

# The illusions and confusions of inflation: It's dangerous to let them linger



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**October CPI declined more than expected, but the inflation fight is far from over**  
The holiday rally came early, sparked by lower inflation in October than expected, along with bullish narratives circulating about reliable post midterm election rallies, China reopening and Russia retreating. It's likely best to take this gift rally and leave the festivities early. As the inflation fight is far from over. And neither are the other concerns. Inflation off its highs is welcome, yet it already took longer than hoped, but the big fight will be getting it under 4%. It's important that the Fed bring inflation closer to 3% by mid-2023, otherwise it risks the bond market demanding higher inflation risk premiums because of high inflation being a 2+ year experience. October CPI showed headline and core at 7.8% and 6.3% y/y, compared to 8.2% and 6.7% y/y in September. Most of the Goods categories slowed in price y/y and m/m increases (some with big declines unlikely to persist), however, most of the Service categories still ran y/y and m/m changes over 5%. Thus, disinflation is narrow and yet high inflation is broader at services and thus labor. The CPI report has noise related to adjustments at health care, shelter, and is generally noisy m/m. We're focusing on unit labor costs, i.e. wages/productivity. Very poor trends here YTD suggest it will take time and more hikes for inflation to normalize.

**Markets, journalists and some FOMC members making the inflation fight harder**  
The next FOMC decision is on December 14<sup>th</sup> and the next CPI report for Nov is Dec 13<sup>th</sup>. We doubt there is enough new information in Nov inflation or jobs reports to alter the Fed's near-term decisions and 2023 projections. Markets and financial conditions likely greater factors. If S&P over 3800 and broad financial conditions loosen in Nov-Dec vs. Sept-Oct, we think Fed hikes 75bp in Dec. or 50bp with at least another 50bp in 1Q. Current conditions raise risk Chair Powell takes hawkish tone at Dec post FOMC press conference (like in 2018). Dots likely show 5.0-5.5% median terminal Fed Funds rate through 2023.

**Mid-term elections: A clear disappointment for Republicans and the supply-side**  
Republicans make minor gains in House and not clear it will be a unified Rep majority. Small chance Reps take Senate with NV and then GA in the Dec 6<sup>th</sup> runoff, which extends midterm uncertainty into a period of budget and other lame duck session risks. History's strong S&P performance after midterms doesn't have a clear conceptual basis. Poor post-election performance in 2002 & 2018 shows that Fed policy and geopolitical issues can supersede. Russia-Ukraine war still ongoing. Asking Ukraine to concede territory to expedite a cease fire is odd given Russian invasion, atrocities and Ukraine resistance winning. We expect bipartisan tough-on-China and Ukraine support in new Congress.

**Illusions and confusion of inflation: Beware measures of wages, sales and profits**  
Oil is in a lot of things, but labor is in everything. The best structural measure of inflation is unit labor costs (ULCs). If wages are rising 5% and productivity is rising 5%, that's prosperity. If wages are rising 5% but productivity is low/negative and CPI is over 5%, that's misery for both employees and employers. If ULCs (hourly wages less hourly output) are above the Fed's target then inflation is structurally too high. ULCs are rising since 3Q21 and now 6.1% y/y in 3Q22. Meanwhile, productivity is weak and -1.4% y/y in 3Q22. Also, there is nothing good about retail sales or corporate sales and profits lagging inflation either. S&P real EPS growth is very negative, healthy real growth is 5%.

**How does high inflation impact equities? It weighs on the economy, lowers fair PE**  
Although equities represent real assets and PE is driven by the real cost of equity, broad-based inflation is negative for equity performance. Broad-based inflation if lasting for multiple years have negative impact on the economy, such as lower productivity, greater uncertainty with higher inflation risk premium and thus higher real interest rates, higher effective taxation and lower earnings quality from inadequate depreciation expense, etc. All of these lower the fair PE and the real return earned on the ownership of equities.

**We see downside risk to S&P 500 into early 2023**  
S&P is trading at about 18x forward EPS on our estimates. We find this a very demanding valuation with what Treasury bills/ bonds, corporate and muni bonds are yielding. We think bonds are better for 2023. In our view the S&P is likely to test its 2022 lows around 3600 before yearend or 1Q23 as the inflation fight lingers. There are risks around the lame duck session, budget setting and ceiling, into yearend tax loss selling and continued risks with Russia/Ukraine for Europe and the world.

Contributor: Ju Wang, Portfolio Manager Equity

Global Equity Index Forecasts: 12-months			
Index	Sep 2023F	NTM EPS Growth	Target PE
S&P 500	4,200	0.0%	18.9
EuroStoxx 50	3,750	3.6%	12.0
Stoxx 600	445	3.4%	12.7
MSCI Japan	1,250	5.5%	13.0
MSCI Asia xJ	660	3.2%	12.3
MSCI EM	1,030	1.7%	11.7

S&P 500 Outlook at Yearend			
	2021	2022F	2023F
<b>S&amp;P 500</b>	4766	3800	4000
Dividend Yield	1.3%	1.75%	1.75%
<b>S&amp;P EPS</b>	\$210	\$222	\$220
Trailing PE	22.7	17.1	18.2
DPS	\$61	\$68	\$70

**Next 5%+ Price Move**  
( Up / Balanced Risk / **Down** )  
**Risk of near-term further 10%+ correction**  
( Low / **Moderate** / High )

Taxable U.S. Investor Asset Allocations		
Asset Class	Long-term	Current
<b>Fixed Income/Cash</b>	<b>30-35%</b>	<b>38.0%</b>
<b>Equities</b>	<b>55-60%</b>	<b>52.5%</b>
US Equities	40%	36.0%
S&P 500	35%	32.0%
Small Caps	0-10%	4.0%
Foreign DM	10-15%	10.5%
Foreign EM	0-10%	6.0%
<b>Alternatives</b>	<b>10%</b>	<b>9.5%</b>

Key CIO Views		
Macro signal:	Current	Sep 2023F
U.S. Fed Funds rate	3.0-3.25%	4.75%**
10yr Treasury yield	3.85%	3.75%**
US IG Corp Spreads	100bp	150bp
US High Yield Spreads	340bp	550bp
Crude Oil (WTI) \$/bbl	93	100
EUR / USD FX rate	0.97	1.05

GDP Forecasts			
Region	2021	2022F	2023F
US	5.7%	1.9%	0.7%
World	6.0%	3.1%	2.8%
Euro area	5.2%	3.1%	0.7%
China	8.1%	3.3%	5.3%
Japan	1.7%	1.5%	0.9%

\* Q4/Q4 GDP growth. \*\* This estimate under review until next CIO day.  
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 11/11/2022 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	2021			2022			2023			Overweight			Equal weight			Underweight				
				2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023		
Over-weight	15.2%	19.7%	Health Care	16.9	16.0	15.7	Biotechnology	12.2	12.7	13.1	Health Care Providers & Services	18.8	17.6	17.0									
				Health Care Equipment & Supplies	21.6	21.5	20.8																
				Life Sciences Tools & Services	22.5	24.4	23.4																
				Pharmaceuticals	15.6	13.5	13.3																
	7.5%	9.7%	Communication Services	12.3	13.7	13.3	Diversified Telecommunication Services	6.1	7.5	7.5	Wireless Telecommunication Services	61.7	59.6	44.7									
							Entertainment	23.4	22.2	20.0													
							Interactive Media & Services	13.2	15.1	14.6													
						Media	10.0	9.2	9.4														
	11.4%	12.7%	Financials	11.4	13.2	12.8	Banks	8.6	10.3	10.0				Capital Markets	13.2	16.7	16.2						
							Diversified Financial Services	24.7	20.6	20.2				Consumer Finance	6.8	8.2	9.0						
							Insurance	14.6	14.6	13.7													
	2.6%	3.6%	Real Estate	18.1	17.2	16.5	Real Estate Mgmt. & Development	13.2	11.6	11.0													
							REITs	18.6	17.4	16.7													
	5.3%	6.3%	Energy	21.7	9.9	12.5	Energy Equipment & Services	40.2	24.0	18.8	Oil Gas & Consumable Fuels	20.9	9.4	12.1									
	3.0%	3.5%	Utilities	19.4	18.4	17.7	Electric Utilities	21.0	19.2	18.2	Gas Utilities	19.7	19.3	18.0	Water Utilities	35.0	31.7	29.8					
							Multi-Utilities	18.1	17.8	17.4	Independent Power & Renewable E	8.8	9.4	9.4									
Under-weight	26.4%	26.0%	Information Technology	21.3	20.5	19.7	Communications Equipment	15.7	15.1	14.7	Electronic Equipment	20.2	18.6	17.8	Semiconductors	15.0	17.0	17.0					
							IT Services	24.1	20.9	19.9	Software	26.6	24.0	22.6	Technology Hardware Storage & Per	21.7	20.8	20.0					
	8.2%	7.7%	Industrials	25.9	20.1	19.5	Aerospace & Defense	33.0	26.1	24.0					Air Freight & Logistics	11.8	12.2	13.3					
							Airlines	-5.2	21.9	11.7					Building Products	19.7	18.3	19.5					
							Electrical Equipment	22.6	20.1	19.3					Commercial Services & Supplies	34.2	27.2	26.7					
							Industrial Conglomerates	23.1	21.8	20.5					Construction & Engineering	23.1	19.6	16.8					
							Road & Rail	20.6	17.4	17.9					Machinery	20.0	18.4	18.8					
	2.5%	0.0%	Materials	15.0	13.3	15.5									Chemicals	17.1	14.6	16.1					
															Construction Materials	30.3	27.2	25.6					
	6.9%	3.8%	Consumer Staples	21.5	21.5	21.4									Containers & Packaging	13.0	11.1	10.8					
															Metals & Mining	8.9	9.1	14.9					
															Personal Products	29.9	28.4	26.1	Beverages	26.6	26.8	26.2	
	10.9%	6.9%	Consumer Discretionary	24.6	23.6	22.7	Auto Components	21.0	18.7	17.0	Household Durables	6.7	5.8	7.0	Automobiles	25.4	23.3	22.3					
							Hotels Restaurants & Leisure	-1460	53.8	35.3					Distributors	19.1	17.3	17.3					
							Textiles Apparel & Luxury Goods	20.5	21.6	21.0					Internet & Direct Marketing Retail	26.3	37.5	33.9					
Automobiles							25.4	23.3	22.3					Leisure Products	11.1	10.7	10.7						
			Internet Retail	26.3	37.5	33.9								Multiline Retail	16.3	19.7	19.7						
			CD ex Auto &	23.6	20.0	19.7								Specialty Retail	18.5	17.7	18.3						
Aggregate PE: DWS View							Overweight	16.7	16.2	15.5	Equalweight	21.3	15.4	16.6	Underweight	18.2	18.9	19.0					
S&P 500								3749			2020, 2021 & 2022 EPS	207.74	222.00	220.00	2020, 2021 & 2022 PE	18.0	16.9	17.0					
											Bottom-up Consensus EPS	207.64	223.13	232.54	Bottom-up Cons. PE	18.1	16.8	16.1					
														2020, 2021 & 2022 Ex Energy PE	17.6	17.6	17.2						
														Btm-up Cons. Ex Energy PE	17.7	17.8	16.7						

Sector OW	10.21%
Sector UW	-10.21%
Industry OW	18.70%
Industry UW	-18.70%

Macro tilts:	
Cyclicals	-2.97%
Defensive	2.95%
Value	-5.93%
Growth	5.93%
Consumer	-6.61%
Services/experience	0.47%
Disc. Goods	-0.25%
Retailing	-0.65%
Durables	0.43%
Staples Goods/Retail	-1.51%
Commodity	-1.30%
Energy	0.84%
Metals/Chemicals	-2.14%
Capex	3.24%
Capacity additions	1.11%
Productivity	2.13%
Health Care	4.45%
Innovation	3.06%
Marketers	1.64%
Insurers	-0.32%
Financials	1.22%
Up rates/low spreads	2.03%
Capital Markets	-1.88%
Insurance	1.07%
Bond Substitutes	1.78%
Weak FX \$ plays	0.53%
High R&D plays	4.78%
Transports	-0.30%
Geopolitical risk	1.33%
Weak oil prices	-0.53%
Inflation shock	4.81%
Domestic GDP	-2.10%
Global GDP	-4.62%
Consumer TMT	0.40%
Trade sensitive	-1.83%

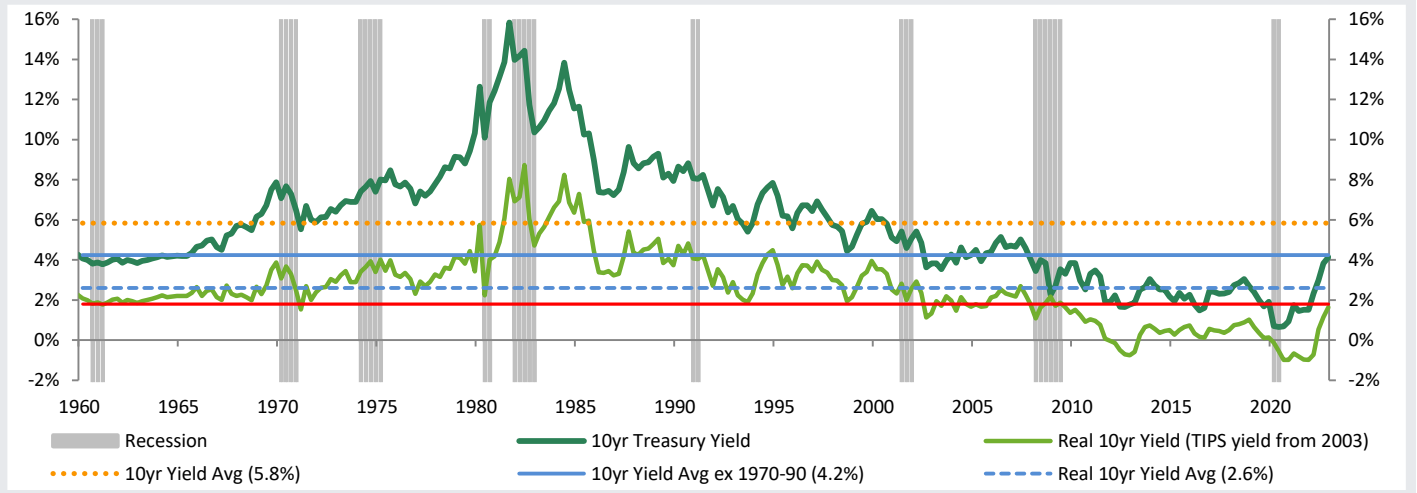
Note: More details on sector earnings forecast and sector intrinsic valuation can be found towards the back of this note.

Price as of 11/9/2022

Source: DWS Investment Management GmbH

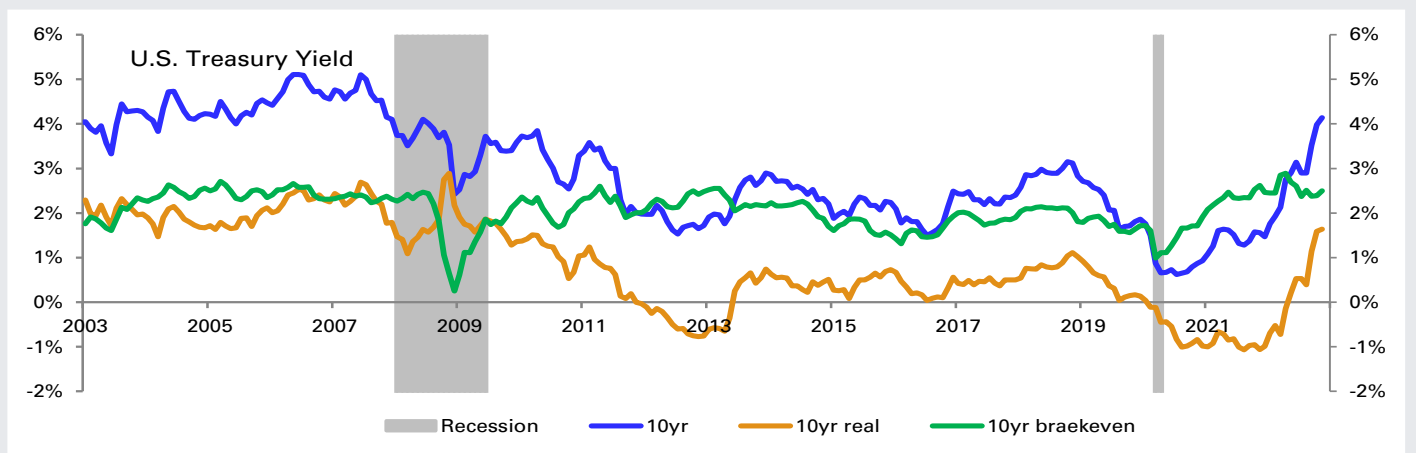


### U.S. 10-year Treasury yields: nominal and real



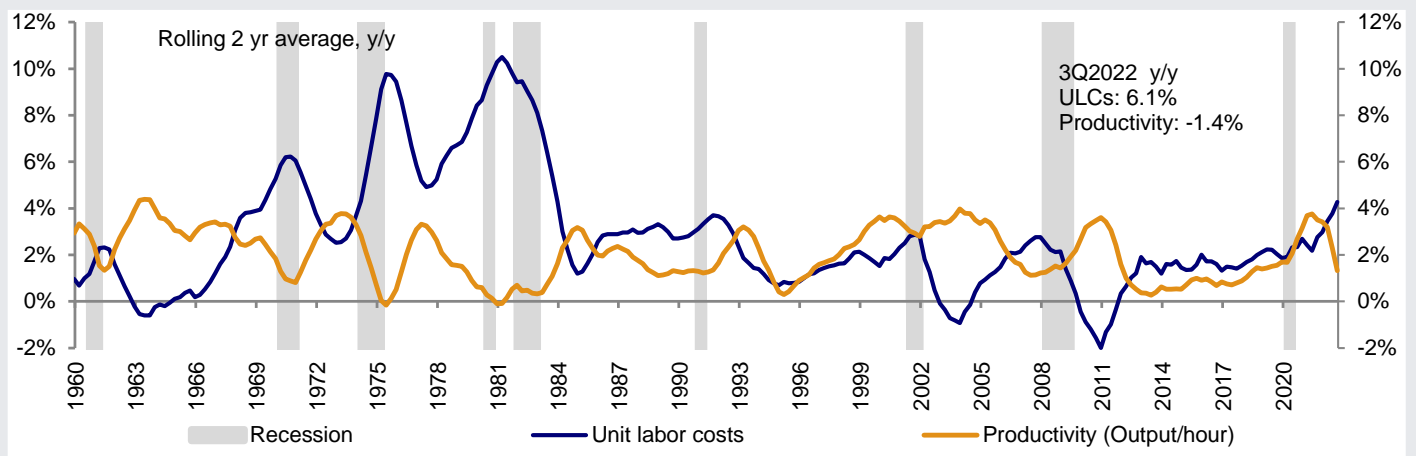
Source: Haver, DWS Investment GmbH as of 11/8/2022. Past performance may not be indicative of future results.

### U.S. 10-year breakeven



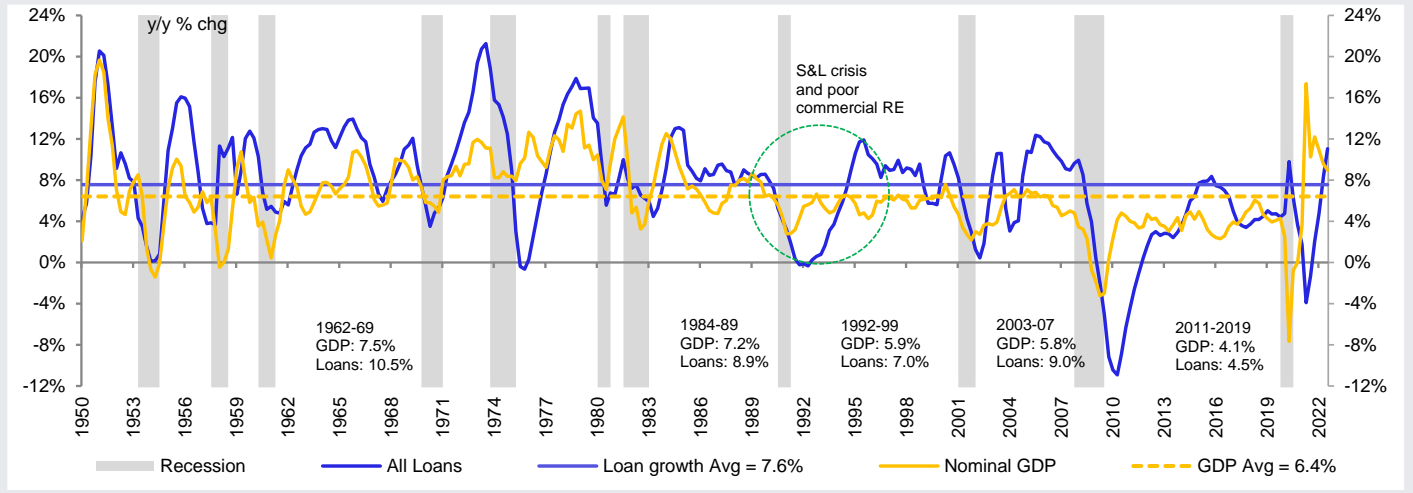
Source: Haver, DWS Investment GmbH as of 11/8/2022. Past performance may not be indicative of future results.

### Productivity vs. Unit Labor Costs



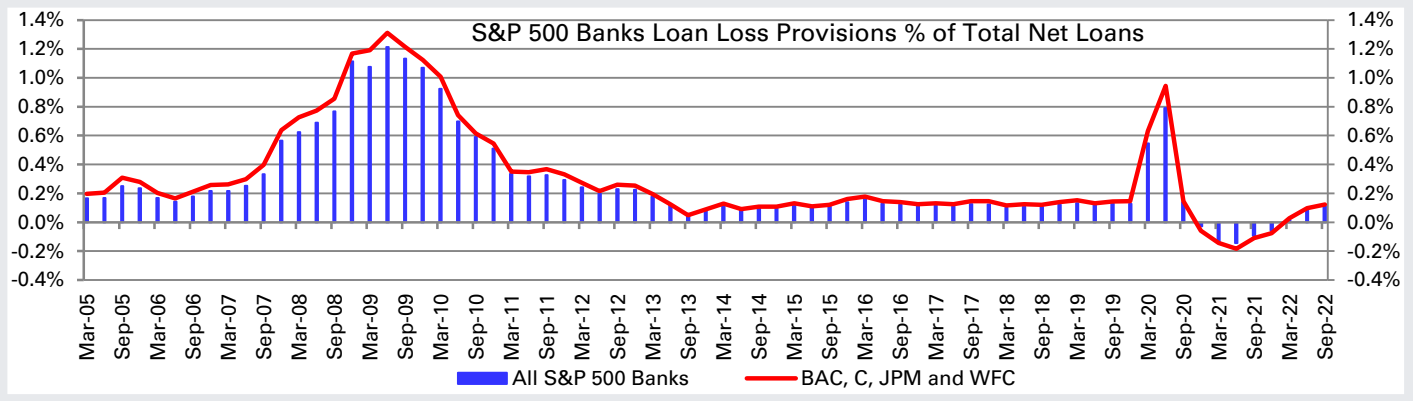
Source: Haver, DWS Investment GmbH as of 3Q2022. Past performance may not be indicative of future results.

### U.S. bank loan growth vs. GDP growth



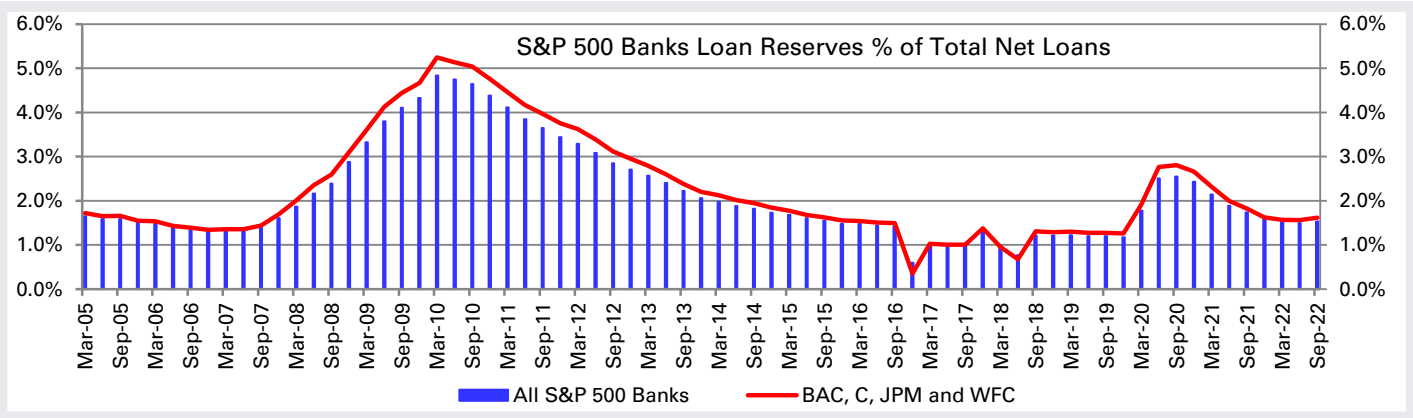
Source: Haver, DWS Investment GmbH as of 3Q2022. Past performance may not be indicative of future results.

### S&P 500 Banks loan loss provisions % total net loans



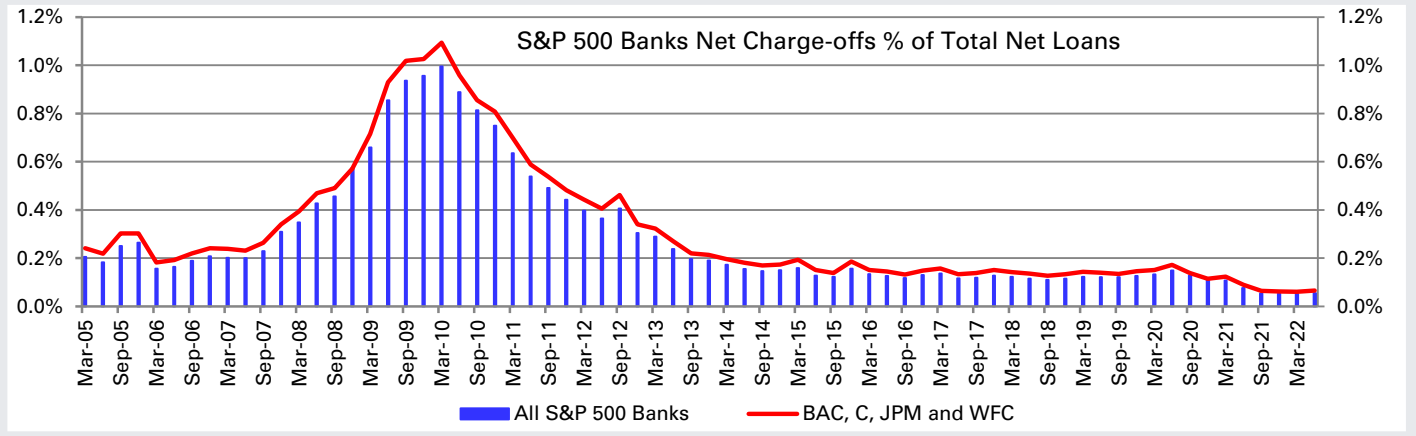
Source: Factset, DWS Investment GmbH as of 3Q2022. Past performance may not be indicative of future results.

### S&P 500 Banks loan reserves % total net loans



Source: Factset, DWS Investment GmbH as of 3Q2022. Past performance may not be indicative of future results.

S&P 500 Banks net charge-offs % total net loans



Source: Factset, DWS Investment GmbH as of 2Q2022. Past performance may not be indicative of future results.

**A wage-price spiral and easy money usually cause broad-based inflation**

Elevated and persistent inflation requires a wage-price spiral to sustain itself. Once price levels adjust for an inflationary shock, such as a surge in commodity prices or excessive money supply, prices should stop rising. However, if rising prices bleed into future expectations, then it can perpetuate itself as a wage-price spiral. A persistent wage-price spiral requires growth in base money supply or loan growth.

### 3Q S&P EPS Reporting Tracker and Estimate Revisions:

450 S&P 500 companies or 92% of index earnings have reported. 61% beat on EPS and 35% missed (the rest is in-line), with an aggregate surprise of -0.9%, -2.3% ex Energy. Historic average beat is +3.3% (2011-2019 average). 46% beat on sales and 28% missed, with an aggregate surprise of +1.4%, +1.4% ex Energy.

Bottom-up blended 3Q EPS is \$55.90, +3.6% y/y. Blended sales growth is +11.1% y/y. Blended pro-forma net margin is 12.6%, vs. 13.1% in 2Q22 and 13.6% a year ago. Bottom-up consensus 2022 EPS is \$223.13. Our estimate is \$222 (55+58+55+54=\$222). Bottom-up consensus 2023 S&P EPS has been cut to \$232.54, our estimate is \$220 (52+55+56+57=\$220).

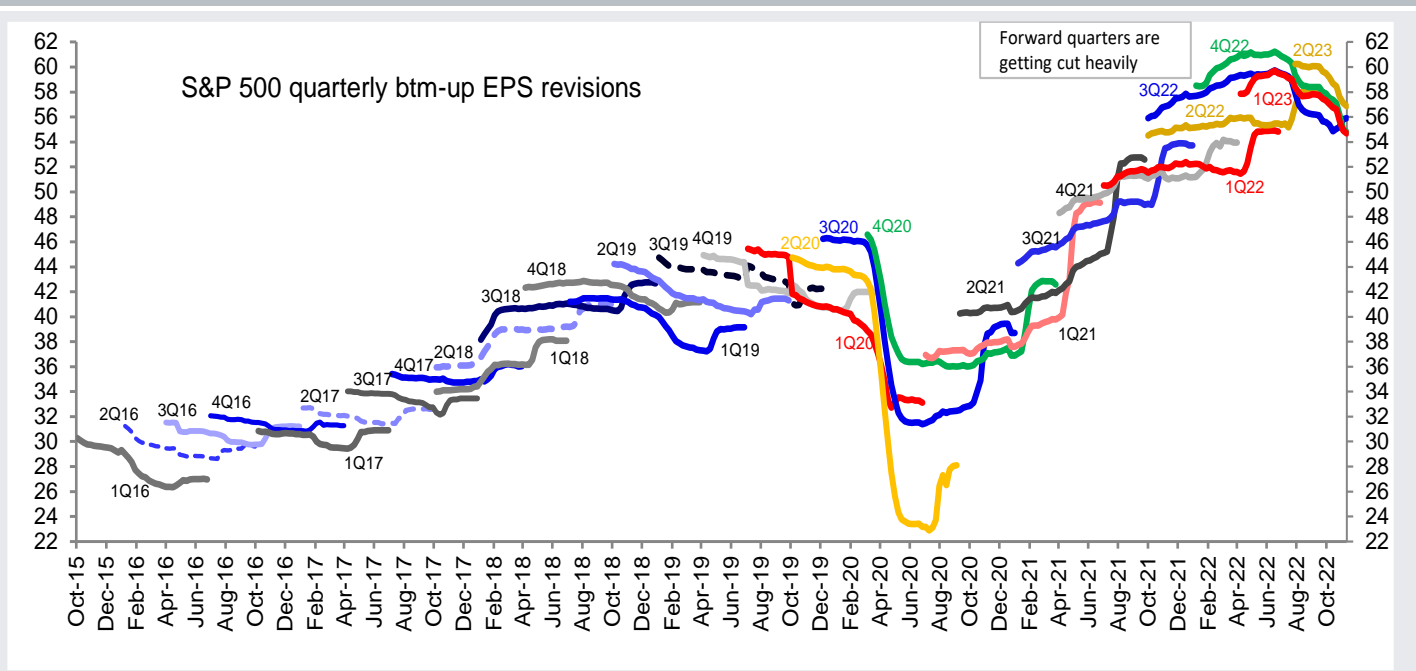
We model trough quarterly S&P EPS of \$52 in 1Q23, down 5-10% from the 1Q22 peak ex. Energy and down 10% from the 2Q22 peak of \$58 with Energy for 4 main reasons: 1) small recession expected for US and Europe over the next couple of quarters followed by slow growth, causing a 5% dip or near \$3 hit to 1Q23 EPS from \$55 in 1Q22, 2) dollar strength that hits S&P EPS from 1Q22 levels by \$1-\$1.50 quarterly through 2023, 3) minimum book profit and buyback taxes of near \$3 annually in 2023, 4) energy profits \$2-3 above 1Q22 levels quarterly in 1H23.

By sector, 3Q blended EPS y/y growth is strongest at Energy (+144% y/y), Industrials (19%), Consumer Discretionary (11%) and Real Estate (5.9%). EPS y/y growth is weakest at Communication Services (-22%), Financials (-17%), Utilities (-9.4%) and Materials (-8.8%).

3Q blended sales y/y growth is strongest at Energy (+50% y/y), Utilities (23%), Real Estate (14%), Consumer Discretionary (13%), Industrials (12%) and Consumer Staples (7.4%). Sales y/y growth is weakest at Communication Services (-1.9%), Financials (4.4%, but banks are a spread or net interest margin business), Tech (5.2%) and Health Care (5.5%).

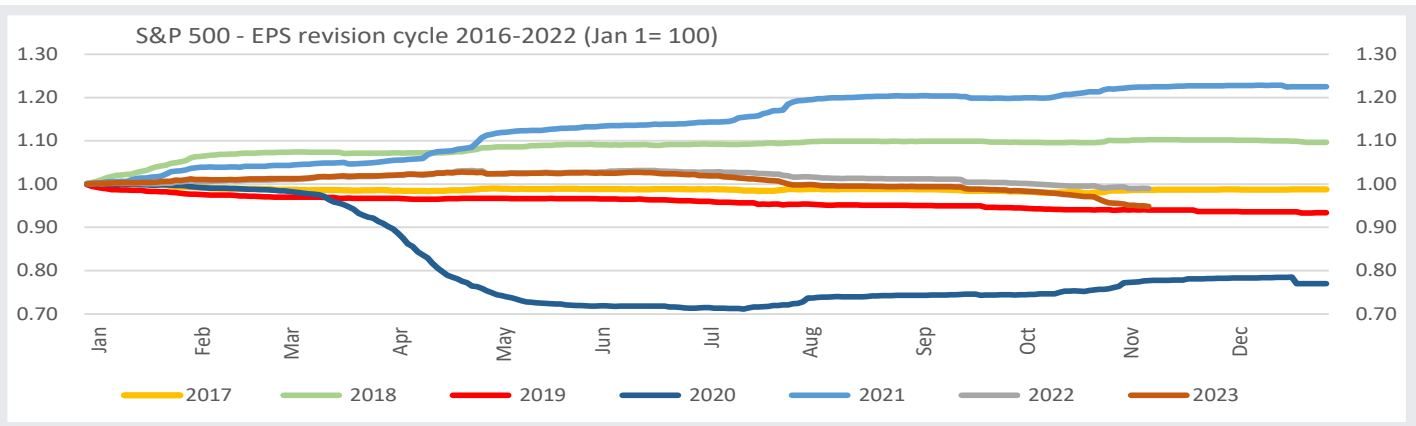
S&P net margins surged to record high of 13.8% last year, led by digital firms, banks and consumer goods producers/retailers. We see some usual recessionary set-backs in net margins. S&P 500 net margins are cyclical, but not mean reverting, they have been rising since mid-1990s for structural reasons.

### S&P 500 quarterly EPS revision



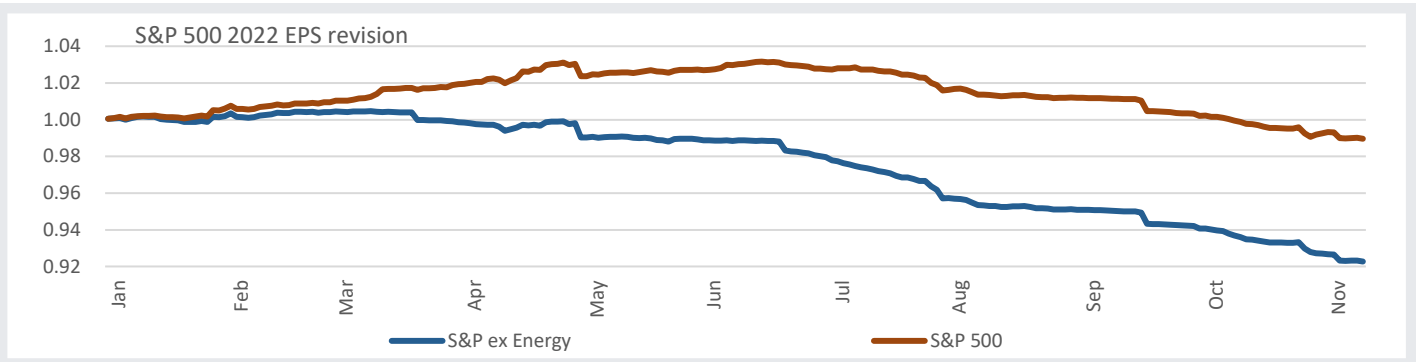
Source: Factset, IBES, DWS Investment GmbH as of 11/9/2022. Past performance may not be indicative of future results.

### S&P 500 annual EPS revision



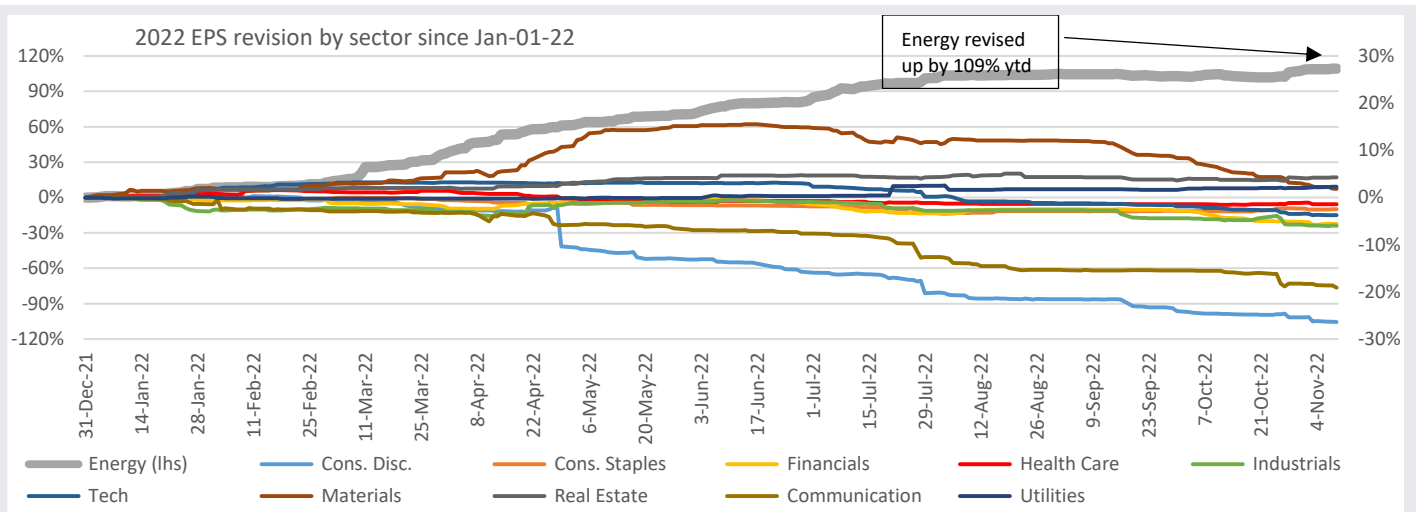
Source: Factset, IBES, DWS Investment GmbH as of 11/9/2022. Past performance may not be indicative of future results.

### S&P 500 2022 EPS revision (ex. Energy)



Source: Factset, IBES, DWS Investment GmbH as of 11/9/2022. Past performance may not be indicative of future results.

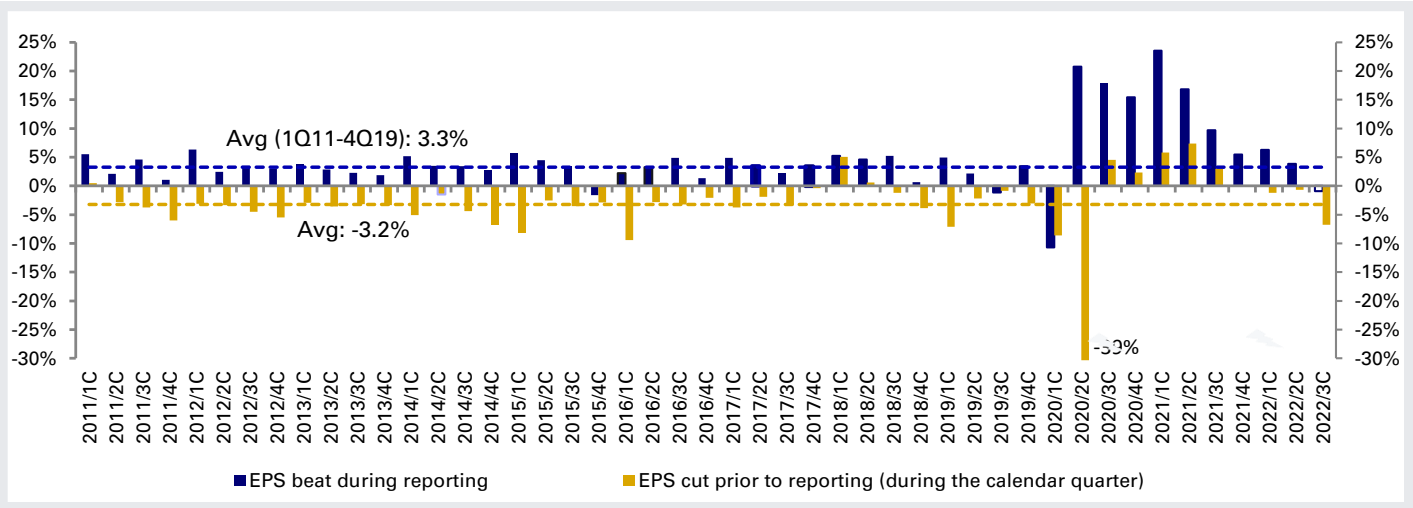
### S&P 500 2022 EPS revision by sector



Source: Factset, IBES, DWS Investment GmbH as of 11/9/2022. Past performance may not be indicative of future results.



### S&P 500: EPS cut during the calendar quarter vs. EPS beat during earnings season



Source: Factset, DWS Investment GmbH as of 11/9/2022. Past performance may not be indicative of future results.

### S&P 500: 3Q22 earnings season summary statistics

	3Q22 Summary (Based on reported companies)										
	% of EPS reported	# Cos reported	EPS (% of co's)		EPS surprise (%)	EPS y/y (%)	Sales (% of co's)		Sales surprise (%)	Sales y/y (%)	
	% beat	% miss	surprise (%)	y/y (%)	% beat	% miss	surprise (%)	y/y (%)			
<b>S&amp;P 500</b>	<b>92.0%</b>	<b>450</b>	<b>61%</b>	<b>35%</b>	<b>-0.9%</b>	<b>3.9%</b>	<b>46%</b>	<b>28%</b>	<b>1.4%</b>	<b>12.2%</b>	
S&P 500 ex. Financials & Real Est	90.5%	354	65%	32%	0.6%	8.6%	49%	29%	0.9%	13.3%	
S&P 500 ex. Energy	90.9%	429	62%	34%	-2.3%	-4.6%	45%	28%	1.4%	8.3%	
S&P ex. Tech	94.4%	390	58%	37%	-1.7%	5.3%	47%	29%	1.5%	12.9%	
S&P ex. Energy, Financials & Real Est	88.9%	333	66%	31%	-0.9%	-1.8%	48%	29%	0.9%	8.8%	
Communication Services	100.0%	25	52%	48%	-7.9%	-22.4%	32%	40%	-0.7%	-1.9%	
Consumer Discretionary	70.0%	40	63%	38%	-6.5%	19.1%	43%	45%	-0.9%	18.6%	
Consumer Staples	86.9%	26	62%	31%	3.8%	1.7%	69%	19%	2.6%	8.4%	
Energy	100.0%	21	48%	52%	9.1%	144%	62%	33%	1.3%	49.9%	
Financials	100.0%	65	48%	48%	-8.3%	-16.9%	46%	32%	4.8%	5.1%	
Health Care	95.8%	59	71%	24%	5.8%	-0.1%	47%	24%	1.7%	5.8%	
Industrials	92.0%	67	73%	21%	-6.8%	17.2%	43%	37%	-0.6%	11.8%	
Information Technology	82.7%	60	78%	20%	3.0%	-2.0%	40%	17%	0.6%	5.8%	
Materials	97.3%	27	37%	56%	-13.6%	-9.4%	37%	44%	-1.6%	5.6%	
Real Estate	98.4%	31	45%	42%	-2.2%	5.9%	13%	6%	-0.2%	13.7%	
Utilities	100.0%	29	59%	41%	-3.9%	-9.4%	93%	3%	13.8%	22.9%	

\* # Beat, # miss and weighted surprise % is based on EPS and sales estimate as of 9/30/2022 (as of 9/1/2022 for pre-season reporters)

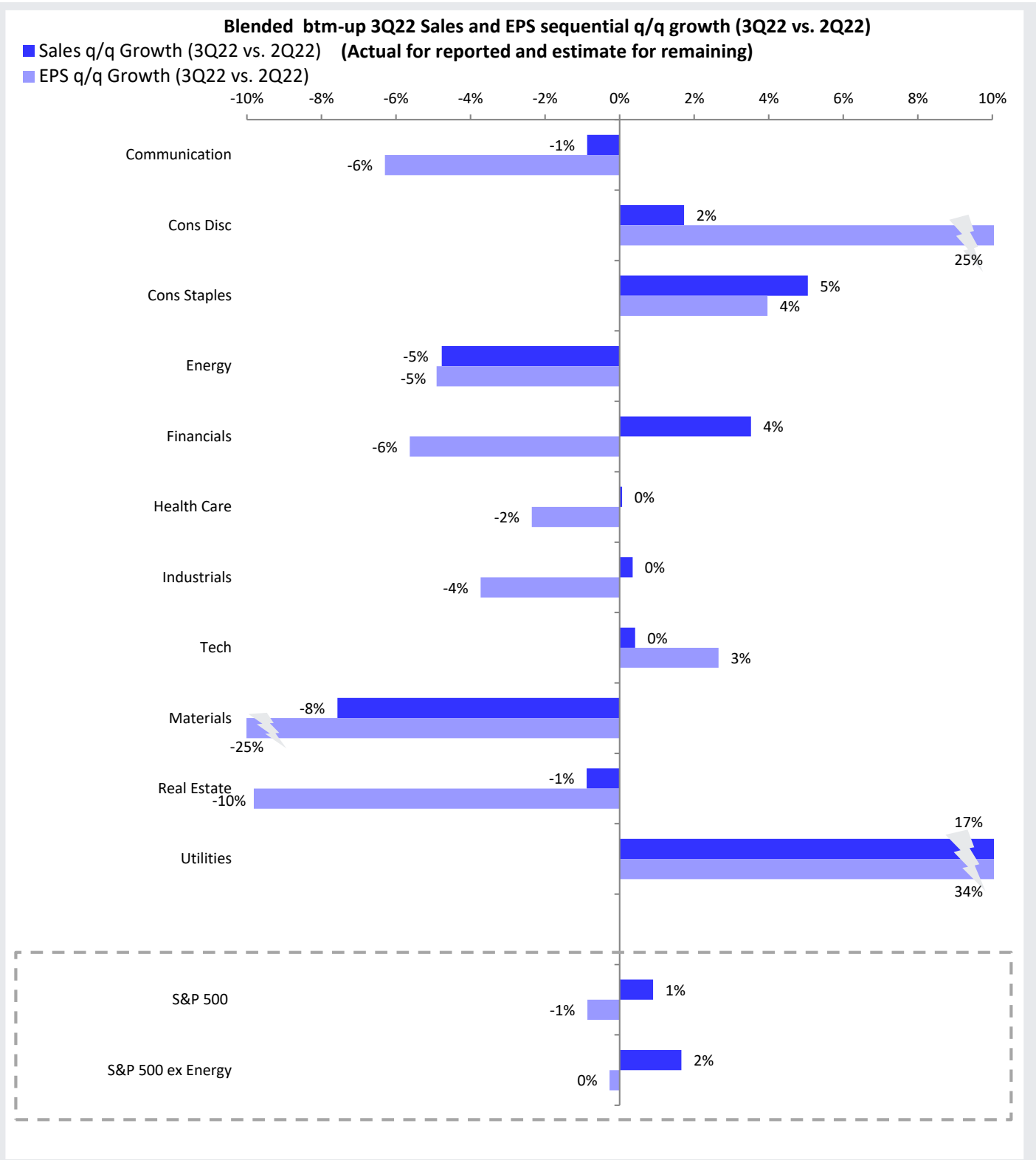
EPS is considered beat or miss when the difference between actual and estimate as of 9/30/2022 is more than \$0.01 (9/1/2022 for pre-season reporters)

Sales is considered beat or miss when the difference between actual and estimate as of 9/30/2022 is more than \$20 million (9/1/2022 for pre-season reporters)

Source: Factset, DWS Investment GmbH as of 11/9/2022. Past performance may not be indicative of future results.

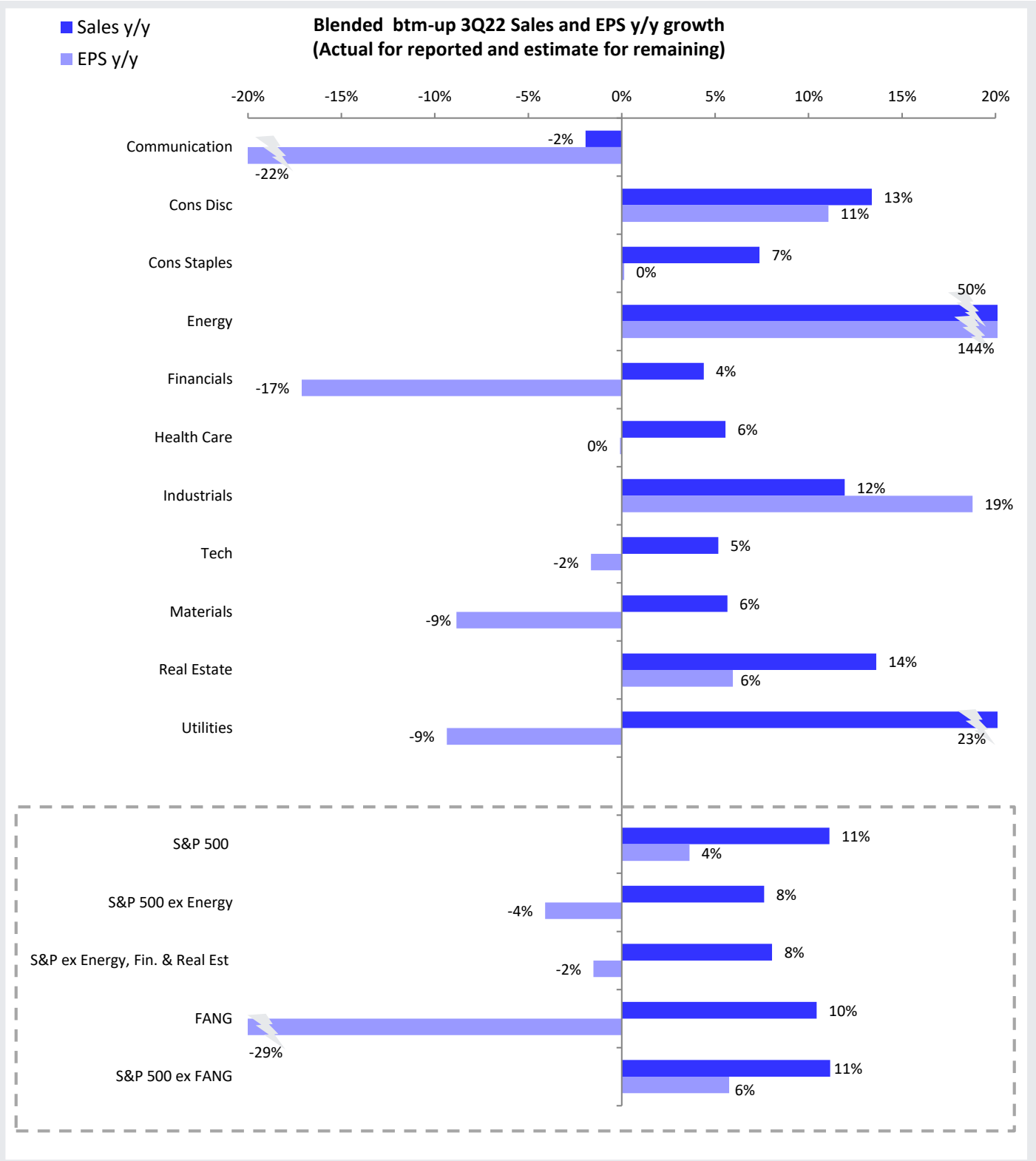


S&P 500: Blended bottom-up 3Q22 Sales and EPS sequential q/q growth by sector: 3Q22 vs. 2Q22



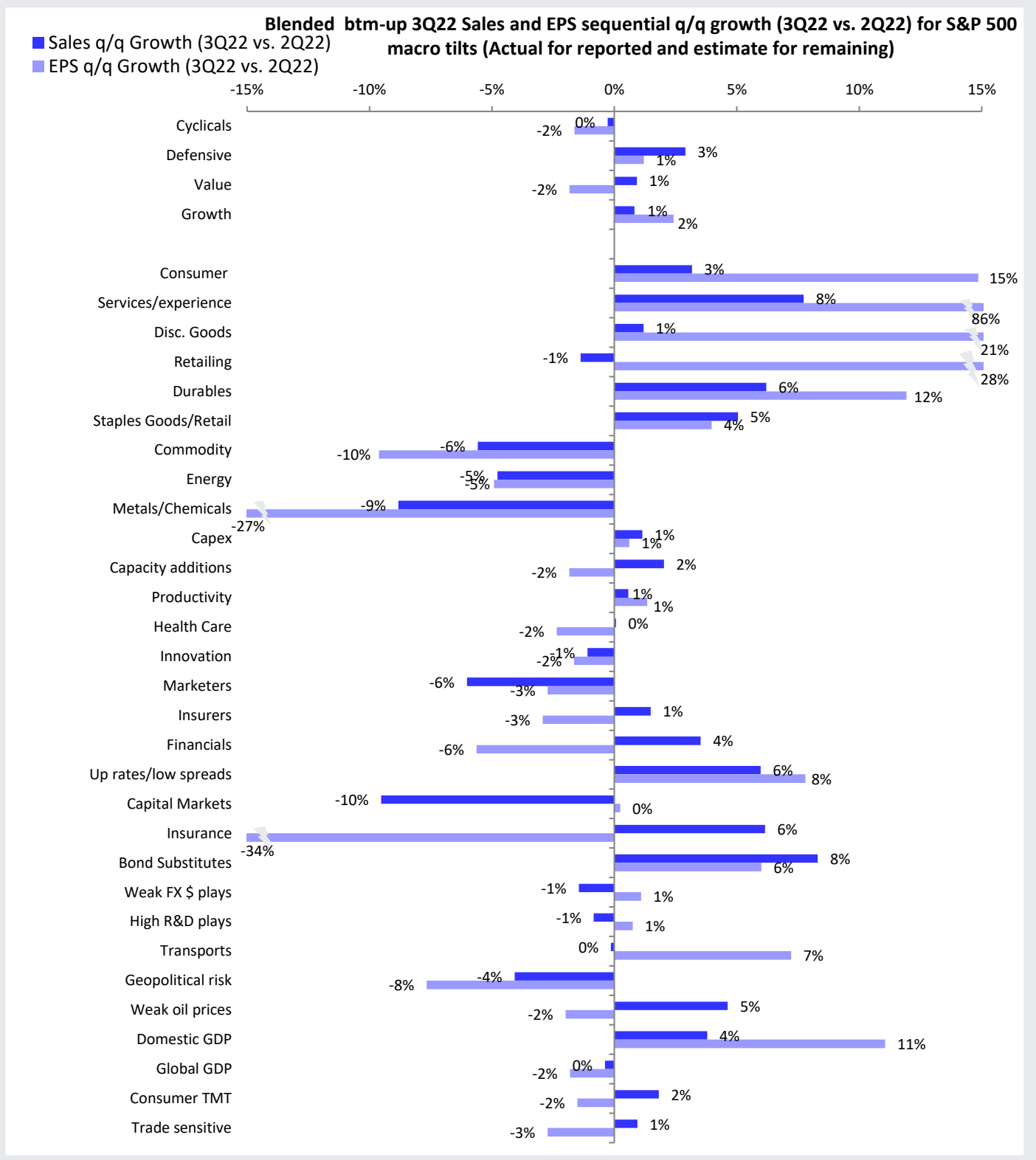
Source: Factset, DWS Investment GmbH as of 11/9/2022. Past performance may not be indicative of future results.

S&P 500: Blended bottom-up 3Q22 Sales and EPS y/y growth by sector: 3Q22 vs. 3Q21



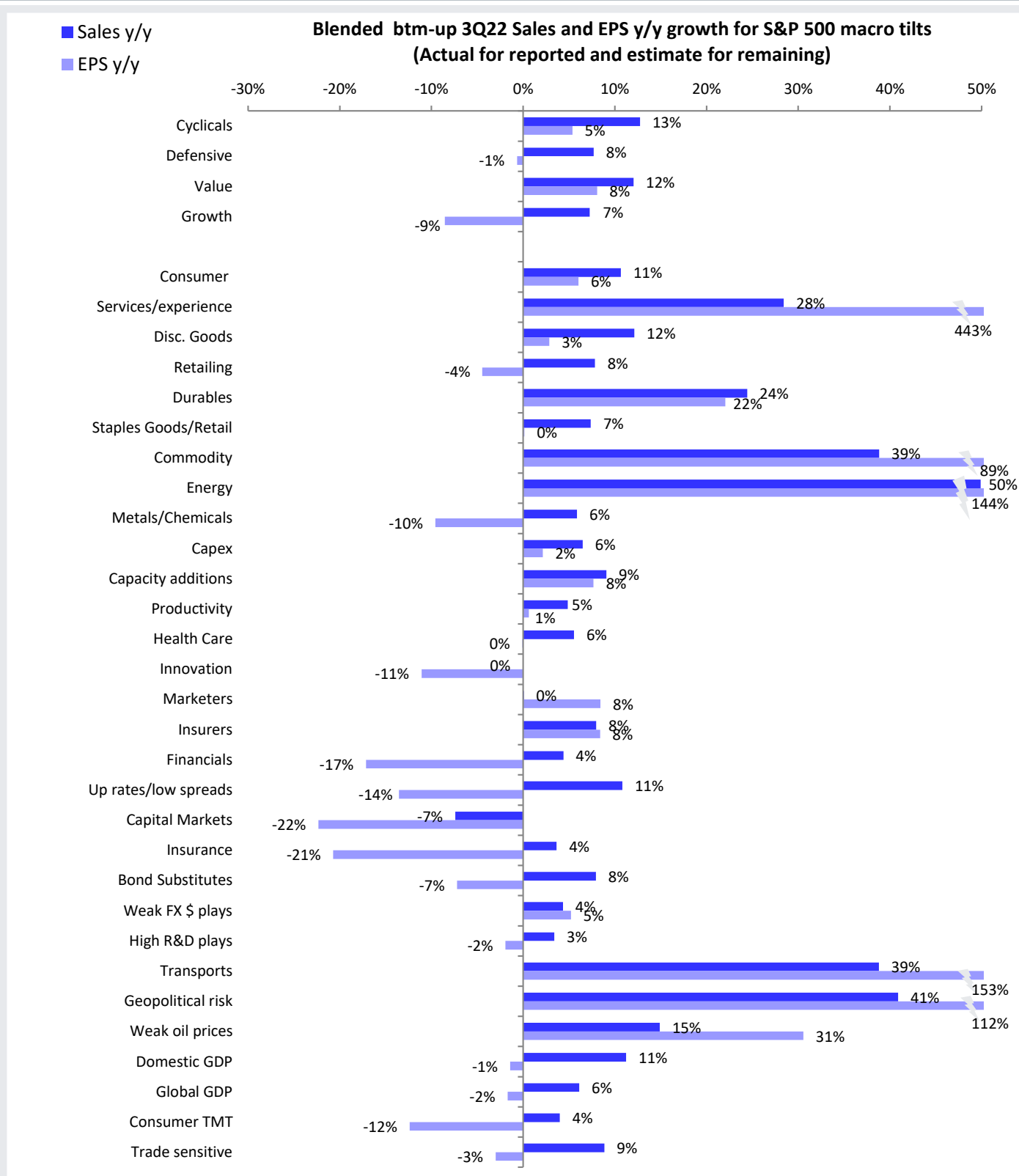
Source: Factset, DWS Investment GmbH as of 11/9/2022. Past performance may not be indicative of future results.

S&P 500: Blended bottom-up 3Q22 Sales and EPS sequential q/q growth for macro tilts: 3Q22 vs. 2Q22



Source: Factset, DWS Investment GmbH as of 11/9/2022. Past performance may not be indicative of future results.

S&P 500: Blended bottom-up 3Q22 Sales and EPS y/y growth for macro tilts: 3Q22 vs. 3Q21



Source: Factset, DWS Investment GmbH as of 11/9/2022. Past performance may not be indicative of future results.

2018 and 2002 are relevant examples of the S&P 500 performing weakly after midterms owing to hawkish Fed in 2018 and second Iraq war looming in 2002. And while the S&P tends to perform well after elections, this is not the case in election years with recessions as occurred in multiple general election years.

**S&P 500 performance statistics in election years**

Time Period	Years with 10%+ Jan-Apr Returns				All Years				Non-recession Years				Mid-term Election Years				Non-recession Mid-term Election Years				Election Years				Non-recession Election Years (Presidential and Mid-term)			
	Avg	Std Dev	Max	Min	Avg	Std Dev	Max	Min	Avg	Std Dev	Max	Min	Avg	Std Dev	Max	Min	Avg	Std Dev	Max	Min	Avg	Std Dev	Max	Min	Avg	Std Dev	Max	Min
Jan	5.9%	4.1%	13.2%	0.2%	0.9%	5.0%	13.2%	-8.6%	1.0%	4.6%	13.2%	-7.1%	-2.0%	3.4%	3.3%	-7.6%	-1.1%	3.1%	3.3%	-6.2%	-0.7%	4.6%	11.8%	-7.6%	0.3%	4.2%	11.8%	-6.2%
Feb	2.6%	3.5%	7.1%	-2.9%	0.2%	3.7%	7.1%	-11.0%	0.3%	3.2%	7.1%	-9.2%	1.0%	4.0%	7.1%	-6.1%	1.4%	3.9%	7.1%	-3.0%	0.5%	3.3%	7.1%	-6.1%	0.9%	3.3%	7.1%	-3.9%
Mar	3.2%	1.0%	5.3%	2.1%	1.2%	3.4%	9.7%	-10.2%	1.5%	2.9%	9.7%	-4.6%	1.1%	3.1%	5.9%	-4.6%	1.7%	3.4%	5.9%	-4.6%	0.6%	3.7%	9.7%	-10.2%	1.5%	3.4%	9.7%	-4.6%
Apr	2.1%	2.9%	7.5%	-1.4%	1.3%	3.8%	9.4%	-9.0%	1.3%	3.3%	8.5%	-6.2%	-0.7%	4.6%	8.5%	-9.0%	0.2%	4.2%	8.5%	-6.2%	0.2%	3.9%	8.5%	-9.0%	0.5%	3.5%	8.5%	-6.2%
May	0.3%	3.7%	5.0%	-6.3%	0.2%	3.7%	9.2%	-8.6%	0.2%	3.6%	9.2%	-8.6%	-1.7%	5.0%	9.2%	-8.6%	-1.9%	4.5%	5.0%	-8.6%	-0.8%	4.2%	9.2%	-8.6%	-1.3%	3.7%	5.0%	-8.6%
Jun	1.4%	3.1%	4.8%	-4.8%	-0.2%	3.3%	5.4%	-8.6%	0.1%	3.2%	5.4%	-8.2%	-2.1%	3.4%	3.9%	-8.2%	-2.0%	4.0%	3.9%	-8.2%	-0.6%	3.7%	4.3%	-8.6%	-0.1%	3.6%	4.3%	-8.2%
Jul	0.6%	4.6%	8.8%	-6.8%	0.6%	4.1%	8.8%	-7.9%	0.7%	4.0%	8.8%	-7.9%	0.1%	5.2%	7.3%	-7.9%	0.4%	5.0%	6.9%	-7.9%	-0.1%	4.1%	7.3%	-7.9%	-0.1%	3.8%	6.9%	-7.9%
Aug	0.7%	5.0%	7.1%	-14.6%	0.1%	4.7%	11.6%	-14.6%	0.4%	4.2%	10.6%	-14.6%	-0.6%	7.4%	11.6%	-14.6%	-0.6%	6.5%	7.1%	-14.6%	0.5%	5.8%	11.6%	-14.6%	0.5%	5.4%	10.6%	-14.6%
Sept	-0.1%	3.7%	6.2%	-8.5%	-0.6%	4.3%	8.8%	-11.9%	0.1%	3.8%	8.8%	-11.0%	-1.8%	6.1%	8.8%	-11.9%	-1.3%	6.1%	8.8%	-11.0%	-0.8%	5.3%	8.8%	-11.9%	0.2%	4.8%	8.8%	-11.0%
Oct	-0.8%	7.1%	8.0%	-21.8%	1.1%	5.9%	16.3%	-21.8%	0.9%	5.1%	10.8%	-21.8%	3.9%	6.1%	16.3%	-9.2%	2.9%	5.0%	8.6%	-9.2%	1.6%	5.9%	16.3%	-16.9%	1.6%	3.7%	8.6%	-9.2%
Nov	0.5%	3.7%	5.9%	-8.5%	1.4%	4.4%	10.2%	-11.4%	1.5%	3.9%	10.2%	-8.5%	2.5%	4.1%	10.2%	-5.3%	2.6%	3.9%	10.2%	-4.0%	1.9%	4.6%	10.2%	-8.0%	1.8%	4.1%	10.2%	-8.0%
Dec	3.1%	4.0%	11.2%	-2.8%	1.5%	3.1%	11.2%	-6.0%	1.7%	3.1%	11.2%	-6.0%	1.1%	3.4%	6.5%	-6.0%	0.8%	3.6%	6.5%	-6.0%	1.0%	3.0%	6.5%	-6.0%	0.8%	3.0%	6.5%	-6.0%
Q1	12.2%	4.6%	21.6%	5.5%	2.3%	7.7%	21.6%	-12.1%	2.9%	6.4%	20.5%	-8.4%	0.1%	6.7%	13.5%	-8.6%	2.0%	6.9%	13.5%	-6.2%	0.5%	6.9%	13.9%	-9.9%	2.6%	6.5%	13.9%	-6.5%
Q2	3.8%	5.0%	14.2%	-3.3%	1.4%	7.4%	16.9%	-21.3%	1.6%	6.7%	16.9%	-21.3%	-4.2%	9.3%	7.1%	-21.3%	-3.4%	9.4%	7.1%	-21.3%	-1.1%	8.0%	11.9%	-21.3%	-0.8%	7.4%	10.4%	-21.3%
Q3	1.1%	6.8%	9.8%	-11.9%	0.2%	8.3%	15.8%	-26.1%	1.1%	6.6%	15.0%	-17.6%	-2.1%	12.3%	15.8%	-26.1%	-1.5%	9.3%	10.7%	-17.6%	-0.3%	9.4%	15.8%	-26.1%	0.5%	6.9%	10.7%	-17.6%
Q4	2.8%	9.3%	20.9%	-23.2%	4.0%	7.7%	20.9%	-23.2%	4.3%	6.8%	20.9%	-23.2%	7.6%	6.7%	20.9%	-6.3%	6.4%	7.3%	20.9%	-6.3%	4.5%	8.1%	20.9%	-22.6%	4.3%	6.3%	20.9%	-8.1%
Jan - Apr	14.5%	4.5%	27.3%	10.6%	3.6%	7.9%	27.3%	-11.4%	3.8%	7.0%	19.1%	-9.4%	-0.6%	7.8%	14.6%	-11.4%	2.1%	7.5%	14.6%	-8.8%	0.6%	7.0%	14.6%	-11.4%	3.1%	6.2%	14.6%	-8.8%
May - Sep	2.6%	6.9%	13.5%	-8.5%	0.6%	9.7%	21.1%	-29.6%	1.0%	8.2%	18.2%	-24.3%	-6.0%	11.3%	5.9%	-29.6%	-5.3%	10.1%	5.9%	-24.3%	-1.8%	10.2%	18.0%	-29.6%	-0.9%	8.1%	5.9%	-24.3%
Oct - Dec	2.8%	9.3%	20.9%	-23.2%	4.0%	7.2%	20.9%	-23.2%	4.5%	6.3%	20.9%	-23.2%	7.6%	6.7%	20.9%	-6.3%	6.4%	7.3%	20.9%	-6.3%	4.5%	8.1%	20.9%	-22.6%	4.3%	6.3%	20.9%	-8.1%
Whole Year	20.4%	8.6%	34.1%	2.0%	8.1%	16.0%	34.1%	-38.5%	10.7%	8.6%	34.1%	-23.4%	0.6%	16.2%	26.7%	-29.7%	3.0%	15.5%	26.7%	-23.4%	3.6%	16.1%	26.7%	-38.5%	6.5%	12.6%	26.7%	-23.4%

Time Period	All Years				Non-recession Years				Non Presidential Election Years				Presidential Election Years				Presidential Election Years ex. Recessions (1960, 1980, 2008)				Presidential Election Years ex. 2008				Presidential Election Years in Recessions (1960, 1980, 2008)			
	Avg	Std Dev	Max	Min	Avg	Std Dev	Max	Min	Avg	Std Dev	Max	Min	Avg	Std Dev	Max	Min	Avg	Std Dev	Max	Min	Avg	Std Dev	Max	Min	Avg	Std Dev	Max	Min
Jan	0.9%	5.0%	13.2%	-8.6%	1.0%	4.6%	13.2%	-7.1%	1.1%	5.0%	13.2%	-8.6%	0.3%	5.3%	13.2%	-7.1%	1.0%	3.9%	11.8%	-5.1%	0.8%	5.2%	11.8%	-7.1%	-2.5%	7.2%	5.8%	-7.1%
Feb	0.2%	3.7%	7.1%	-11.0%	0.3%	3.2%	7.1%	-9.2%	0.3%	4.1%	7.1%	-11.0%	0.1%	2.5%	7.1%	-3.9%	0.3%	2.0%	4.2%	-3.9%	0.3%	2.4%	4.2%	-3.9%	-1.0%	2.2%	0.9%	-3.5%
Mar	1.2%	3.4%	9.7%	-10.2%	1.5%	2.9%	9.7%	-4.6%	1.4%	3.0%	8.5%	-6.4%	0.6%	4.5%	9.7%	-10.2%	1.7%	3.0%	9.7%	-3.3%	0.6%	4.6%	9.7%	-10.2%	-4.1%	5.3%	-0.6%	-10.2%
Apr	1.3%	3.8%	9.4%	-9.0%	1.3%	3.3%	8.5%	-6.2%	1.5%	4.1%	9.4%	-9.0%	1.0%	2.9%	9.4%	-3.1%	0.7%	2.2%	8.2%	-3.1%	0.8%	2.8%	8.2%	-3.1%	2.4%	3.6%	4.8%	-1.8%
May	0.2%	3.7%	9.2%	-8.6%	0.2%	3.6%	9.2%	-8.6%	0.2%	3.9%	9.2%	-8.6%	0.1%	3.0%	9.2%	-6.3%	-0.5%	2.3%	2.3%	-6.3%	0.1%	3.1%	4.7%	-6.3%	2.8%	1.8%	4.7%	-1.1%
Jun	-0.2%	3.3%	5.4%	-8.6%	0.1%	3.2%	5.4%	-8.2%	-0.5%	3.3%	5.4%	-8.2%	0.9%	3.2%	5.4%	-8.6%	1.4%	1.8%	4.3%	-2.2%	1.6%	2.0%	4.3%	-2.2%	-1.3%	6.3%	2.7%	-8.6%
Jul	0.6%	4.1%	8.8%	-7.9%	0.7%	4.0%	8.8%	-7.9%	0.8%	4.4%	8.8%	-7.9%	0.0%	3.0%	8.8%	-4.6%	-0.3%	2.0%	3.9%	-4.6%	0.0%	3.1%	6.5%	-4.6%	1.0%	4.8%	6.5%	-2.5%
Aug	0.1%	4.7%	11.6%	-14.6%	0.4%	4.2%	10.6%	-14.6%	-0.3%	5.0%	11.6%	-14.6%	1.4%	3.5%	11.6%	-3.9%	1.4%	3.2%	10.6%	-3.9%	1.4%	3.6%	10.6%	-3.9%	1.5%	1.0%	2.6%	0.6%
Sept	-0.6%	4.3%	8.8%	-11.9%	0.1%	3.8%	8.8%	-11.0%	-0.9%	4.4%	8.8%	-11.9%	0.2%	4.1%	8.8%	-9.1%	1.4%	2.3%	5.4%	-5.3%	0.9%	3.3%	5.4%	-6.0%	-4.2%	6.0%	2.5%	-9.1%
Oct	1.1%	5.9%	16.3%	-21.8%	0.9%	5.1%	10.8%	-21.8%	1.8%	6.1%	16.3%	-21.8%	-0.9%	4.7%	16.3%	-16.9%	0.2%	1.3%	2.6%	-2.2%	0.3%	1.6%	2.6%	-2.2%	-5.2%	10.2%	1.6%	-16.9%
Nov	1.4%	4.4%	10.2%	-11.4%	1.5%	3.9%	10.2%	-8.5%	1.4%	4.2%	10.2%	-11.4%	1.4%	5.0%	10.2%	-8.0%	1.2%	3.3%	7.3%	-8.0%	2.1%	4.5%	10.2%	-8.0%	2.3%	9.0%	10.2%	-7.5%
Dec	1.5%	3.1%	11.2%	-6.0%	1.7%	3.1%	11.2%	-6.0%	1.7%	3.2%	11.2%	-6.0%	0.9%	2.6%	11.2%	-4.2%	1.0%	1.9%	5.2%	-4.2%	0.9%	2.7%	5.2%	-4.2%	0.7%	4.0%	4.6%	-3.4%
Q1	2.3%	7.7%	21.6%	-12.1%	2.9%	6.4%	20.5%	-8.4%	2.8%	7.9%	21.6%	-12.1%	0.9%	7.0%	16.9%	-9.9%	3.1%	4.9%	13.9%	-6.5%	1.7%	6.5%	13.9%	-7.6%	-7.6%	2.3%	-5.4%	-9.9%
Q2	1.4%	7.4%	16.9%	-21.3%	1.6%	6.7%	16.9%	-21.3%	1.2%	8.1%	16.9%	-21.3%	2.0%	4.7%	15.8%	-3.8%	1.6%	3.2%	10.4%	-3.8%	2.4%	4.6%	11.9%	-3.8%	3.8%	7.6%	11.9%	-3.2%
Q3	0.2%	8.3%	15.8%	-26.1%	1.1%	6.6%	15.0%	-17.6%	-0.3%	9.2%	15.8%	-26.1%	1.6%	4.9%	20.9%	-8.9%	2.4%	2.6%	8.4%	-2.3%	2.3%	4.1%	9.8%	-6.0%	-1.7%	10.1%	9.8%	-8.9%
Q4	4.0%	7.7%	20.9%	-23.2%	4.3%	6.8%	20.9%	-23.2%	4.8%	7.5%	20.9%	-23.2%	1.5%	8.0%	36.2%	-22.6%	2.4%	3.7%	8.7%	-8.1%	3.2%	4.7%	8.7%	-8.1%	-1.9%	17.9%	8.6%	-22.6%
Feb - Aug *	6.0%	13.5%	43.8%	-39.3%	7.4%	12.2%	37.3%	-30.2%	5.7%	15.3%	43.8%	-39.3%	6.7%	6.2%	21.2%	-11.6%	8.0%	5.1%	21.2%	-4.0%	8.1%	5.0%	21.2%	-4.0%	1.5%	9.4%	12.7%	-11.6%
Sep - Oct *	2.6%	16.4%	128.5%	-81.5%	6.5%	14.2%	128.5%	-80.2%	4.6%	15.5%	128.5%	-80.2%	-2.9%	19.0%	60.2%	-81.5%	10.0%	7.6%	60.2%	-30.2%	7.6%	10.2%	60.2%	-32.2%	-42.7%	35.5%	27.7%	-81.5%
Nov - Jan *	16.3%	14.2%	88.2%	-47.2%	18.3%	10.9%	88.2%	-24.2%	16.8%	14.4%	88.2%	-41.6%	14.9%	14.2%	79.3%	-47.2%	17.9%	8.0%	54.4%	-16.6%	20.8%	10.3%	79.3%	-16.6%	3.5%	30.5%	79.3%	-47.2%
Whole Year	8.1%	16.0%	34.1%	-38.5%	10.7%	8.6%	34.1%	-23.4%	8.5%	16.4%	34.1%	-29.7%	6.7%	15.5%	25.8%	-38.5%	9.6%	8.1%	20.3%	-10.1%	9.9%	9.5%	25.8%	-10.1%	-5.2%	32.2%	25.8%	-38.5%

Source: Haver, DWS Investment GmbH as of 10/28/2022. 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 2022	
										2022E	y/y	2023E	y/y	2022E	y/y	2023E	y/y	(\$)	% of 2022
<b>S&amp;P 500 EPS (historical index)</b>	<b>\$118.82</b>	<b>\$117.46</b>	<b>\$118.10</b>	<b>\$132.00</b>	<b>\$161.93</b>	<b>\$162.93</b>	<b>\$139.72</b>	<b>\$208.12</b>	<b>49.0%</b>										
<b>S&amp;P 500 EPS (current constituents)</b>	<b>\$116.42</b>	<b>\$117.21</b>	<b>\$117.46</b>	<b>\$129.27</b>	<b>\$155.86</b>	<b>\$161.35</b>	<b>\$144.07</b>	<b>\$207.74</b>	<b>46.4%</b>	\$223.13	7.4%	\$232.54	4.2%	\$222	6.4%	\$220	-0.9%	\$220	99%
Sector (\$ bn)																			
Communication Services	68.6	79.2	91.9	97.5	124.6	132.2	135.7	188.3	38.8%	167.6	-11.0%	178.7	6.6%	170.0	-9.7%	175.0	2.9%	162.0	95%
Consumer Discretionary	64.1	74.9	83.6	87.7	103.5	101.4	79.7	134.2	68.4%	139.0	3.5%	161.0	15.8%	140.0	4.3%	145.0	3.6%	149.1	106%
Consumer Staples	78.4	76.8	79.2	83.8	90.4	91.1	95.1	104.6	10.0%	106.8	2.1%	112.4	5.2%	104.5	-0.1%	105.0	0.4%	104.5	100%
Energy	93.1	39.0	10.6	36.8	68.6	48.8	-4.8	77.4	1722%	201.4	160.1%	172.0	-14.6%	170.0	119.5%	135.0	-20.6%	129.3	76%
Financials	171.2	186.0	187.6	194.8	241.3	248.1	197.1	326.9	65.9%	278.6	-14.8%	314.2	12.8%	283.5	-13.3%	292.5	3.2%	287.5	101%
Health Care	137.6	152.6	157.5	171.8	188.8	206.8	226.8	293.5	29.4%	308.5	5.1%	298.7	-3.2%	310.0	5.6%	315.0	1.6%	301.4	97%
Industrials	99.4	102.9	97.0	105.7	129.2	123.5	64.7	108.9	68.2%	140.4	28.9%	158.9	13.2%	140.5	29.0%	144.2	2.6%	142.5	101%
Information Technology	176.7	184.1	193.6	228.4	266.5	264.6	296.6	379.8	28.1%	391.7	3.1%	419.0	7.0%	395.0	4.0%	410.0	3.8%	400.0	101%
Materials	24.3	23.4	22.2	28.0	34.9	33.4	31.7	57.9	82.3%	62.3	7.6%	56.3	-9.6%	65.0	12.3%	56.0	-13.8%	55.4	85%
Real Estate	23.5	26.8	29.6	32.6	36.2	37.9	37.7	44.7	18.5%	48.9	9.6%	50.8	3.8%	47.0	5.2%	49.0	4.3%	46.1	98%
Utilities	31.4	31.7	33.9	35.3	38.9	43.0	44.3	47.3	6.8%	48.9	3.5%	52.1	6.5%	50.0	5.8%	52.0	4.0%	50.6	101%
<b>S&amp;P 500</b>	<b>968.1</b>	<b>977.1</b>	<b>986.6</b>	<b>1102.4</b>	<b>1323.0</b>	<b>1330.7</b>	<b>1204.5</b>	<b>1763.4</b>	<b>46.4%</b>	<b>1894.1</b>	<b>7.4%</b>	<b>1974.0</b>	<b>4.2%</b>	<b>1875.5</b>	<b>6.4%</b>	<b>1878.7</b>	<b>0.2%</b>	<b>1828.4</b>	<b>97%</b>
S&P ex. Energy (\$bn)	875.1	938.1	976.0	1065.6	1254.4	1281.9	1209.3	1686.0	39.4%	1692.7	0.4%	1802.1	6.5%	1705.5	1.2%	1743.7	2.2%	1699.1	100%
S&P ex. Tech (\$bn)	791.5	793.0	793.0	874.0	1056.5	1066.1	908.0	1383.7	52.4%	1502.5	8.6%	1555.0	3.5%	1480.5	7.0%	1468.7	-0.8%	1428.3	96%
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
<b>2019A</b>	<b>163</b>	39	41	41	42
<b>2020A</b>	<b>140</b>	33	28	38	42
<b>2021A</b>	<b>210</b>	49	53	54	54
<b>2022E</b>	<b>222</b>	55	58	55	54
<b>2023E</b>	<b>220</b>	52	55	56	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 9/30/2022.

Source: Factset, DWS Investment GmbH as of 11/9/2022. Past performance may not be indicative of future results.



DWS Investment GmbH View: S&P 500 fair value by sector: Assuming a ~5.75% real cost of equity (CoE) for overall S&P 500

	Market Value (\$bn)	Current 2022 PE	2022E Earnings (\$bn)	Normal Ratio	Normal 2022E Earnings	Accounting Quality Adjustment	Fully Adjusted Earnings	Net Debt / Market Cap	Real CoE	Steady State Value	Growth Premium	2022 Start Fair Value (\$bn)	2021E Dividend Yield	2022 End Fair Value (\$bn)	PE on Normal 2022E EPS	2022 end Upside %
Communication Services	2,322	13.7	170.0	95%	162.0	-8%	149.0	15%	5.75%	2,592	0%	2,592	1.9%	2,770	17.1	19%
Consumer Discretionary	3,297	23.6	140.0	106%	149.1	-8%	137.2	12%	5.75%	2,385	32%	3,142	1.1%	3,382	22.7	3%
<i>Automobiles</i>	570	23.3	24.5	110%	27.0	-10%	24.3	19%	6.50%	373	50%	560	0.5%	610	22.6	7%
<i>Internet &amp; Direct Marketing Retail</i>	899	37.5	24.0	110%	26.4	-8%	24.3	1%	5.75%	422	130%	972	0.1%	1,056	40.0	17%
<i>CD ex Auto &amp; Internet Retail</i>	1,829	20.0	91.5	100%	91.5	-8%	84.2	17%	5.75%	1,464	10%	1,610	1.8%	1,723	18.8	-6%
Consumer Staples	2,248	21.5	104.5	100%	104.5	-8%	96.1	13%	5.00%	1,923	0%	1,923	2.6%	2,027	19.4	-10%
Energy	1,682	9.9	170.0	76%	129.3	-10%	116.3	16%	6.25%	1,861	-20%	1,489	3.2%	1,579	12.2	-6%
Financials	3,741	13.2	283.5	101%	287.5	-10%	258.7		6.50%	3,981	-5%	3,782	2.0%	4,065	14.1	9%
Banks	1,294	10.3	125.0	105%	131.3	-10%	118.1		7.00%	1,688	-10%	1,519	3.3%	1,621	12.4	25%
Health Care	4,960	16.0	310.0	97%	301.4	-10%	271.2	9%	5.50%	4,931	0%	4,931	1.5%	5,275	17.5	6%
Industrials	2,817	20.1	140.5	101%	142.5	-8%	131.1	18%	5.75%	2,281	0%	2,281	1.4%	2,449	17.2	-13%
Information Technology	8,079	20.5	395.0	101%	400.0	-5%	380.0	2%	5.75%	6,609	10%	7,270	1.1%	7,824	19.6	-3%
Materials	866	13.3	65.0	85%	55.4	-10%	49.9	17%	6.25%	798	0%	798	2.0%	856	15.4	-1%
Real Estate	807	17.2	47.0	98%	46.1	-8%	42.4	29%	5.00%	848	0%	848	3.5%	887	19.2	10%
Utilities	919	18.4	50.0	101%	50.6	-8%	46.6	60%	5.00%	931	0%	931	3.3%	975	19.3	6%
S&P 500 (\$ bn)	31,739		1875.5	97%	1828.4	-8.2%	1678.6		5.75%	29141	2.9%	29987	1.7%	32089.1	17.6	1%
S&P 500 Index (\$/sh)	3749	16.9	222.0	99%	220.0	-8.2%	202.0	11%	5.75%	3513	0.0%	3513	1.7%	3752	17.1	0%

>5%
between -5% and 5%
<-5%

Source: IBES, DWS Investment GmbH as of 11/9/2022. 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 2022 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	
<b>DWS 2022E S&amp;P 500 EPS</b>	<b>\$222.00</b>	<b>DWS 2022E S&amp;P 500 DPS</b>	<b>\$68.00</b>	DWS 2022E S&P 500 aggregate ROE	21.1%	Fair long-term nominal return on S&P 500 index	8.75%
		2022E dividend payout ratio	31%	2021E end S&P 500 book value per share	\$1,050	Components of estimated fair S&P 500 return:	
<b>DWS "normal 2022E" S&amp;P 500 EPS</b>	<b>\$220.00</b>	<b>DWS "normal 2022E" S&amp;P 500 DPS</b>	<b>\$68.00</b>	DWS "normal 2022E" S&P 500 aggregate ROE	19.2%	+ Long-term real risk free interest rate	1.25%
"Normal 2022E" EPS / 2022E EPS	99%	Normal dividend payout ratio	34%			+ Long-term fair S&P 500 equity risk premium*	4.50%
Accounting quality adjustment to pro forma EPS	-\$18.00	EPS directed to net share repurchases	\$39.00	<b>S&amp;P EPS retained for true reinvestment</b>	<b>47%</b>	<b>= Long-term real S&amp;P 500 cost of equity</b>	<b>5.75%</b>
		Normal share repurchase payout ratio	19%	<b>Estimated ROE on reinvested S&amp;P EPS</b>	<b>8.75%</b>	+ Long-term inflation forecast	3.00%
<b>Normal 2022E S&amp;P 500 EPS fair to capitalize</b>	<b>\$202</b>	Total payout of S&P 500 EPS	\$107.00	<b>Economic margin (EM) or ROE-CoE</b>	<b>0.00%</b>	<b>= S&amp;P 500 nominal cost of equity</b>	<b>8.75%</b>
Key principle: steady-state value = normal EPS / real CoE		Total payout ratio of normal and quality adj. EPS	53%	Sources of long-term earnings growth:		* S&P 500 ERP history 300-400bps, w/ real CoE @ 5% - 6.5%	
				+ Long-term inflation forecast	3.00%	<b>Fair S&amp;P 500 Market Value and Book Value Multiple</b>	
<u>S&amp;P 500 EPS Capitalization Valuation</u>		<u>S&amp;P 500 DPS Discount Model</u>		+ Fair return on true reinvestment	2.70%	2021E end S&P 500 book value per share	\$1,050
Normal EPS / (real CoE - (EM/payout) - EM):		Normal DPS / (nominal CoE - DPS growth):		+ Value added return on true reinvestment	0.00%	Fair PB = Fair PE * normal aggregate ROE	3.35
S&P 500 intrinsic value at 2022 start	3513	S&P 500 intrinsic value at 2022 start	3513	= Long-term earnings growth	5.70%	Fair PE =(inc ROE-g)/(inc real ROE*(real CoE-real g))	17.4
<b>S&amp;P 500 intrinsic value at 2022 end</b>	<b>3752</b>	S&P 500 intrinsic value at 2022 end	3752	+ Growth from net share repurchases	1.11%	<b>= Long-term S&amp;P 500 fair value of book at 2022 start</b>	<b>3513</b>
Implied fair fwd PE in early 2022 on 2022E \$222 EPS	15.8	Implied fair forward yield on 2022E DPS of \$68.0	1.94%	<b>= Long-term S&amp;P 500 EPS/DPS growth</b>	<b>6.81%</b>	Implied S&P 500 fair value of book at 2022 start	3513
Implied fair trailing PE at 2022 end on 2022E \$222 EPS	16.9	Implied fair trailing yield on 2022E DPS of \$68.0	1.81%	+ Fair normal dividend yield	1.94%	Steady-state PB = normal agg. ROE / real CoE	3.35
				<b>= Total long-term return at constant PE</b>	<b>8.75%</b>	Confirmed by fair steady-state PE = 1 / real CoE	17.4
Normal EPS / (real CoE-value added EPS growth)	3513	DPS discount model using true DPS (all payout)	3513	Value added growth premium in fair value est.	0%	Normal 2022E economic profit per share	\$141.63

### 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 2022E S&P 500 EPS				
		\$210	\$215	\$220	\$225	\$230
Real	5.25%	4215	4348	4482	4617	4754
cost of	5.50%	3862	3973	4084	4197	4309
equity	5.75%	3563	3658	3752	3847	3942
	6.00%	3308	3390	3471	3552	3632
	6.25%	3088	3158	3229	3299	3368

Source: DWS Investment Management GmbH

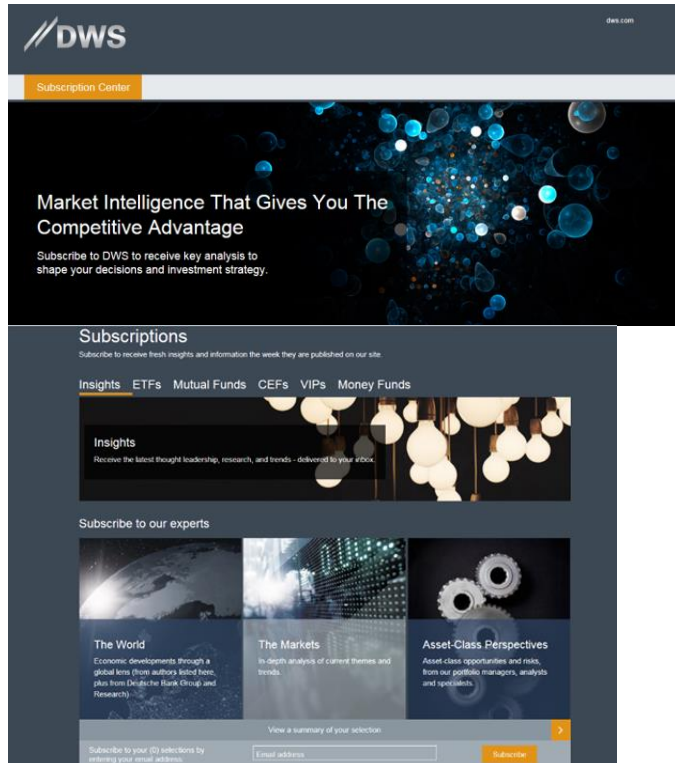
Optimistic 2023 end 10yr yield outlook: 2.5% inflation expectation + 1% overnight real rate + 0.75% inflation risk premium - 0.5% risk asset hedge = 3.75%

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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