality. This measure is at a two-decade high for non-GAAP based EPS or 15% higher than usual, and 10% higher than usual GAAP based, suggesting earnings overstate true profitability and steady-state free cash flow. See exhibits inside.

Contributor: Ju Wang, Portfolio Manager Equity

Global Equity Index Forecasts: 12-months			
Index	Mar 2024F	NTM EPS Growth	Target PE
S&P 500	4,100	1.3%	18.1
EuroStoxx 50	4,350	0.1%	13.1
Stoxx 600	480	1.7%	13.6
MSCI Japan	1,250	3.2%	13.3
MSCI Asia xJ	670	3.2%	14.1
MSCI EM	1,020	-0.5%	12.5

S&P 500 Outlook at Yearend			
	2021	2022F	2023F
S&P 500	4766	3800	4000
Dividend Yield	1.3%	1.75%	1.75%
S&P EPS	\$210	\$222	\$222
Trailing PE	22.7	17.1	18.2
DPS	\$61	\$68	\$70

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%	36.5%
Equities	55-60%	54.0%
US Equities	40%	35.0%
S&P 500	35%	32.0%
Small Caps	0-10%	3.0%
Foreign DM	10-15%	11.5%
Foreign EM	0-10%	7.5%
Alternatives	10%	9.5%

Key CIO Views		
Macro signal:	Mar 2023	Mar 2024F
U.S. Fed Funds rate	4.50%-4.75%	5.25%-5.50%
10yr Treasury yield	4.00%	4.30%
US IG Corp Spreads	165bp	110bp
US High Yield Spreads	465bp	450bp
Crude Oil (WTI) \$/bbl	77	100
EUR / USD FX rate	1.06	1.10

GDP Forecasts			
Region	2022	2023F	2024F
US	2.0%	0.7%	1.1%
World	3.4%	2.7%	3.1%
Euro area	3.5%	0.8%	1.1%
China	3.0%	5.5%	5.3%
Japan	1.1%	1.0%	0.8%

* 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 3/13/2023 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.

12-month assumptions for DWS equity index targets:

1. Geopolitics: no further escalation of Russia's war nor China-Taiwan conflict
2. Economy/yields: stagflation in EU and US – further ECB and FED hikes; no Fed cuts in 2023; US 10yr yields below 4.5%; consumption driven Chinese re-opening
3. Earnings growth: Globally flat earnings in 2023 with falling margins, mid-term 5% EPS growth in EU and US; in EM potentially 10% growth for 2024
4. US valuation: Assuming US 10yr yields staying around 4% and falling VIX to 15 is supporting a fair trailing PE of 18x for S&P 500
5. European valuation: disappointing US Tech earnings and solid pan-European bank results should help shrink the discount further; peace talks in Ukraine further upside potential
6. EM: China rapid re-opening should feed consumption driven growth that supports earnings and inflows from foreign investors

DWS September 2023 equity index targets

March 2024 equity index targets base case



Only little upside due to weak EPS growth and high yields (TAPAs*)

Tactically: ex-US market discount remains too extreme

Index	3M relative View	Current Level	Previous Target CIO Day Dec	Target Mar 24	Chg in Target	Expected Total Return Mar 24	thereof			Assumptions				
							EPS growth NTM*	LTM multiple impact	Dividend Yield	EPS NTM* (e)	DWS vs. Cons.	Target LTM P/E in	Target PE discount to US	
S&P 500		4,048	4,100	4,100	0%	3.0%	USD	1.3%	0%	1.7%	226	-1.8%	18.1x	
Stoxx 600		465	445	480	8%	6.5%	EUR	1.7%	2%	3.4%	35.4	-1.9%	13.6x	-25%
EuroStoxx 50		4,319	4,000	4,350	9%	4.0%	EUR	0.1%	0%	3.3%	333	-2.3%	13.1x	-28%
DAX40		15,705	15,000	16,300	9%	3.8%	EUR	1.4%	-1%	3.2%	1275	-0.4%	12.8x	-30%
SMI		11,172	11,150	11,100	0%	2.6%	CHF	20.3%	-18%	3.2%	691	-2.3%	16.0x	-12%
FTSE 100		7,944	7,600	8,100	7%	6.0%	GBP	-0.8%	3%	4.0%		-4.1%	11.3x	-38%
MSCI EM		992	990	1,020	3%	6.0%	USD	-0.5%	3%	3.1%	81.2	-1.7%	12.5x	-31%
MSCI AC Asia xJ		642	625	670	7%	6.9%	USD	3.2%	1%	2.6%	47.6	-2.9%	14.1x	-22%
MSCI Japan		1,245	1,250	1,250	0%	2.9%	YEN	3.2%	-4%	2.5%	92.4	-1.7%	13.3x	-27%
MSCI Australia		1,465	1,450	1,450	0%	3.3%	AUD	-3.6%	2%	4.3%	96.3	-2.8%	15.0x	-18%



DWS Strategic CIO View: Overview of strategic forecasts – Fixed Income, FX, Equity & Commodities

Overview of Strategic 12-Month Forecasts

Fixed Income

	Market Index	Strategic Forecast Nov-22	Current level	12m forwards	Strategic Forecast Mar-23	Forecast change	Expected 12m Total Return	Expected 10yr Total Return (p.a.) ⁴
		Target Dec-23	6-Mar-23	6-Mar-23	Target Mar-24			
Forecasts - US								
UST 2yr	US 2y yield	4.10%	4.88%	4.43%	4.40%	↔	5.30%	3.98%
UST 10yr	US 10y yield	4.20%	3.96%	3.87%	4.30%	↔	1.77%	4.67%
UST 30yr	US 30y yield	4.35%	3.89%	3.80%	4.40%	↔	-4.51%	4.85%
Municipals	Muni HY Index OAS	2.50%	2.36%		2.45%	↘	5.84%	3.36%
US IG Corp	BarCap US Credit	130 bp	112 bp		110 bp	↘	2.15%	4.96%
US HY ¹	Barclays US HY	500 bp	397 bp		450 bp	↘	5.51%	6.81%
Securitized / MBS	MBS Index OAS	40 bp	36 bp		35 bp	↘	3.09%	4.34%
Forecasts - Europe								
Schatz 2yr	GER 2y yield	2.30%	3.31%	3.04%	3.20%	↔	3.41%	2.60%
Bund 10yr	GER 10y yield	2.40%	2.73%	2.69%	2.90%	↔	1.92%	2.15%
Bund 30yr	GER 30y yield	2.40%	2.65%	2.62%	2.90%	↔	-2.31%	2.93%
Gilt 10yr	UK 10y yield	3.30%	3.86%	3.87%	3.60%	↔	6.15%	4.11%
EUR IG Corp	ICE BofA Bond Index	150 bp	145 bp		110 bp	↘	5.42%	3.98%
EUR HY ¹	M L EUR Non-Fin HY Constr. Index	550 bp	431 bp		420 bp	↘	5.89%	6.17%
Securitized / Covered	iBoxx Covered	90 bp	78 bp		70 bp	↘	3.78%	3.21%
Italy 10yr ³	GTITL10Y Corp - GTDEM 10Y Corp	240 bp	182 bp	200 bp	220 bp	↘	1.16%	n/a
Spain 10yr ³	GTESP10Y Corp - GTDEM 10Y Corp	110 bp	95 bp	111 bp	100 bp	↘	2.56%	n/a
Forecasts - AsiaPac								
JGB 2yr	JPN 2y yield	0.00%	-0.04%	0.01%	0.15%	↔	-0.18%	0.28%
JGB 10yr	JPN 10y yield	0.20%	0.5%	0.70%	0.75%	↔	-2.34%	0.63%
Asia Credit	JACI Index	380 bp	267 bp		250 bp	↘	7.13%	-
Forecasts - Global								
EUR vs USD	EUR/USD	1.05	1.07		1.10	↔	1.30%	-
USD vs JPY	USD/JPY	140	136		125	↘	-2.72%	-
EUR vs JPY	EUR/JPY	147	145		138	↘	-1.31%	-
EUR vs GBP	EUR/GBP	0.90	0.89		0.89	↘	-0.67%	-
GBP vs USD	GBP/USD	1.15	1.20		1.25	↔	3.14%	-
USD vs CNY	USD/CNY	7.35	6.9		6.95	↘	3.20%	-
EM Sovereign ¹	EMBIG Div.	500 bp	451 bp		470 bp	↘	3.49%	7.62%
EM Credit ¹	CEMBI Broad	425 bp	324 bp		350 bp	↘	4.08%	7.15%

Benchmark Rates

	Market Index	Strategic Forecast Nov-22	Current Level	Strategic Forecast Mar-23	Forecast change	Expected 12m Total Return	Expected 10yr Total Return (p.a.) ⁴
		Target Dec-23	6-Mar-23	Target Mar-24			
Forecasts - Benchmark rates							
United States	Federal funds rate	5.00-5.25	4.50-4.75	5.25-5.50	↔		
Eurozone	Deposit rate	3.00	2.50	4.00	↔		
United Kingdom	Repo rate	4.00	4.00	4.25	↔		
Japan	Overnight call rate	0.00	0.00	0.10	↔		
China	1year lending rate	3.65	3.65	3.65	→		

Equities

Forecasts - Equity							
	Market Index	Strategic Forecast Nov-22	Current Level	Strategic Forecast Mar-23	Forecast change	Expected 12m Total Return	Expected 10yr Total Return (p.a.) ⁴
US	S&P 500	4,100	4,067	4,100	→	2.57%	7.00%
Germany	DAX	15,000	15,654	16,300	↔	4.13%	7.22%
Eurozone	Eurostoxx 50	4,000	4,314	4,350	↔	4.22%	6.37%
Europe	Stoxx 600	445	464	480	↔	6.85%	6.59%
Japan	MSCI Japan	1,250	1,229	1,250	→	4.28%	4.71%
SMI	SMI	11,150	11,147	11,100	↘	2.83%	6.83%
UK	FTSE 100	7,600	7,930	8,100	↔	6.20%	7.46%
Emerging Markets	MSCI EM	990	988	1,020	↔	6.41%	8.27%
Asia ex Japan	MSCI AC Asia ex Japan	625	641	670	↔	7.22%	8.19%
Australia	MSCI Australia	1,450	1,448	1,450	→	4.53%	8.77%

Alternatives

Forecasts - Commodities							
	Market Index	Strategic Forecast Nov-22	Current Level	Strategic Forecast Mar-23	Forecast change	Expected 12m Total Return	Expected 10yr Total Return (p.a.) ⁴
Gold	Gold Spot	1,850	1,850	1,940	↔	4.84%	19.7%
Oil - Spot ²	Brent Spot	100	86	100	↔	-	n/a
Oil - Futures ²	Brent 12m Futures	-	80	-	-	24.67%	6.00%
Carbon	Carbon 12m Futures	85	90	85	→	-11.46%	n/a
Real Estate & Infrastructure							
Listed US RE						4.00%	6.21%
Non-Listed US RE						-5.00%	3.81%
Listed Global RE						4.00%	5.33%
Non-Listed Global RE						-1.00%	n/a
Listed Infrastructure						5.00%	6.78%

¹US HY default rate: 3.5%, 40% recovery, CCC average price of 80 used (instead of par); EUR HY default rate: 3.0%, 40% recovery; EM Sov default rate 6%, 50% recovery; EM Credit default rate 6%, 35% recovery // ²Oil-Futures used to calculate expected TR; forecasts are made on Brent-Spot // ³Total return. Excess return for Italy 10yr and Spain 10yr is 3.74% and 1.49%, respectively // ⁴LTCMA forecasts for Gold and Oil based on futures

DWS Global Macro Forecasts: High Inflation leads to slower growth

GDP Growth Rate

% year-on-year

	2022	2023F	2024F	Consensus 2023 (BBG)
World	3.4 (3.2)	2.7 (2.5)	3.1 (3.0)	2.1 (2.3)
U.S. *	2.0 (1.8)	0.7 (0.4)	1.1 (1.3)	0.6 (0.4)
EUZ	3.5	0.8 (0.3)	1.1	0.4 (-0.1)
GER	1.9	0.3 (0.0)	1.2	0.0 (-0.6)
UK	4.0	-0.5 (-0.6)	1.1	-0.7 (-0.6)
Japan	1.1	1.0 (1.2)	0.8	1.2 (1.4)
China	3.0 (3.3)	5.5 (5.0)	5.3	5.2 (4.8)

Inflation (CPI)

% year-on-year average

	2022	2023F	2024F	Consensus 2023 (BBG)
World				5.3 (4.8)
U.S.**	8.2 (8.0)	3.9 (4.1)	2.4	3.8 (4.0)
EUZ	8.4	5.7 (6.0)	2.7	5.6 (5.5)
GER	8.6	6.0	3.2	6.3 (6.2)
UK	9.1	6.4 (7.8)	2.5	6.8 (6.2)
Japan	2.5	2.5 (1.6)	1.7	2.1 (1.5)
China	2.0	2.5 (2.3)	2.5 (2.3)	2.4 (2.3)

Unemployment Rate (Annual average)

%

	2022	2023F	2024F	Consensus 2023 (BBG)
U.S. **	3.6 (3.8)	4.2	4.7	4.2 (4.25)
EUZ	6.7	6.7	6.7	6.9 (7.1)
GER	5.3	5.6	5.5	5.6
UK	3.7	4.2 (4.2)	4.1	4.3 (4.4)
Japan	2.6	2.5 (2.5)	2.4	2.5
China****	5.2 (5.5)	5.2 (5.0)	5.0	4.1 (3.9)

Fiscal Balance

% of GDP

	2022F	2023F	2024F	Consensus 2023 (BBG)
U.S***	-5.4	-4.3 (-4.0)	-4.5 (-4.0)	-4.5 (-4.0)
EUZ	-3.4	-3.6 (-3.4)	-2.9	-3.6
GER	-1.8	-2.6 (-2.4)	-1.9	-2.8 (-2.6)
UK	-6.8	-6.0 (-5.5)	-4.0	-5.4 (-6.7)
Japan	-7.0	-6.0 (-4.0)	-3.5	-5.0 (-4.5)
China*****	-8.9	-7.2	-6.5	-5.0 (-4.5)

Source: DWS Macro Research. (*) For the U.S., GDP growth Q4/Q4 % is -0.1% in 2023 and 1.8% in 2023, (**) Measure is CPI, other measures see US part of the presentation (***) Fiscal balance is federal deficit only. (****) Urban unemployment rate (end of period), not comparable to consensus data, (***** China fiscal deficit refers to 'augmented deficit' and is not comparable to consensus estimate. as of March 2023. to last data

S&P 500 Sector and Industry views

	Market	Allocated	Sector	2021	2022	2023	Overweight	2021	2022	2023	Equal weight	2021	2022	2023	Underweight	2021	2022	2023	
Over-weight	15.2%	19.7%	Health Care	16.3	15.4	16.5	Biotechnology Health Care Equipment & Supplies Pharmaceuticals	11.5 23.1 14.5	12.2 23.2 12.5	14.5 23.3 14.2	Health Care Providers & Services Life Sciences Tools & Services	16.7 24.0	15.6 25.6	15.0 25.6					
	8.0%	10.2%	Communication Services	14.2	16.4	15.7	Diversified Telecommunication Services Entertainment Interactive Media & Services Media	6.1 26.9 16.0 11.4	7.1 30.2 19.5 10.7	8.0 23.2 18.0 11.4	Wireless Telecommunication Services	59.3	57.1	25.9					
	11.2%	12.5%	Financials	11.8	14.1	13.2	Banks Insurance	8.6 14.9	10.6 17.4	10.0 13.8	Diversified Financial Services	26.6	21.4	20.3	Capital Markets Consumer Finance	13.9 7.6	17.5 9.4	17.4 10.3	
	2.6%	3.6%	Real Estate	18.9	17.4	17.1	Real Estate Mgmt. & Development REITs	15.6 19.4	13.9 17.6	15.5 17.1									
	5.3%	6.3%	Energy	20.9	8.2	9.6	Energy Equipment & Services	41.4	24.7	16.0	Oil Gas & Consumable Fuels	20.0	7.7	9.3					
	3.0%	3.5%	Utilities	19.2	18.8	17.7	Electric Utilities	20.8	19.8	18.2	Gas Utilities Independent Power & Renewable Energy Multi-Utilities	21.2 7.6 17.9	20.7 10.0 17.5	18.1 10.4 17.2	Water Utilities	34.5	31.2	29.3	
Under-weight	26.1%	25.7%	Information Technology	24.4	23.8	23.5	Communications Equipment IT Services	17.4 25.5	15.9 22.4	14.7 21.1	Electronic Equipment Software	21.8 30.5	20.7 28.1	20.2 26.3	Semiconductors Technology Hardware Storage & Peripherals	19.1 24.3	22.2 23.6	24.4 23.6	
	8.0%	7.5%	Industrials	27.3	21.3	20.0	Aerospace & Defense Airlines Electrical Equipment Industrial Conglomerates Road & Rail	33.9 -5.7 24.2 22.2 21.0	30.9 17.9 21.6 21.0 17.9	23.6 9.1 21.8 22.0 17.9					Air Freight & Logistics Building Products Commercial Services & Supplies Construction & Engineering Machinery Professional Services Trading Companies & Distributors	13.6 21.8 33.9 25.3 22.1 28.7 28.2	13.7 20.0 30.0 21.5 19.2 29.0 21.6	16.2 20.5 28.8 20.3 18.9 29.0 19.4	
	2.5%	0.0%	Materials	16.0	14.8	17.5									Chemicals Construction Materials Containers & Packaging Metals & Mining	17.9 31.9 13.7 10.3	16.1 30.6 12.5 10.6	17.6 30.6 14.2 16.9	
	6.9%	3.8%	Consumer Staples	21.5	20.9	20.6					Personal Products	35.9	38.6	38.6	Beverages Food Products Food & Staples Retailing Household Products Tobacco	26.3 18.2 23.6 23.6 13.4	24.9 16.9 22.0 24.5 13.4	23.9 17.3 21.5 23.9 13.4	
	11.3%	7.3%	Consumer Discretionary	26.8	26.0	24.7	Auto Components	26	21.8	18.2	Hotels Restaurants & Leisure Textiles Apparel & Luxury Goods	16062 26.2	76.8 27.9	28.6 27.1	Automobiles Distributors Household Durables Internet & Direct Marketing Retail Leisure Products Multiline Retail Specialty Retail	26.5 20.0 8.1 41.1 9.9 16.0 19.5	20.6 18.4 7.3 48.5 11.2 22.0 18.4	23.9 17.8 11.2 44.2 11.2 21.5 18.0	
			Automobiles	26.5	20.6	23.9													
Internet Retail			41.1	48.5	44.2														
		CD ex Auto &	22.9	22.6	20.4														
Aggregate PE: DWS View							Overweight	16.2	16.3	15.9	Equalweight	24.9	17.3	17.4	Underweight	20.0	20.3	21.2	
	S&P 500							3986			2020, 2021 & 2022 EPS	207.99	222.00	222.00	2020, 2021 & 2022 PE	19.2	18.0	18.0	
											Bottom-up Consensus EPS	206.88	222.12	224.14	Bottom-up Cons. PE	19.3	17.9	17.8	
															2020, 2021 & 2022 Ex Energy PE	19.1	19.1	18.8	
															Btm-up Cons. Ex Energy PE	19.0	19.1	18.5	

Sector OW	12.20%
Sector UW	-12.20%
Industry OW	22.67%
Industry UW	-22.67%

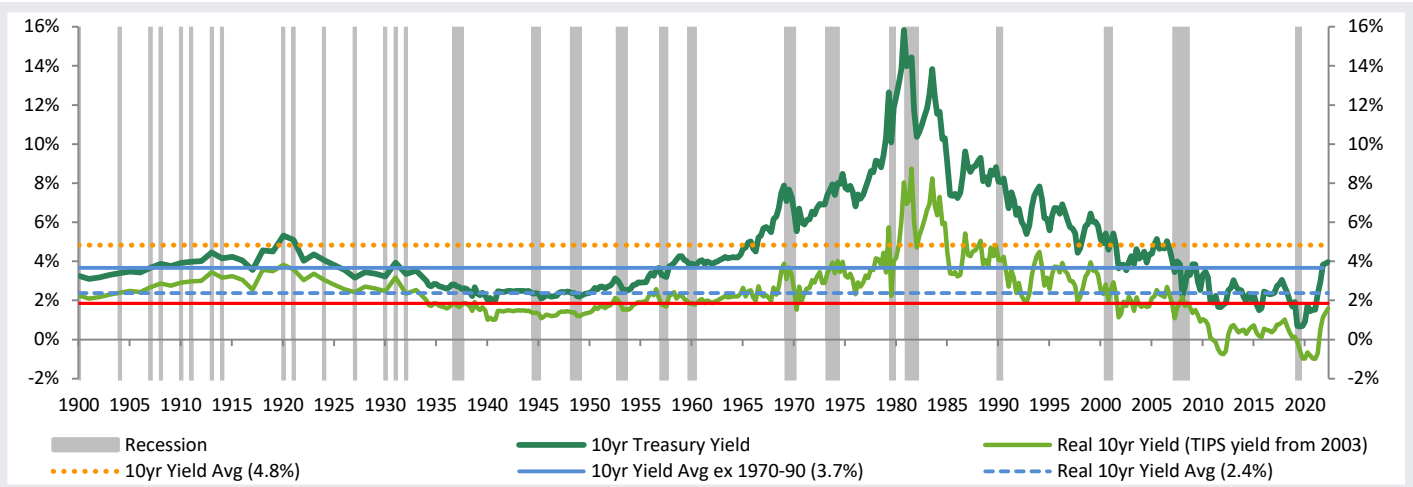
Macro tilts:	
Cyclicals	-3.01%
Defensive	3.12%
Value	-5.58%
Growth	5.58%
Consumer	-6.40%
Services/experience	0.13%
Disc. Goods	-0.50%
Retailing	-0.64%
Durables	0.16%
Staples Goods/Retail	-1.32%
Commodity	-1.46%
Energy	0.82%
Metals/Chemicals	-2.28%
Capex	3.43%
Capacity additions	0.42%
Productivity	3.01%
Health Care	4.34%
Innovation	2.46%
Marketers	1.49%
Insurers	0.26%
Financials	0.83%
Up rates/low spreads	2.35%
Capital Markets	-2.44%
Insurance	0.92%
Bond Substitutes	1.86%
Weak FX \$ plays	0.88%
High R&D plays	3.68%
Transports	-0.24%
Geopolitical risk	1.59%
Weak oil prices	-0.72%
Inflation shock	5.56%
Domestic GDP	-2.28%
Global GDP	-6.01%
Consumer TMT	0.90%
Trade sensitive	-3.11%

Note: More details on sector earnings forecast and sector intrinsic valuation can be found towards the back of this note.

Price as of 3/7/2023

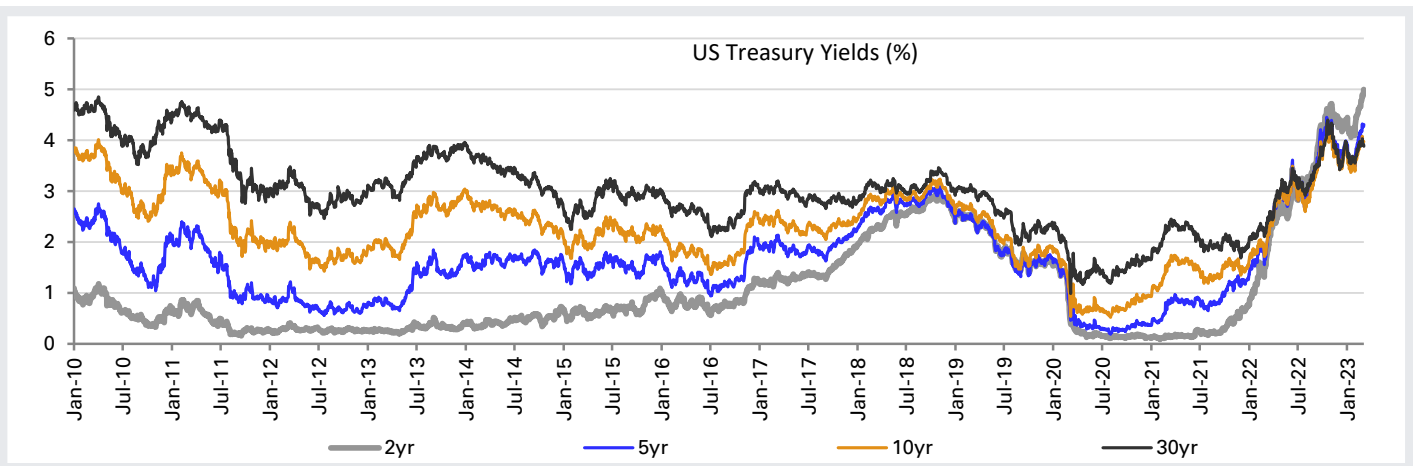
Source: DWS Investment Management GmbH

U.S. 10-year Treasury yields: nominal and real



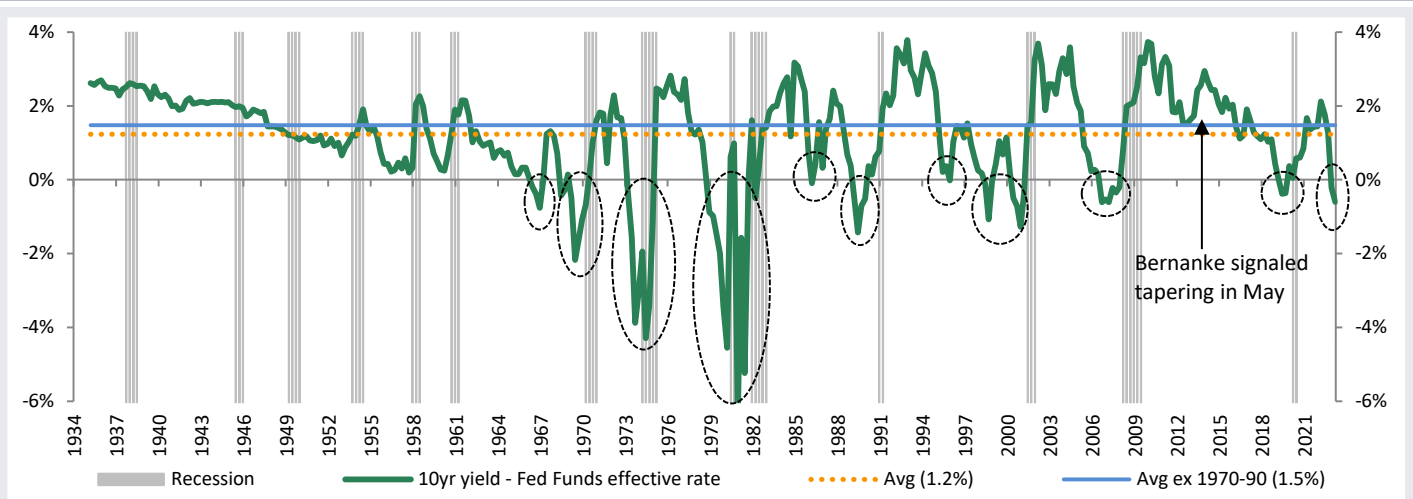
Source: Factset, IBES, DWS Investment GmbH as of 3/7/2023. Past performance may not be indicative of future results.

U.S. Treasury yields: 2, 5, 10, 30 year



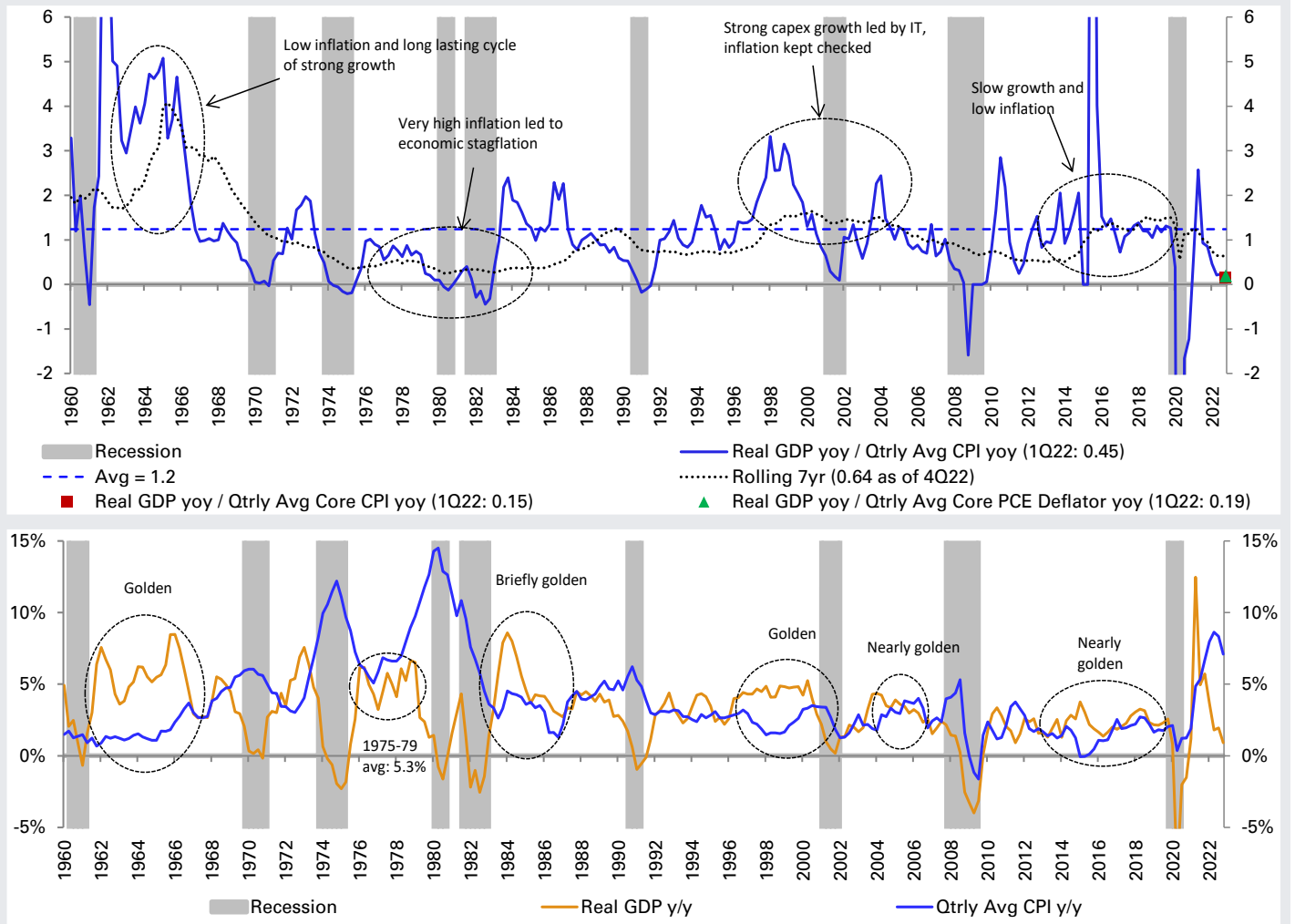
Source: Factset, IBES, DWS Investment GmbH as of 3/7/2023. Past performance may not be indicative of future results.

U.S. yield curve: 10yr Treasury yield – Fed Funds effective rate



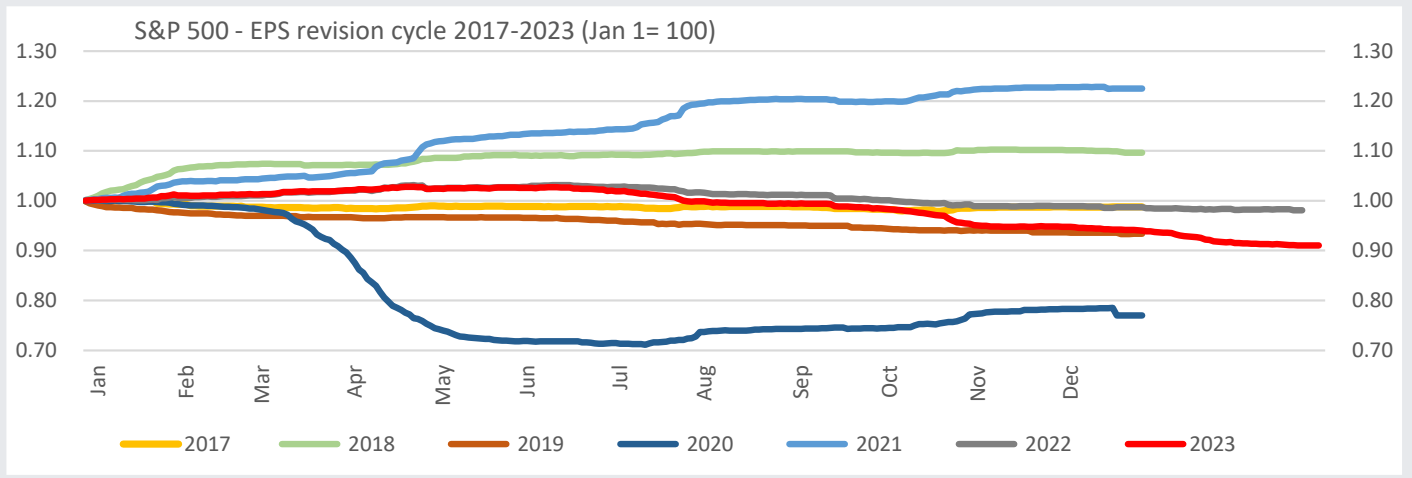
Source: Factset, IBES, DWS Investment GmbH as of 3/7/2023. Past performance may not be indicative of future results.

The golden ratio: Real GDP Growth / CPI



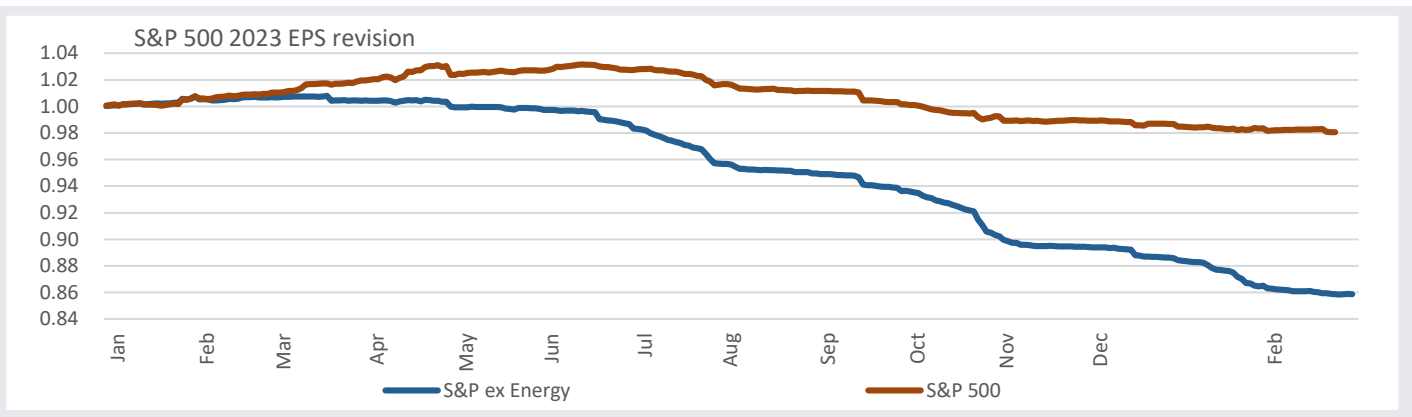
Source: Haver, DWS Investment GmbH as of 4Q2022. Past performance may not be indicative of future results.

S&P 500 annual EPS revision



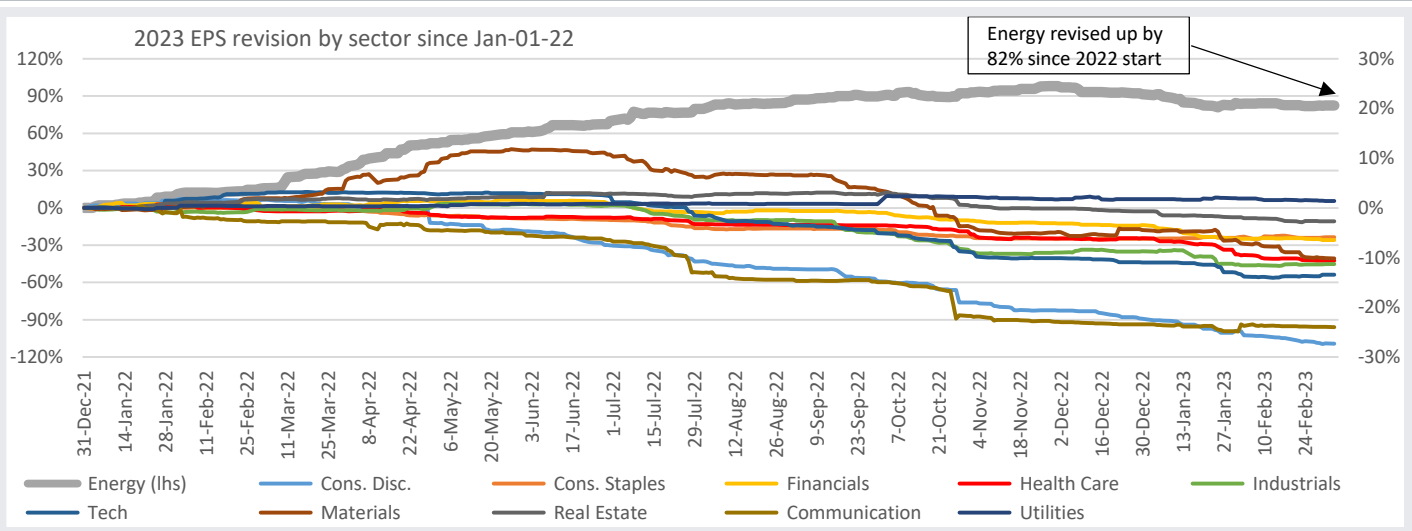
Source: Factset, IBES, DWS Investment GmbH as of 3/7/2023. Past performance may not be indicative of future results.

S&P 500 2023 EPS revision (ex. Energy)



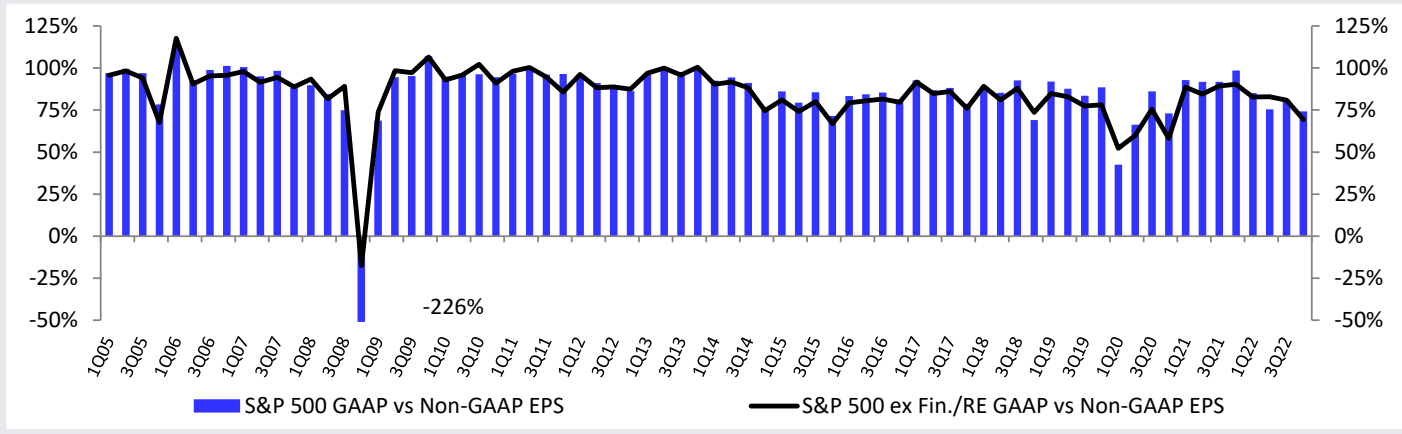
Source: Factset, IBES, DWS Investment GmbH as of 3/7/2023. Past performance may not be indicative of future results.

S&P 500 2022 EPS revision by sector



Source: Factset, IBES, DWS Investment GmbH as of 3/7/2023. Past performance may not be indicative of future results.

S&P 500 GAAP vs. non-GAAP EPS ratio (current S&P 500 constituents*)



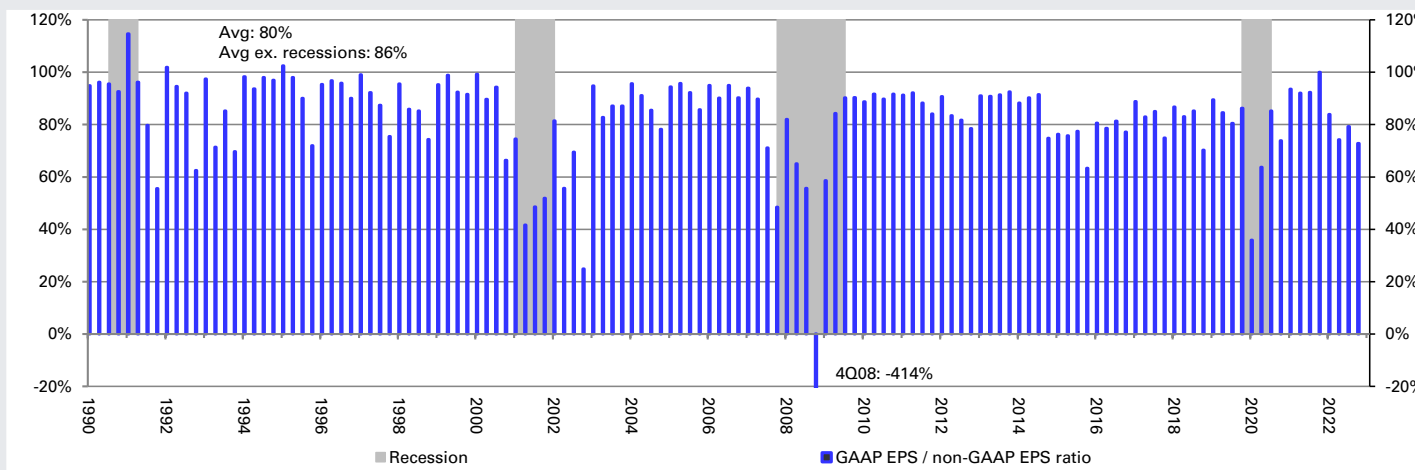
* S&P 500 EPS current constituents represents the earnings per share of index constituents as of the date the data was compiled 9/30/2022. Source: Haver, DWS Investment GmbH as of 4Q2022. Past performance may not be indicative of future results.

S&P 500 GAAP vs. non-GAAP EPS ratio by sector (current S&P 500 constituents*)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2011-2022 Avg
Cons Disc	96%	69%	82%	18%	99%	92%	127%	91%	95%	82%	95%	95%	97%	80%	92%	72%	101%	78%	92%
Staples	94%	99%	100%	97%	96%	105%	95%	96%	97%	86%	91%	102%	89%	83%	75%	82%	86%	80%	88%
Energy	104%	101%	101%	58%	88%	103%	102%	102%	100%	90%	-39%	-130%	63%	99%	50%	-2300%	94%	101%	-139%
Financials	109%	121%	104%	356%	57%	90%	109%	88%	95%	98%	101%	97%	97%	89%	119%	98%	119%	78%	99%
Health Care	84%	87%	74%	75%	101%	74%	78%	79%	89%	78%	74%	75%	75%	64%	73%	56%	76%	67%	74%
Industrials	51%	147%	102%	49%	93%	92%	91%	85%	99%	87%	92%	89%	98%	90%	89%	60%	101%	89%	89%
Tech	96%	94%	90%	69%	84%	93%	88%	89%	93%	86%	86%	82%	82%	88%	86%	85%	89%	79%	86%
Materials	98%	98%	75%	-67%	102%	129%	90%	86%	98%	75%	58%	68%	69%	72%	63%	69%	86%	82%	76%
Real Estate	74%	76%	92%	80%	93%	111%	92%	91%	88%	87%	79%	80%	80%	84%	91%	79%	86%	78%	85%
Telecom	107%	88%	82%	57%	137%	96%	-82%	-46%	101%	75%	89%	85%	85%	87%	80%	66%	94%	66%	58%
Utilities	80%	93%	97%	97%	87%	93%	93%	67%	80%	87%	65%	75%	97%	87%	100%	72%	74%	77%	81%
S&P 500	94%	104%	93%	50%	93%	93%	84%	79%	95%	86%	82%	85%	86%	84%	88%	68%	81%	92%	84%
S&P 500 ex. Energy	92%	104%	92%	48%	93%	92%	81%	76%	94%	86%	87%	87%	87%	83%	89%	76%	85%	92%	85%

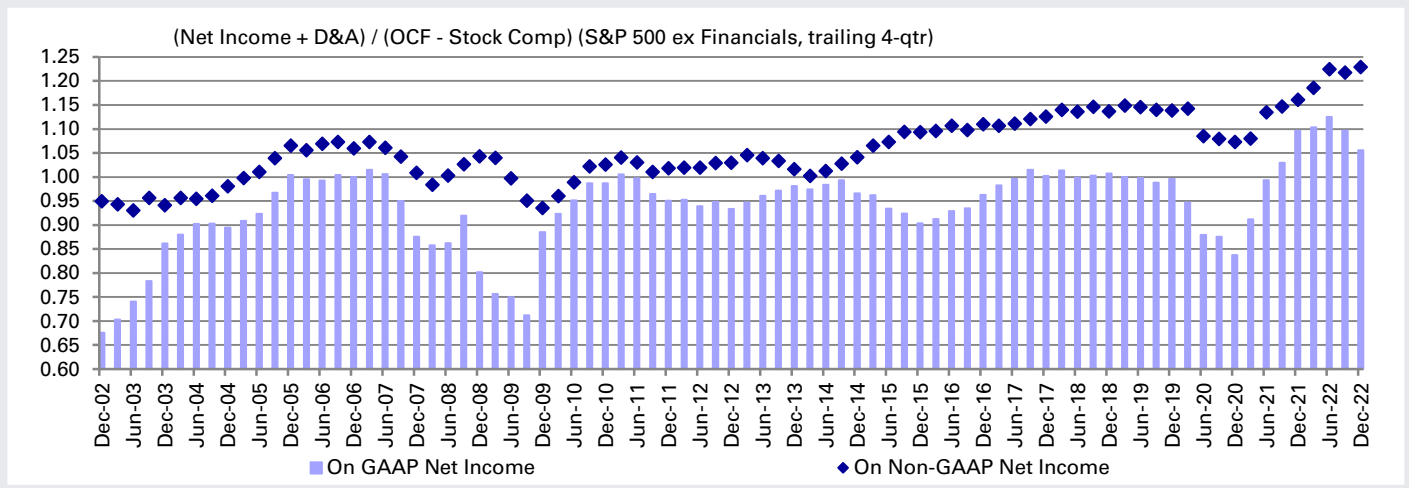
Source: Haver, DWS Investment GmbH as of 4Q2022. Past performance may not be indicative of future results.

S&P 500 GAAP vs. non-GAAP EPS ratio (historic S&P 500 constituents)



Source: Haver, DWS Investment GmbH as of 4Q2022. Past performance may not be indicative of future results.

(Net Income + Depreciation & Amortization) / (Operating Cash flow – Stock Compensation)



Source: Haver, DWS Investment GmbH as of 4Q2022. Past performance may not be indicative of future results.

(Non-GAAP Net Income + Depreciation & Amortization) / (Operating Cash flow – Stock Compensation) by sector

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2011-2022 Aggregate
Communication Services	0.97	0.86	0.98	0.95	1.10	1.05	1.01	0.86	0.83	0.88	0.80	0.80	1.02	0.95	1.21	1.18	1.11	1.13	1.06	1.10	1.10	0.82
Consumer Discretionary	0.91	0.96	0.97	1.40	1.28	0.89	0.99	0.77	0.98	1.00	1.02	1.08	1.06	1.08	1.01	1.02	0.99	1.05	0.82	1.24	1.46	0.94
Consumer Staples	0.95	0.95	0.98	1.02	1.03	1.07	1.03	0.92	1.07	1.04	1.03	1.02	0.98	0.99	0.98	1.05	1.10	1.11	0.92	1.01	1.17	0.88
Energy	0.91	0.94	0.93	0.97	1.01	1.01	1.01	1.03	0.98	1.01	1.03	0.97	1.02	1.20	1.23	1.13	1.03	1.07	1.24	0.96	1.00	0.91
Financials	0.64	0.97	1.62	2.12	-5.49	-1.02	0.02	0.23	0.56	0.43	0.73	0.47	0.82	0.75	0.93	1.33	0.81	0.96	2.36	1.09	0.88	0.68
Health Care	1.14	1.09	1.06	1.16	1.10	1.16	1.17	1.11	1.27	1.18	1.20	1.22	1.23	1.30	1.29	1.32	1.35	1.28	1.20	1.24	1.37	1.02
Industrials	0.86	0.85	0.94	0.91	0.99	0.90	0.96	0.88	0.96	1.00	1.06	0.99	1.04	1.03	1.17	1.17	1.16	1.12	1.11	1.09	1.16	0.95
Information Technology	0.85	0.99	0.94	0.97	1.07	1.00	1.02	1.00	1.06	1.00	1.03	1.01	0.98	1.13	1.06	1.10	1.13	1.13	1.10	1.19	1.28	0.89
Materials	1.05	0.92	1.24	1.38	1.10	1.07	1.25	0.88	1.07	1.09	1.07	1.06	1.13	1.06	0.98	1.14	1.26	1.15	0.97	1.16	1.24	0.93
Real Estate															1.28	1.08	1.10	1.09	1.07	1.19	1.15	0.94
Utilities	1.08	0.89	0.96	1.25	0.88	1.09	1.07	0.81	0.90	0.84	0.84	0.84	0.91	0.82	0.89	0.89	0.97	1.09	1.65	1.43	1.35	0.92
S&P 500	0.86	0.94	1.07	1.19	1.43	1.42	0.79	0.76	0.92	0.86	0.97	0.85	1.00	1.02	1.07	1.14	1.06	1.10	1.15	1.14	1.16	1.02
S&P 500 ex Financials	0.95	0.94	0.98	1.07	1.06	1.01	1.04	0.94	1.03	1.02	1.03	1.02	1.04	1.09	1.11	1.13	1.14	1.14	1.07	1.16	1.23	1.08

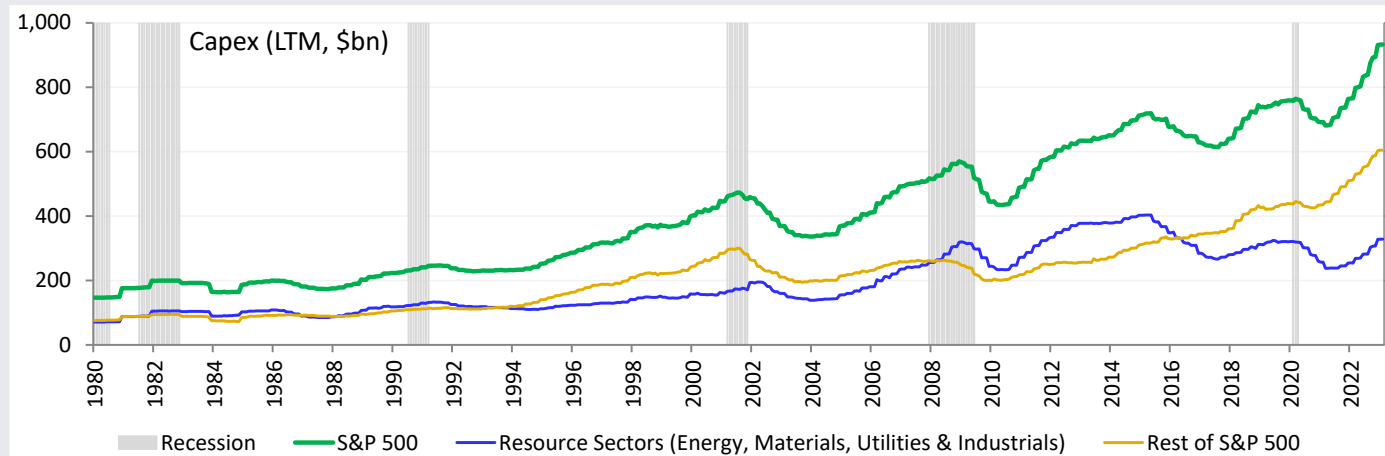
Source: Haver, DWS Investment GmbH as of 4Q2022. Past performance may not be indicative of future results.

(GAAP Net Income + Depreciation & Amortization) / (Operating Cash flow – Stock Compensation) by sector

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2011-2022 Aggregate
Communication Services	0.64	0.78	0.82	0.85	0.97	0.57	0.91	0.81	0.83	0.68	0.63	0.88	0.85	0.97	1.09	1.56	1.11	1.04	0.92	1.10	0.92	0.78
Consumer Discretionary	0.50	0.97	0.78	1.19	1.17	0.56	0.24	0.79	0.98	1.08	1.02	1.08	1.09	1.06	0.95	1.08	0.88	1.02	0.71	1.33	1.24	0.92
Consumer Staples	0.93	0.88	0.97	1.02	0.99	1.02	0.87	0.86	1.07	0.98	0.99	1.01	0.90	0.94	1.01	1.01	0.92	0.90	0.80	0.91	0.99	0.82
Energy	0.69	0.97	0.93	0.99	1.04	1.03	0.79	0.89	0.98	0.94	1.01	0.95	0.92	0.47	0.78	1.20	1.01	0.81	-0.21	0.94	1.03	0.75
Financials	0.64	0.99	1.53	2.14	-5.58	-1.04	-0.23	0.37	0.62	0.49	0.71	0.47	0.82	0.79	0.96	1.36	0.77	1.15	2.46	1.33	0.74	0.71
Health Care	0.96	0.77	0.84	0.96	0.88	0.90	0.91	1.04	1.02	0.96	0.93	1.01	1.00	0.97	0.98	0.88	0.96	0.98	0.80	1.02	1.03	0.78
Industrials	0.75	0.83	0.88	0.89	0.96	0.85	0.88	0.85	0.95	0.97	0.98	1.00	0.95	0.93	1.06	1.05	0.97	0.99	0.90	1.12	1.08	0.87
Information Technology	0.29	0.81	0.86	0.91	1.00	0.92	0.82	0.94	1.02	0.94	0.88	0.97	0.96	0.97	0.94	0.81	1.03	1.03	1.00	1.11	1.08	0.80
Materials	0.90	0.88	1.21	1.41	1.10	0.99	0.61	0.85	1.04	1.00	0.91	0.92	0.99	0.75	0.85	1.02	1.07	0.89	0.82	1.07	1.11	0.80
Real Estate															1.28	1.11	1.13	1.17	1.06	1.21	1.16	0.95
Utilities	0.80	0.77	0.99	1.19	0.83	1.11	1.04	0.82	0.85	0.79	0.77	0.77	0.86	0.69	0.71	0.82	0.82	0.96	1.40	1.22	1.20	0.82
S&P 500	0.66	0.88	0.98	1.13	1.37	1.26	0.55	0.75	0.90	0.82	0.88	0.82	0.93	0.87	0.96	1.04	0.95	1.02	0.95	1.13	1.00	0.93
S&P 500 ex Financials	0.68	0.86	0.89	1.00	1.00	0.88	0.80	0.89	0.99	0.95	0.93	0.98	0.97	0.90	0.96	1.00	1.01	1.00	0.84	1.10	1.06	0.95

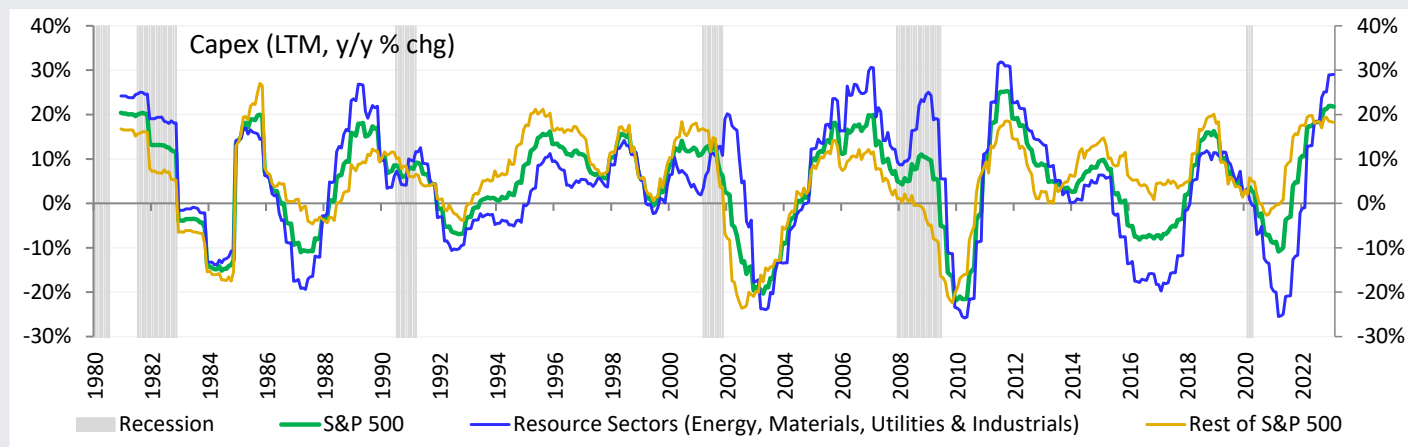
Source: Haver, DWS Investment GmbH as of 4Q2022. Past performance may not be indicative of future results.

S&P 500 capex: resource sectors vs. the rest of S&P



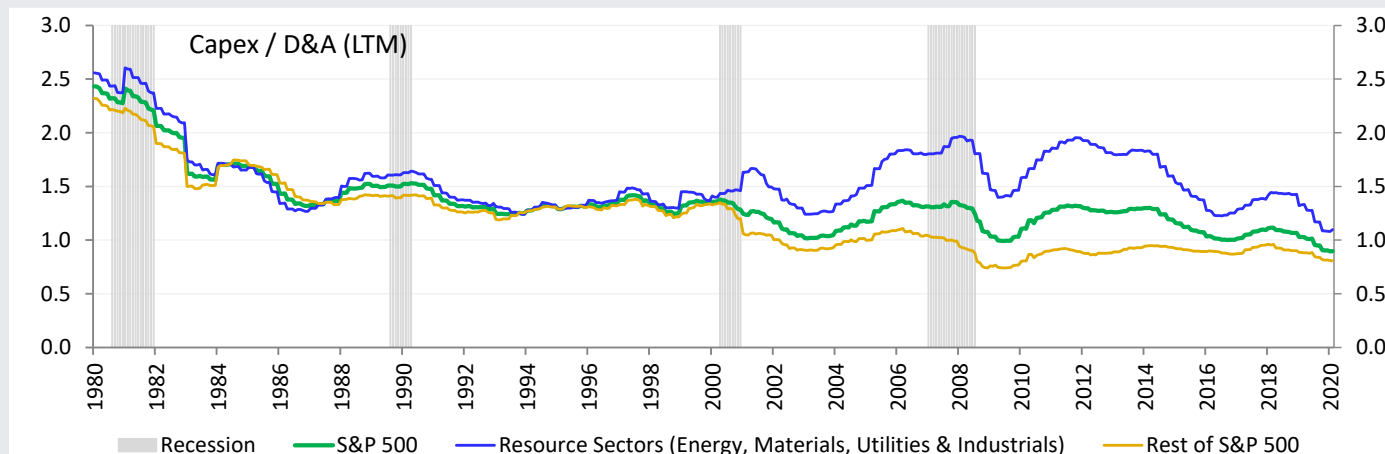
Source: Haver, DWS Investment GmbH as of 2/28/2023. Past performance may not be indicative of future results.

S&P 500 capex growth: resource sectors vs. the rest of S&P



Source: Haver, DWS Investment GmbH as of 2/28/2023. Past performance may not be indicative of future results.

S&P 500 Capex / Depreciation & Amortization



Source: Haver, DWS Investment GmbH as of 2/28/2023. Past performance may not be indicative of future results.

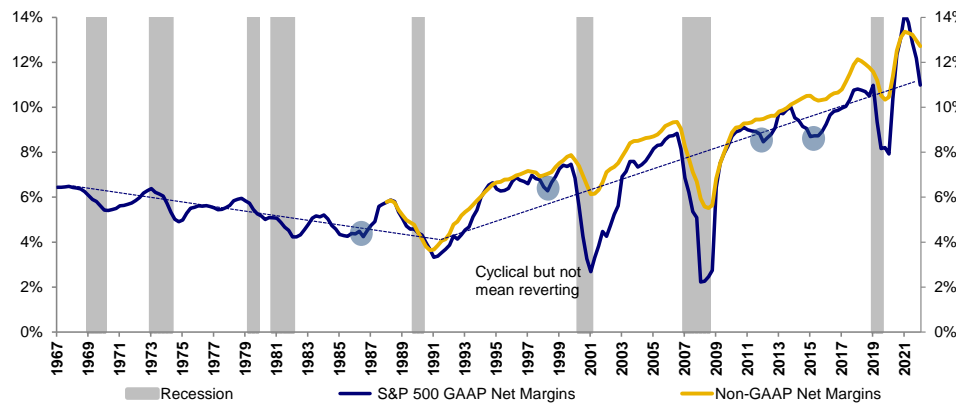
S&P 500 non-GAAP net margin by sector (shaded is the peak of each sector, on current S&P 500 constituents*)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	1Q22	2Q22	3Q22	4Q22
Communication Services	9.5%	6.7%	7.9%	9.4%	10.7%	9.5%	7.5%	5.1%	7.6%	6.9%	9.3%	10.2%	12.0%	12.3%	11.3%	12.9%	12.9%	12.3%	11.0%	12.5%	13.4%	13.8%	13.6%	15.5%	15.1%	15.1%	18.1%	16.9%	14.7%	13.3%	11.9%
Consumer Discretionary	4.3%	4.4%	5.5%	5.0%	5.5%	4.6%	2.4%	3.4%	4.0%	4.1%	5.8%	4.7%	4.0%	2.8%	4.5%	5.8%	6.0%	6.0%	6.3%	6.1%	6.8%	7.2%	7.0%	7.6%	7.1%	5.3%	7.7%	5.2%	6.2%	7.2%	5.9%
Consumer Staples	5.8%	6.4%	6.7%	6.5%	6.6%	6.4%	6.3%	6.8%	6.6%	6.6%	7.7%	7.6%	7.3%	7.2%	7.3%	7.5%	7.1%	6.9%	7.0%	7.0%	7.0%	7.2%	7.4%	7.6%	7.5%	7.4%	7.7%	7.3%	7.3%	7.2%	6.7%
Energy	5.4%	6.1%	6.9%	4.9%	4.8%	8.4%	7.6%	5.3%	6.8%	8.5%	9.7%	9.4%	8.8%	5.1%	7.3%	8.1%	7.7%	7.3%	7.5%	5.0%	1.6%	4.6%	7.2%	5.3%	-0.8%	8.3%	10.6%	14.8%	14.7%	13.0%	
Financials	9.6%	10.7%	11.8%	10.9%	11.3%	10.9%	9.7%	11.5%	13.4%	13.8%	13.6%	14.0%	12.3%	-2.9%	5.3%	11.0%	11.3%	12.9%	14.9%	14.0%	15.2%	15.1%	14.8%	17.4%	17.1%	13.8%	21.7%	18.3%	17.0%	14.6%	16.2%
Health Care	9.9%	10.2%	9.6%	9.6%	9.9%	9.9%	9.9%	9.3%	10.3%	10.6%	10.4%	9.9%	10.0%	9.9%	9.7%	10.4%	10.5%	10.3%	10.2%	10.4%	10.5%	9.9%	10.2%	10.5%	10.0%	10.0%	11.5%	11.9%	11.3%	10.8%	9.6%
Industrials	6.2%	6.3%	6.4%	6.4%	6.6%	6.6%	5.2%	5.4%	5.4%	5.9%	5.1%	5.3%	6.2%	5.2%	4.1%	6.1%	6.6%	7.0%	7.6%	8.1%	8.9%	8.6%	8.9%	10.4%	9.7%	5.7%	8.4%	8.1%	10.4%	9.6%	10.0%
Information Technology	10.0%	9.2%	10.9%	10.7%	13.2%	15.4%	9.0%	10.0%	11.5%	13.6%	13.4%	13.8%	14.0%	13.1%	13.9%	17.5%	17.7%	16.4%	18.0%	18.7%	19.0%	19.9%	21.2%	22.6%	21.8%	22.1%	24.6%	25.0%	23.5%	23.8%	24.1%
Materials	8.2%	7.0%	6.7%	5.9%	5.8%	5.8%	2.9%	3.5%	4.9%	6.4%	7.0%	8.1%	9.1%	4.4%	5.0%	7.5%	8.4%	7.0%	6.7%	6.0%	6.4%	6.7%	8.1%	8.9%	9.2%	9.2%	13.6%	13.7%	14.4%	11.2%	10.4%
Real Estate	5.8%	6.9%	7.5%	8.3%	10.8%	8.7%	5.1%	5.0%	5.4%	7.2%	18.1%	19.2%	19.8%	18.9%	18.5%	21.2%	27.6%	29.1%	29.8%	32.6%	35.2%	33.3%	34.0%	34.3%	34.2%	34.4%	37.2%	36.7%	37.0%	36.2%	35.3%
Utilities	10.7%	9.8%	7.9%	8.1%	8.0%	5.8%	5.1%	7.1%	9.0%	7.8%	7.8%	8.3%	8.9%	8.5%	9.5%	9.7%	9.9%	10.1%	9.8%	9.7%	10.7%	11.9%	11.8%	12.5%	12.8%	13.9%	13.7%	15.3%	11.7%	13.5%	7.8%
S&P 500	7.0%	7.2%	7.8%	7.6%	8.2%	8.2%	6.6%	7.0%	7.9%	8.5%	6.7%	7.0%	7.2%	5.5%	6.3%	8.4%	8.7%	8.8%	9.3%	9.4%	9.9%	9.9%	10.5%	11.7%	11.4%	10.7%	13.3%	13.0%	13.2%	12.4%	11.7%
S&P 500 ex. Financials & Energy	6.7%	6.7%	7.2%	7.0%	7.6%	7.7%	6.0%	6.2%	7.0%	7.5%	5.8%	6.0%	6.4%	6.3%	6.4%	7.9%	8.2%	8.1%	8.3%	8.6%	8.9%	8.9%	9.6%	10.7%	10.3%	9.9%	12.0%	12.1%	12.4%	11.9%	10.9%
S&P 500 ex. Energy & Financials	6.8%	6.8%	7.3%	7.2%	7.8%	7.6%	5.8%	6.3%	7.0%	7.4%	5.3%	5.4%	5.9%	5.9%	6.6%	8.0%	8.2%	8.1%	8.5%	8.8%	9.3%	9.6%	10.1%	11.1%	10.8%	10.7%	12.3%	12.2%	12.1%	11.5%	10.7%
S&P 500 ex. Tech	6.7%	7.0%	7.5%	7.3%	7.7%	7.6%	6.4%	6.7%	7.6%	8.0%	6.3%	6.6%	6.7%	4.9%	5.7%	7.5%	7.8%	8.0%	8.4%	8.5%	8.9%	8.8%	9.3%	10.5%	10.1%	11.8%	11.4%	11.9%	11.1%	10.1%	

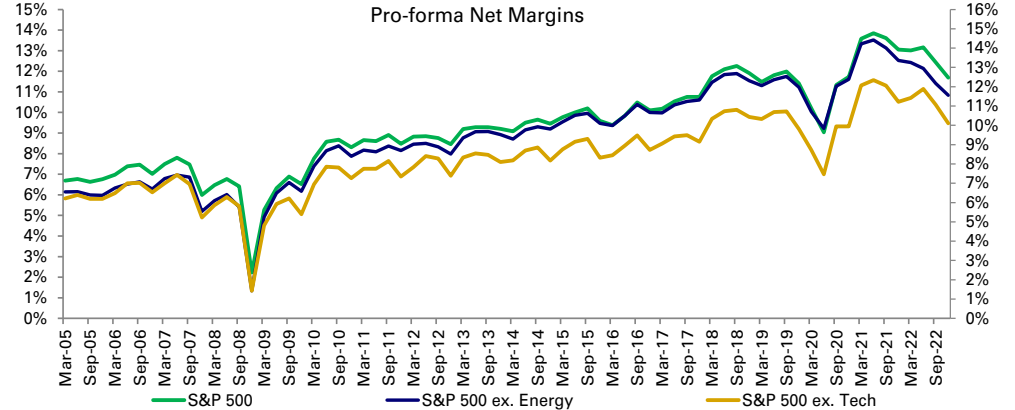
* S&P 500 current constituents represents the index constituents as of 9/30/2022.

Source: Compustat, DWS Investment GmbH as of 4Q2022. Past performance may not be indicative of future results.

S&P 500 trailing 4-quarter net margins: GAAP vs. non-GAAP (historic constituents)



S&P 500 quarterly non-GAAP net margin (current constituents*)



* S&P 500 current constituents represents the index constituents as of 9/30/2022.

Source: Compustat, DWS Investment GmbH as of 4Q2022. Past performance may not be indicative of future results.



DWS Investment GmbH S&P 500 Annual EPS Outlook

	2014A	2015A	2016A	2017A	2018A	2019A	2020A	2021A	y/y	Bottom-up Consensus (IBES)				DWS View				Normalized 2023	
										2022E	y/y	2023E	y/y	2022E	y/y	2023E	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	49.0%										
S&P 500 EPS (current constituents)	\$116.53	\$117.26	\$117.49	\$129.37	\$156.07	\$161.57	\$144.24	\$207.99	46.4%	\$222.12	6.8%	\$224.14	0.9%	\$222	6.7%	\$222	0.0%	\$220	99%
Sector (\$ bn)																			
Communication Services	67.9	78.3	90.9	96.7	123.4	130.8	134.1	185.4	38.3%	160.5	-13.4%	173.9	8.3%	160.5	-13.4%	167.5	4.4%	159.0	95%
Consumer Discretionary	64.5	75.3	84.1	88.2	104.0	101.9	80.4	133.9	66.6%	139.1	3.8%	147.5	6.1%	138.0	3.0%	145.5	5.4%	149.4	103%
Consumer Staples	78.7	77.0	79.4	84.1	90.8	91.5	95.4	105.2	10.2%	109.0	3.6%	113.0	3.7%	108.5	3.2%	110.0	1.4%	110.0	100%
Energy	94.3	39.6	10.8	37.3	69.6	49.6	-5.1	78.4	1632%	202.8	158.6%	166.6	-17.8%	200.5	155.6%	170.5	-15.0%	143.8	84%
Financials	172.4	187.1	188.7	195.8	242.5	249.5	198.2	328.9	65.9%	273.7	-16.8%	307.2	12.2%	275.5	-16.2%	295.0	7.1%	291.1	99%
Health Care	137.9	153.0	157.8	172.2	189.2	207.3	227.4	294.1	29.4%	311.0	5.7%	283.0	-9.0%	311.3	5.8%	290.0	-6.8%	288.2	99%
Industrials	99.9	103.4	97.4	106.2	129.8	124.1	65.1	109.0	67.4%	139.9	28.3%	154.8	10.6%	140.0	28.4%	148.5	6.1%	150.1	101%
Information Technology	177.8	185.2	194.7	229.7	268.1	266.1	298.2	382.0	28.1%	391.6	2.5%	405.1	3.5%	391.2	2.4%	396.0	1.2%	396.0	100%
Materials	24.5	23.6	22.4	28.2	35.2	33.6	32.0	58.5	82.9%	62.8	7.3%	52.7	-16.0%	63.0	7.7%	53.5	-15.1%	52.8	99%
Real Estate	23.4	26.6	29.5	32.4	36.0	37.7	37.4	44.4	18.6%	48.8	9.9%	49.1	0.7%	48.0	8.1%	49.0	2.1%	47.5	97%
Utilities	31.2	31.5	33.7	35.1	38.7	42.7	44.1	47.1	6.8%	47.9	1.7%	51.1	6.8%	48.1	2.2%	51.1	6.1%	51.1	100%
S&P 500	972.5	980.6	989.4	1106.1	1327.4	1334.7	1207.1	1767.0	46.4%	1887.0	6.8%	1904.2	0.9%	1884.6	6.7%	1876.6	-0.4%	1838.8	98%
S&P ex. Energy (\$bn)	878.2	941.0	978.6	1068.8	1257.8	1285.1	1212.3	1688.6	39.3%	1684.2	-0.3%	1737.5	3.2%	1684.1	-0.3%	1706.1	1.3%	1695.1	99%
S&P ex. Tech (\$bn)	794.8	795.4	794.7	876.3	1059.3	1068.6	908.9	1385.0	52.4%	1495.4	8.0%	1499.1	0.2%	1493.4	7.8%	1480.6	-0.9%	1442.8	97%
S&P 500 Sales/Share (historical index)	\$1,163	\$1,127	\$1,151	\$1,232	\$1,339	\$1,415	\$1,362	\$1,567	15.0%										
S&P 500 Non-GAAP Net Margin	10.2%	10.4%	10.3%	10.7%	12.1%	11.5%	10.3%	13.3%											

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	222	52	55	56	59

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 9/30/2022.

Source: Factset, DWS Investment GmbH as of 3/7/2023. Past performance may not be indicative of future results.



DWS Investment GmbH View: S&P 500 fair value by sector: Assuming a ~5.50% 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)	2021E Dividend Yield	2023 End Fair Value (\$bn)	PE on Normal 2023E EPS	2023 End Upside %	2023 End Upside vs. S&P 500
Communication Services	2,630	15.7	167.5	95%	159.0	-8%	146.3	15%	5.60%	2,612	0%	2,612	1.1%	2,808	17.7	7%	11%
Consumer Discretionary	3,588	24.7	145.5	103%	149.4	-8%	137.5	12%	5.50%	2,499	15%	2,864	1.1%	3,076	20.6	-14%	-10%
<i>ex. Auto & Internet Retail</i>	1,998	20.4	98.0	100%	98.0	-8%	90.2	17%	5.50%	1,639	7%	1,754	1.7%	1,873	19.1	-6%	-2%
Consumer Staples	2,263	20.6	110.0	100%	110.0	-7%	102.3	13%	5.00%	2,046	0%	2,046	2.7%	2,154	19.6	-5%	0%
Energy	1,641	9.6	170.5	84%	143.8	-15%	122.2	16%	6.00%	2,037	-20%	1,629	2.9%	1,729	12.0	5%	10%
Financials	3,895	13.2	295.0	99%	291.1	-10%	262.0		6.40%	4,093	-10%	3,684	2.2%	3,949	13.6	1%	6%
Banks	1,298	10.0	130.0	100%	130.0	-10%	117.0		6.75%	1,733	-15%	1,473	3.3%	1,569	12.1	21%	25%
Health Care	4,781	16.5	290.0	99%	288.2	-8%	265.1	9%	5.40%	4,910	0%	4,910	1.6%	5,245	18.2	10%	14%
Industrials	2,976	20.0	148.5	101%	150.1	-8%	138.1	18%	5.60%	2,465	0%	2,465	1.7%	2,634	17.6	-11%	-7%
Information Technology	9,309	23.5	396.0	100%	396.0	-5%	376.2	2%	5.55%	6,778	10%	7,456	1.0%	8,018	20.2	-14%	-10%
Materials	934	17.5	53.5	99%	52.8	-10%	47.5	17%	5.80%	819	0%	819	1.7%	877	16.6	-6%	-2%
Real Estate	837	17.1	49.0	97%	47.5	-8%	43.7	29%	5.25%	832	0%	832	3.7%	870	18.3	4%	8%
Utilities	905	17.7	51.1	100%	51.1	-8%	47.0	60%	5.25%	895	0%	895	3.3%	939	18.4	4%	8%
S&P 500 (\$ bn)	33,759	18.0	1876.6	98%	1838.8	-8.2%	1687.8		5.61%	29,987	0.8%	30,212	1.7%	32,299	17.6	-4%	0%
S&P 500 Index (\$/sh)	3986	18.0	222.0	99%	220.0	-8.2%	202.0	11%	5.60%	3607	0.0%	3607	1.7%	3847	17.5	-3%	0%

	>5%		Higher upside vs. S&P 500
	between -5% and 5%		Same upside as S&P 500
	<-5%		Lower upside vs. S&P 500

Source: IBES, DWS Investment GmbH as of 3/7/2023. 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 9/30/2022.

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

DWS Investment GmbH View: S&P 500 fair value by industry (1 of 2)

	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)	2021E Dividend Yield	2023 End Fair Value (\$bn)	PE on Normal 2023E EPS	2023 End Upside %	2023 End Upside vs. S&P 500
CONSUMER DISCRETIONARY	3,588	24.7	145.5	103%	149.4	-8%	137	12%	5.50%	2,499	15%	2,864	1.1%	3,076	20.6	-14%	-10%
Auto Components	43,626	18.2	2,400	105%	2,520	-8%	2,318	11%	5.75%	40,320	5%	42,336	0.4%	45,884	18.2	5%	9%
Automobiles	596,832	23.9	25,000	100%	25,000	-12%	22,000	19%	6.50%	338,462	30%	440,000	0.5%	479,666	19.2	-20%	-15%
Distributors	55,151	17.8	3,100	100%	3,100	-8%	2,852	13%	5.75%	49,600	0%	49,600	1.8%	53,056	17.1	-4%	1%
Hotels Restaurants & Leisure	614,187	28.6	21,500	110%	23,650	-7%	21,995	27%	5.00%	439,890	15%	505,874	1.5%	538,966	22.8	-12%	-8%
Household Durables	122,963	11.2	11,000	95%	10,450	-15%	8,883	14%	6.50%	136,654	-15%	116,156	1.6%	125,278	12.0	2%	6%
Internet & Direct Marketing Retail	993,830	44.2	22,500	110%	24,750	-7%	23,018	1%	5.50%	418,500	60%	669,600	0.1%	726,146	29.3	-27%	-23%
Leisure Products	6,733	11.2	600	90%	540	-8%	497	27%	6.00%	8,280	-20%	6,624	5.4%	6,863	12.7	2%	6%
Multiline Retail	165,297	21.5	7,700	100%	7,700	-8%	7,084	12%	5.25%	134,933	0%	134,933	1.5%	144,022	18.7	-13%	-9%
Specialty Retail	808,274	18.0	45,000	100%	45,000	-7%	41,850	13%	5.25%	797,143	0%	797,143	1.8%	848,243	18.8	5%	9%
Textiles Apparel & Luxury Goods	181,424	27.1	6,700	100%	6,700	-7%	6,231	1%	5.25%	118,686	10%	130,554	1.4%	139,493	20.8	-23%	-19%
CONSUMER STAPLES	2,263	20.6	110.0	100%	110.0	-7%	102	13%	5.00%	2,046	0%	2,046	2.7%	2,154	19.6	-5%	0%
Beverages	597,692	23.9	25,000	100%	25,000	-7%	23,250	13%	4.80%	484,375	15%	557,031	2.5%	586,352	23.5	-2%	2%
Food & Staples Retailing	516,379	21.5	24,000	100%	24,000	-6%	22,560	8%	5.00%	451,200	0%	451,200	1.5%	480,395	20.0	-7%	-3%
Food Products	371,969	17.3	21,500	100%	21,500	-8%	19,780	24%	5.25%	376,762	-5%	357,924	2.6%	378,134	17.6	2%	6%
Household Products	478,485	23.9	20,000	100%	20,000	-8%	18,400	9%	5.00%	368,000	10%	404,800	2.7%	426,408	21.3	-11%	-7%
Personal Products	57,914	38.6	1,500	100%	1,500	-8%	1,380	2%	4.75%	29,053	20%	34,863	1.1%	37,197	24.8	-36%	-31%
Tobacco	240,544	13.4	18,000	100%	18,000	-8%	16,560	20%	5.00%	331,200	-30%	231,840	6.1%	236,271	13.1	-2%	3%
Energy	1,641	9.6	170.5	84%	143.8	-15%	122	16%	6.00%	2,037	-20%	1,629	2.9%	1,729	12.0	5%	10%
Energy Equipment & Services	135,631	16.0	8,500	100%	8,500	-8%	7,820	20%	6.00%	130,333	3%	134,243	2.0%	143,590	16.9	6%	10%
Oil Gas & Consumable Fuels	1,505,769	9.3	162,000	84%	135,270	-15%	114,980	16%	6.00%	1,916,325	-22%	1,494,734	3.7%	1,573,952	11.6	5%	9%
FINANCIALS	3,895	13.2	295.0	99%	291.1	-10%	262	0%	6.40%	4,093	-10%	3,684	2.2%	3,949	13.6	1%	6%
Capital Markets	1,008,349	17.4	58,000	95%	55,100	-10%	49,590	2%	6.50%	762,923	-5%	724,777	2.3%	777,242	14.1	-23%	-19%
Banks	1,298,389	10.0	130,000	100%	130,000	-10%	117,000	N/A	6.75%	1,733,333	-15%	1,473,333	3.1%	1,571,310	12.1	21%	25%
Consumer Finance	211,562	10.3	20,500	95%	19,475	-15%	16,554	N/A	7.00%	236,482	-10%	212,834	1.5%	230,830	11.9	9%	13%
Diversified Financial Services	578,124	20.3	28,500	100%	28,500	-7%	26,505	3%	5.50%	481,909	0%	481,909	0.0%	522,871	18.3	-10%	-5%
Insurance	798,287	13.8	58,000	100%	58,000	-8%	53,360	N/A	6.00%	889,333	-10%	800,400	1.7%	858,683	14.8	8%	12%
Health Care	4,781	16.5	290.0	99%	288.2	-8%	265	9%	5.40%	4,910	0%	4,910	1.6%	5,245	18.2	10%	14%
Biotechnology	760,509	14.5	52,500	100%	52,500	-8%	48,300	14%	5.50%	878,182	-5%	834,273	2.5%	884,579	16.8	16%	21%
Health Care Equipment & Supplies	1,070,017	23.3	46,000	100%	46,000	-8%	42,320	9%	5.25%	806,095	20%	967,314	1.1%	1,036,797	22.5	-3%	1%
Health Care Providers & Services	1,104,856	15.0	73,800	98%	72,324	-8%	66,538	8%	5.25%	1,267,392	-5%	1,204,022	1.4%	1,286,971	17.8	16%	21%
Life Sciences Tools & Services	422,245	25.6	16,500	98%	16,170	-8%	14,876	10%	5.50%	270,480	20%	324,576	0.2%	351,500	21.7	-17%	-12%
Pharmaceuticals	1,422,894	14.2	100,000	100%	100,000	-8%	92,000	8%	5.50%	1,672,727	-8%	1,538,909	2.7%	1,628,091	16.3	14%	19%

Source: IBES, DWS Investment GmbH as of 3/7/2023. Past performance may not be indicative of future results.
The estimated 2023 year end upside is on absolute valuation basis of each sector, not on relative sector valuation basis.

DWS Investment GmbH View: S&P 500 fair value by industry (2 of 2)

	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)	2021E Dividend Yield	2023 End Fair Value (\$bn)	PE on Normal 2023E EPS	2023 End Upside %	2023 End Upside vs. S&P 500
INDUSTRIALS	2,976	20.0	148.5	101%	150.1	-8%	138	18%	5.60%	2,465	0%	2,465	1.7%	2,634	17.6	-11%	-7%
Aerospace & Defense	648,480	23.6	27,500	103%	28,325	-8%	26,059	22%	5.25%	496,362	10%	545,998	1.4%	583,156	20.6	-10%	-6%
Air Freight & Logistics	219,075	16.2	13,500	100%	13,500	-8%	12,420	8%	6.00%	207,000	-10%	186,300	2.9%	197,655	14.6	-10%	-5%
Airlines	77,055	9.1	8,500	115%	9,775	-15%	8,309	69%	8.00%	103,859	0%	103,859	0.6%	114,708	11.7	49%	53%
Building Products	174,045	20.5	8,500	100%	8,500	-8%	7,820	15%	5.75%	136,000	0%	136,000	1.7%	145,579	17.1	-16%	-12%
Commercial Services & Supplies	138,168	28.8	4,800	100%	4,800	-8%	4,416	12%	5.25%	84,114	0%	84,114	1.4%	89,851	18.7	-35%	-31%
Construction & Engineering	38,658	20.3	1,900	105%	1,995	-8%	1,835	18%	5.50%	33,371	0%	33,371	0.5%	36,053	18.1	-7%	-2%
Electrical Equipment	196,579	21.8	9,000	103%	9,270	-8%	8,528	11%	5.50%	155,062	5%	162,815	1.7%	173,859	18.8	-12%	-7%
Industrial Conglomerates	336,279	22.0	15,300	103%	15,759	-8%	14,498	11%	5.50%	263,605	0%	263,605	2.0%	280,730	17.8	-17%	-12%
Machinery	644,291	18.9	34,000	97%	32,980	-8%	30,342	21%	5.50%	551,665	0%	551,665	1.5%	590,104	17.9	-8%	-4%
Professional Services	101,356	29.0	3,500	100%	3,500	-8%	3,220	19%	5.25%	61,333	0%	61,333	0.6%	66,021	18.9	-35%	-31%
Road & Rail	304,803	17.9	17,000	98%	16,660	-8%	15,327	18%	5.50%	278,676	0%	278,676	1.9%	297,183	17.8	-2%	2%
Trading Companies & Distributors	97,083	19.4	5,000	100%	5,000	-8%	4,600	14%	5.50%	83,636	0%	83,636	1.6%	89,427	17.9	-8%	-4%
INFORMATION TECHNOLOGY	9,309	23.5	396.0	100%	396.0	-5%	376	2%	5.55%	6,778	10%	7,456	1.0%	8,018	20.2	-14%	-10%
Communications Equipment	301,498	14.7	20,500	100%	20,500	-7%	19,065	-3%	6.00%	317,750	-5%	301,863	2.4%	321,690	15.7	7%	11%
Technology Hardware Storage & Periphe	2,465,374	23.6	104,500	100%	104,500	-5%	99,275	3%	5.50%	1,805,000	5%	1,895,250	0.7%	2,043,690	19.6	-17%	-13%
Electronic Equipment Instruments & Com	202,414	20.2	10,000	100%	10,000	-7%	9,300	11%	6.00%	155,000	0%	155,000	1.2%	167,122	16.7	-17%	-13%
IT Services	1,519,170	21.1	72,000	100%	72,000	-5%	68,400	7%	5.50%	1,243,636	5%	1,305,818	1.3%	1,399,962	19.4	-8%	-4%
Semiconductors & Semiconductor Equipr	1,953,436	24.4	80,000	100%	80,000	-7%	74,400	2%	6.00%	1,240,000	10%	1,364,000	1.3%	1,469,197	18.4	-25%	-20%
Software	2,867,039	26.3	109,000	100%	109,000	-5%	103,550	0%	5.25%	1,972,381	20%	2,366,857	0.8%	2,542,800	23.3	-11%	-7%
MATERIALS	934	17.5	53.5	99%	52.8	-10%	48	17%	5.80%	819	0%	819	1.7%	877	16.6	-6%	-2%
Chemicals	651,722	17.6	37,000	100%	37,000	-10%	33,300	15%	5.75%	579,130	3%	596,504	2.0%	637,060	17.2	-2%	2%
Construction Materials	45,829	30.6	1,500	95%	1,425	-10%	1,283	19%	6.00%	21,375	0%	21,375	0.9%	23,115	16.2	-50%	-45%
Containers & Packaging	92,591	14.2	6,500	98%	6,370	-10%	5,733	36%	5.75%	99,704	-10%	89,734	3.0%	94,905	14.9	2%	7%
Metals & Mining	143,651	16.9	8,500	94%	7,990	-10%	7,191	5%	6.00%	119,850	-5%	113,858	1.9%	121,995	15.3	-15%	-11%
REAL ESTATE	837	17.1	49.0	97%	47.5	-8%	44	29%	5.25%	832	0%	832	3.7%	870	18.3	4%	8%
Equity Real Estate Investment Trusts (RE	809,255	17.1	47,200	97%	45,784	-8%	42,121	30%	5.25%	802,310	0%	802,310	3.8%	837,793	18.3	4%	8%
Real Estate Management & Development	27,894	15.5	1,800	95%	1,710	-8%	1,573	4%	5.75%	27,360	0%	27,360	0.0%	29,754	17.4	7%	11%
COMMUNICATION SERVICES	2,630	15.7	167.5	95%	159.0	-8%	146	15%	5.60%	2,612	0%	2,612	1.1%	2,808	17.7	7%	11%
Diversified Telecommunication Services	285,764	8.0	35,700	90%	32,130	-15%	27,311	105%	5.50%	496,555	-30%	347,588	6.6%	354,179	11.0	24%	28%
Entertainment	452,844	23.2	19,500	100%	19,500	-5%	18,525	9%	5.50%	336,818	25%	421,023	0.2%	456,104	23.4	1%	5%
Interactive Media & Services	1,533,242	18.0	85,000	97%	82,450	-5%	78,328	-8%	5.50%	1,424,136	10.0%	1,566,550	0.0%	1,699,707	20.6	11%	15%
Media	272,819	11.4	24,000	90%	21,600	-12%	19,008	60%	6.00%	316,800	-25%	237,600	2.5%	253,103	11.7	-7%	-3%
Wireless Telecommunication Services	85,617	25.9	3,300	100%	3,300	-5%	3,135	42%	5.25%	59,714	10%	65,686	0.0%	71,105	21.5	-17%	-13%
UTILITIES	905	17.7	51.1	100%	51.1	-8%	47	60%	5.25%	895	0%	895	3.3%	939	18.4	4%	8%
Electric Utilities	575,313	18.2	31,600	100%	31,600	-8%	29,072	60%	5.25%	553,752	5%	581,440	3.5%	609,000	19.3	6%	10%
Gas Utilities	14,485	18.1	800	100%	800	-8%	736	46%	5.25%	14,019	0%	14,019	2.9%	14,775	18.5	2%	6%
Independent Power and Renewable Elect	24,010	10.4	2,300	100%	2,300	-15%	1,955	113%	7.00%	27,929	0%	27,929	3.3%	29,793	13.0	24%	28%
Multi-Utilities	265,912	17.2	15,500	100%	15,500	-8%	14,260	59%	5.25%	271,619	-5%	258,038	3.7%	269,788	17.4	1%	6%
Water Utilities	24,928	29.3	850	100%	850	-5%	808	38%	4.25%	19,000	0%	19,000	1.9%	20,014	23.5	-20%	-15%

Source: IBES, DWS Investment GmbH as of 3/7/2023. Past performance may not be indicative of future results. 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	\$222.00	DWS 2023E S&P 500 DPS	\$70.00	DWS 2023E S&P 500 aggregate ROE	22.2%	Fair long-term nominal return on S&P 500 index	8.60%
		2023E dividend payout ratio	32%	2022E end S&P 500 book value per share	\$1,000	Components of estimated fair S&P 500 return:	
DWS "normal 2023E" S&P 500 EPS	\$220.00	DWS "normal 2023E" S&P 500 DPS	\$70.00	DWS "normal 2023E" S&P 500 aggregate ROE	20.2%	+ Long-term real risk free interest rate	1.60%
"Normal 2023E" EPS / 2023E EPS	99%	Normal dividend payout ratio	35%			+ Long-term fair S&P 500 equity risk premium*	4.00%
				S&P EPS retained for true reinvestment	47%	= Long-term real S&P 500 cost of equity	5.60%
Accounting quality adjustment to pro forma EPS	-\$18.00	EPS directed to net share repurchases	\$38.00	Estimated ROE on reinvested S&P EPS	8.60%	+ Long-term inflation forecast	3.00%
		Normal share repurchase payout ratio	19%	Economic margin (EM) or ROE-CoE	0.00%	= S&P 500 nominal cost of equity	8.60%
Normal 2023E S&P 500 EPS fair to capitalize	\$202	Total payout of S&P 500 EPS	\$108.00	Sources of long-term earnings growth:		* S&P 500 ERP history 300-400bps, w/ real CoE @ 5% - 6.5%	
Key principle: steady-state value = normal EPS / real CoE		Total payout ratio of normal and quality adj. EPS	53%	+ Long-term inflation forecast	3.00%	Fair S&P 500 Market Value and Book Value Multiple	
				+ Fair return on true reinvestment	2.61%	2022E end S&P 500 book value per share	\$1,000
<u>S&P 500 EPS Capitalization Valuation</u>		<u>S&P 500 DPS Discount Model</u>		+ Value added return on true reinvestment	0.00%	Fair PB = Fair PE * normal aggregate ROE	3.61
Normal EPS / (real CoE - (EM/payout) - EM):		Normal DPS / (nominal CoE - DPS growth):		= Long-term earnings growth	5.61%	Fair PE =(inc ROE-g)/(inc real ROE*(real CoE-real g))	17.9
S&P 500 intrinsic value at 2023 start	3607	S&P 500 intrinsic value at 2023 start	3607	+ Growth from net share repurchases	1.05%	Implied S&P 500 fair value of book at 2023 start	3607
S&P 500 intrinsic value at 2023 end	3847	S&P 500 intrinsic value at 2023 end	3847	= Long-term S&P 500 EPS/DPS growth	6.66%	Steady-state PB = normal agg. ROE / real CoE	3.61
Implied fair fwd PE in early 2023 on 2023E \$222 EPS	16.2	Implied fair forward yield on 2023E DPS of \$70.0	1.94%	+ Fair normal dividend yield	1.94%	Confirmed by fair steady-state PE = 1 / real CoE	17.9
Implied fair trailing PE at 2023 end on 2023E \$222 EPS	17.3	Implied fair trailing yield on 2023E DPS of \$70.0	1.82%	= Total long-term return at constant PE	8.60%		
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	\$146.00

- 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

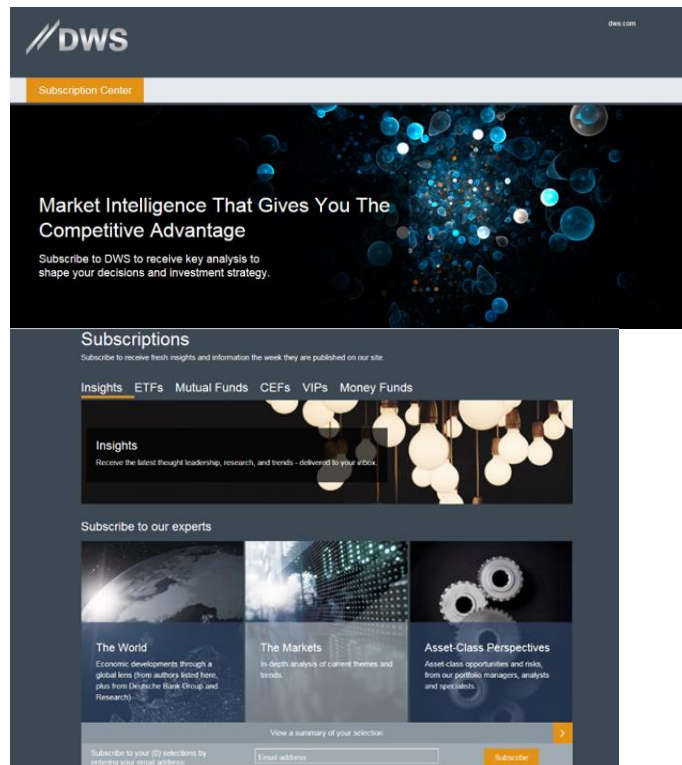
Optimistic 2023 end 10yr yield outlook: 2.5% inflation expectation + 1% overnight real rate + 0.75% inflation risk premium - 0.5% risk asset hedge = 3.75%

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%

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