

GOAL Kickstart

US small cap rotation triggered by macro, boosted by positioning

Russell 2000 has recently recorded the largest two-week rally against Nasdaq 100 since 2002 ([Exhibit 1](#)). The rotation was likely triggered by the front-end rates rally following the [soft US CPI print](#) and weaker US labour market data. The correlation of front-end rates with US small caps has been more consistently negative since mid 2023, while that of US large caps and tech stocks turned sharply positive as they sold-off over the past two weeks ([Exhibit 2](#)).

While the dovish repricing can help explain the direction, it does not alone explain the size of Russell 2000 rally. Indeed, small caps outperformed across regions, but their relative return has been much smaller than in the US ([Exhibit 3](#)). Easing financial conditions supported weak balance sheet companies as well as USD HY. At the same time, the underperformance of non-US cyclicals vs. defs and copper vs. gold reflected markets repricing lower non-US growth expectations, which likely hampered a larger rally in small caps outside the US. Our US strategists highlighted the [steady US growth data, higher prediction market probability of a Republican sweep and narrowing consensus growth premium of large-cap stocks](#) as potential tailwinds for Russell vs. S&P 500. Investors have also become more concerned about the [market concentration into big tech](#) and

[the size of future returns on AI investments](#).

A shift in extreme positioning likely contributed to the size of the Russell vs. Nasdaq move, too. Looking at CFTC data, positioning in Russell had been falling YTD and was neutral for asset managers and quite short for leveraged funds (respectively 44th and 15th 5y percentile) right before the CPI print but turned more bullish over the following week ([Exhibit 4](#)). On the other hand, the positioning in Nasdaq was and has remained quite bullish. Since 2020, the Russell positioning of asset managers has closely matched the change in USD HY yields, with Russell positioning turning more bullish as HY yields decreased ([Exhibit 5](#)). This year the positioning turned more bearish despite falling cost of debt, but the gap partially closed last week. The sharp rotation also resulted in a spike in implied vol for both Russell and Nasdaq. That said, Russell options have shown a more bullish option positioning with both call skew and spot/vol correlation close to all-time highs ([Exhibit 6](#)).

We [recently shifted neutral into the summer in our asset allocation](#). While we remain mildly pro-risk for 12m, risk of a setback in the summer is higher due to the combination of weaker growth data, already more dovish central bank expectations and rising policy uncertainty into the US

Andrea Ferrario

+44(20)7552-4353 |
andrea.ferrario@gs.com
Goldman Sachs International

Christian Mueller-Glissmann, CFA

+44(20)7774-1714 | christian.mueller-glissmann@gs.com
Goldman Sachs International

Marcus von Scheele

+44(20)7774-7676 |
marcus.vonscheele@gs.com
Goldman Sachs International

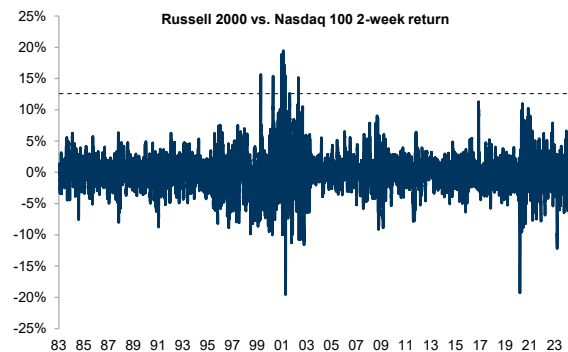
Peter Oppenheimer

+44(20)7552-5782 |
peter.oppenheimer@gs.com
Goldman Sachs International

elections. We are Neutral across the main equity regions, but we like UK equities, both FTSE 100 and FTSE 250, due to potential political tailwinds for domestic growth but also to FTSE 100's embedded hedge for US elections. Our US strategists think the recent small-cap outperformance could persist unless the macro changes or 2Q results for the mega-cap Tech stocks surprise to the upside.

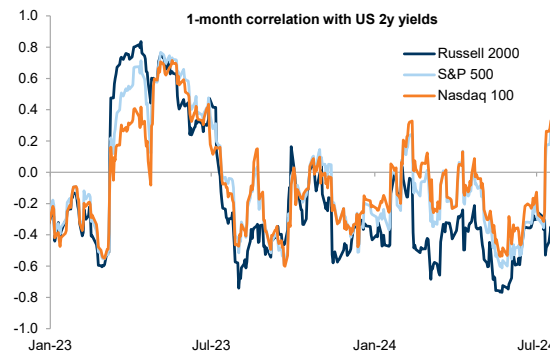
US small cap rotation triggered by macro, boosted by positioning

Exhibit 1: One of the largest moves in Russell vs Nasdaq



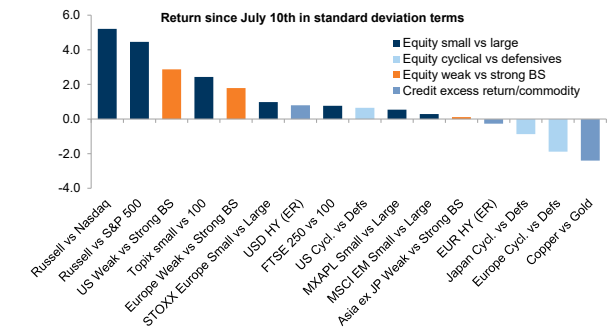
Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 2: Rates relief likely trigger of the Russell rally



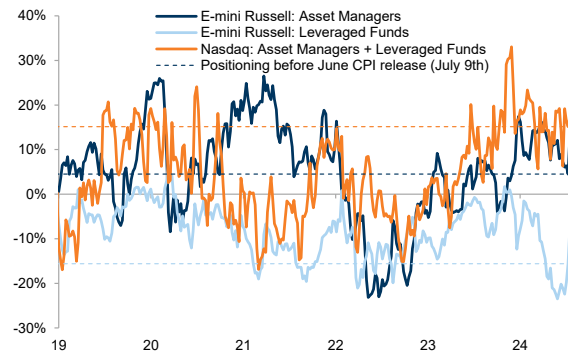
Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 3: US small caps had the largest rally, while non-US cyclicals lagged



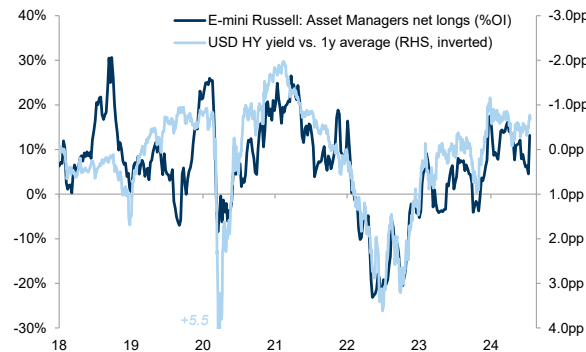
Source: Datastream, Haver Analytics, Goldman Sachs Global Investment Research

Exhibit 4: Positioning likely exacerbated the move
CFTC COT net long positions as % of OI



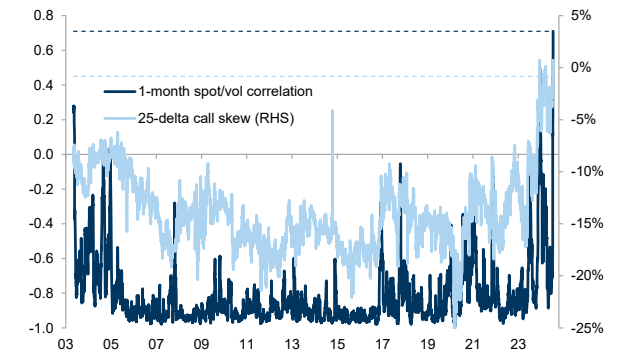
Source: Haver Analytics, Goldman Sachs Global Investment Research

Exhibit 5: Russell positioning has correlated with HY yields



Source: Haver Analytics, Goldman Sachs Global Investment Research

Exhibit 6: Russell option prices suggest a bullish shift
Russell 2000 3-month implied vol



Source: Goldman Sachs FICC and Equities, Goldman Sachs Global Investment Research

Cross-asset: Forecasts

Exhibit 7: GOAL asset allocation recommendations and GS cross-asset forecasts

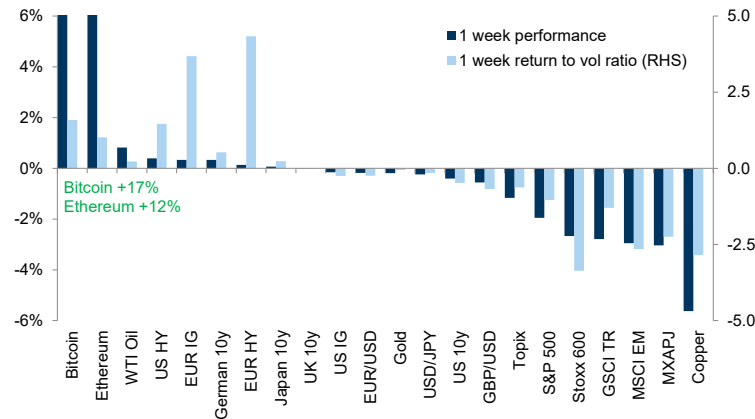
	Allocation Weighting		Current Level	Forecasts			Forecast Upside/Downside (%)		
	3m	12m		3m	6m	12 m	3m	6m	12 m
Equities	N	OW			Index level			Total Return	
S&P 500 (\$)	N	N	5505	5400	5600	5700	-1.6	2.4	4.9
Stoxx Europe 600 (€)	N	N	510	510	530	540	0.9	5.7	9.4
MSCI Asia-Pacific Ex-Japan (\$)	N	N	569	570	595	615	1.5	6.0	9.9
Topix (¥)	N	N	2861	2800	2800	2900	-2.0	-1.8	2.0
10 Year Government Bonds	N	N			Yield (%)			Total Return	
US	N	N	4.20	4.25	4.25	4.19	0.7	1.7	4.3
Germany	OW	OW	2.46	2.25	2.25	2.18	2.7	3.3	5.2
Japan	UW	UW	1.04	1.13	1.29	1.62	0.4	-0.8	-3.3
UK	OW	OW	4.07	3.79	3.75	3.75	3.6	5.0	7.0
Corporate Bonds	N	UW			Spread			Total Return	
Bloomberg Barclays US IG	N	N	91	90	90	90	1.3	2.6	5.6
Bloomberg Barclays US HY	N	N	303	293	291	291	1.9	3.7	7.3
iBoxx EUR IG	N	N	124	120	120	120	1.9	2.9	5.0
BAML EUR HY	N	N	339	338	336	336	1.5	2.5	4.6
JP Morgan EMBI Div.	N	N	392	389	386	380	1.9	3.9	8.4
Commodities	N	OW			Spot price			Spot Return	
WTI (\$/bbl)	-	-	81	81	79	76	-0.5	-3.0	-6.7
Brent (\$/bbl)	-	-	84	86	84	81	2.3	-0.1	-3.7
Copper (\$/mt)	-	-	9,179	10,500	11,500	13,000	14.4	25.3	41.6
Gold (\$/troy oz)	-	-	2,407	2,600	2,700	2,700	8.0	12.2	12.2
FX	-	-			Spot rate			Spot Return	
EUR/USD	-	-	1.09	1.05	1.05	1.08	-3.6	-3.6	-0.8
USD/JPY	-	-	157.3	155	155	150	-1.5	-1.5	-4.7
GBP/USD	-	-	1.29	1.27	1.27	1.32	-1.7	-1.7	2.2
AUD/USD	-	-	0.67	0.63	0.65	0.67	-5.9	-2.9	0.1
USD/BRL	-	-	5.55	5.10	5.00	4.90	-8.1	-9.9	-11.7
USD/INR	-	-	83.7	84.0	83.5	82.5	0.4	-0.2	-1.4
USD/CNY	-	-	7.27	7.35	7.40	7.40	1.1	1.8	1.8
Cash	N	N			Spot rate			Total Return	
US 3-month Tbill	-	-	-	-	-	-	1.34	2.60	4.87
Germany 3-month Bubills	-	-	-	-	-	-	0.87	1.69	3.16

Source: Bloomberg, Datastream, Bloomberg-Barclays, ICE-BAML, iBoxx, Goldman Sachs Global Investment Research

Cross-asset: Weekly and YTD performance, absolute and risk-adjusted

Exhibit 8: Local currency total returns and return to vol ratios over the past week

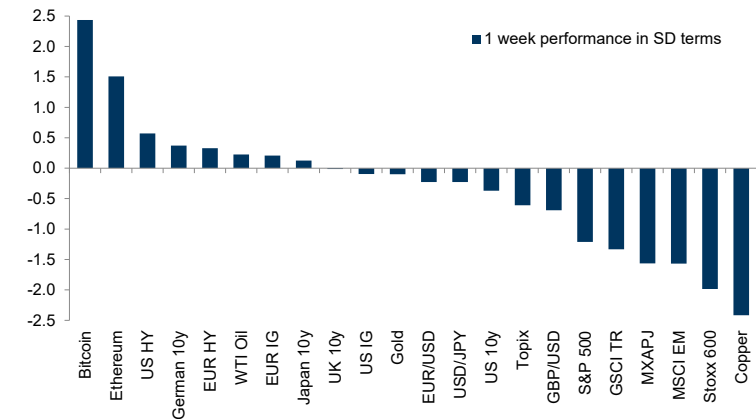
Weekly returns, return to vol ratios based on weekly volatility



Source: Datastream, iBoxx, Goldman Sachs Global Investment Research

Exhibit 9: Local currency total returns in standard deviation terms

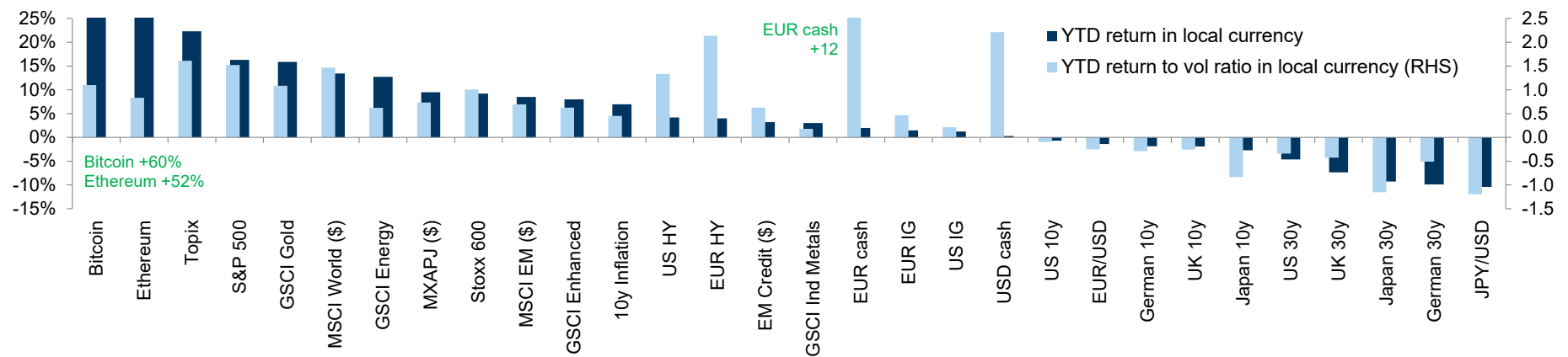
1-week performance in rolling 12m standard deviation terms



Source: Datastream, iBoxx, Goldman Sachs Global Investment Research

Exhibit 10: Local currency returns and return to vol ratios

YTD returns

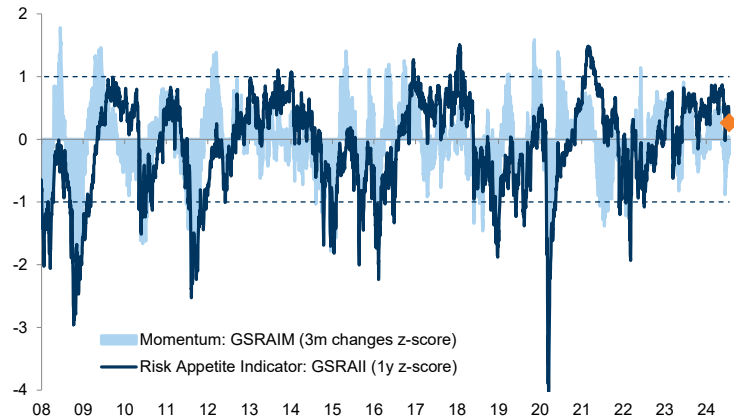


Source: Datastream, iBoxx, Goldman Sachs Global Investment Research

Cross-asset: Risk appetite indicator

Exhibit 11: Risk appetite indicator level and momentum factors

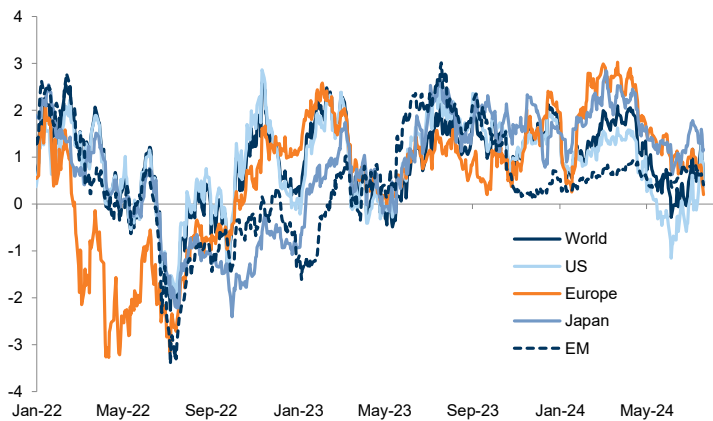
See July 2016 GOAL for construction details



Source: Goldman Sachs Global Investment Research

Exhibit 13: Cyclical vs. defensives 1-year rolling z-score across regions

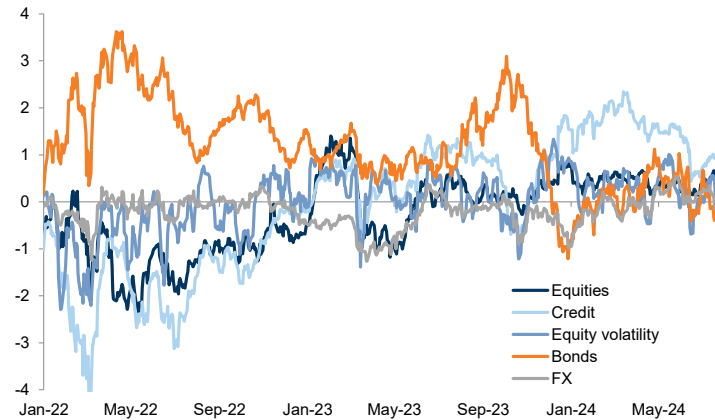
See July 2016 GOAL for construction details



Source: Goldman Sachs Global Investment Research

Exhibit 12: Risk appetite indicators for different asset classes

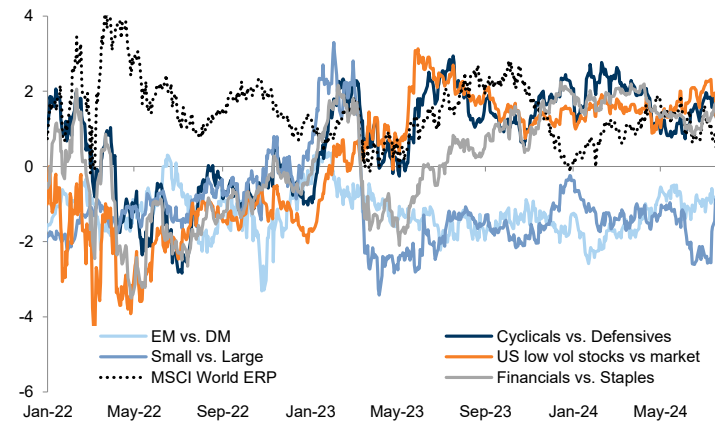
See July 2016 GOAL for construction details



Source: Goldman Sachs Global Investment Research

Exhibit 14: Sub-components of equity risk appetite indicator

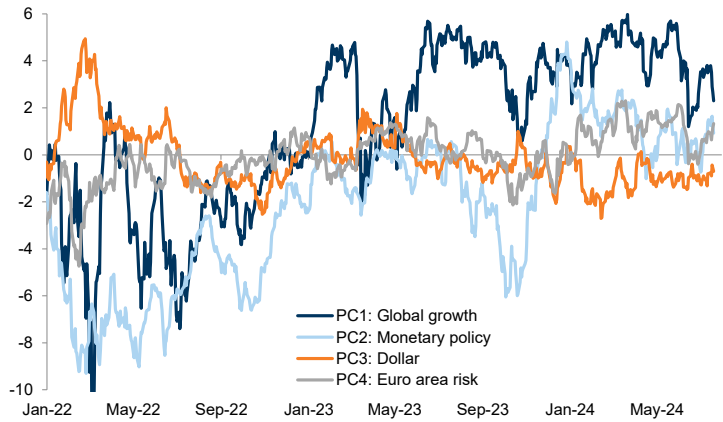
See July 2016 GOAL for construction details



Source: Goldman Sachs Global Investment Research

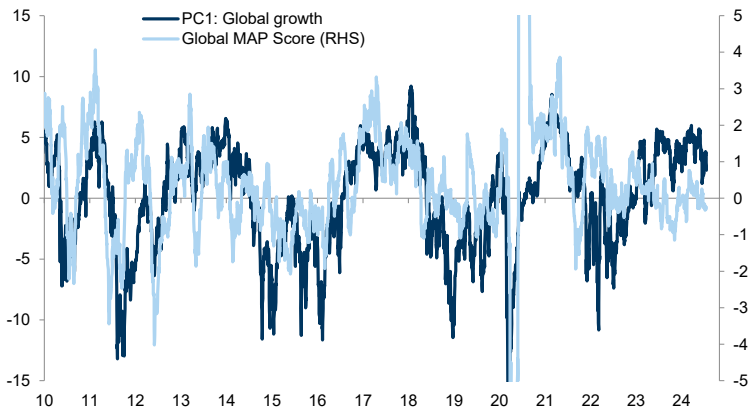
Cross-asset: Risk Appetite principal component analysis

Exhibit 15: GS RAI principal component
See April 2019 GOAL for construction details



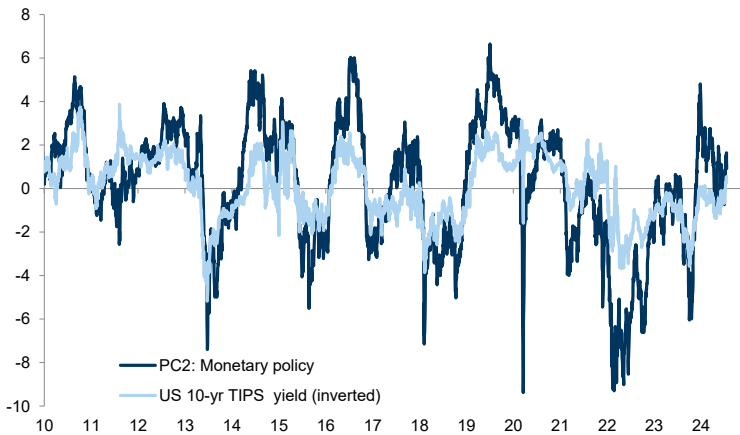
Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 16: PC1: Global growth factor vs. Global MAP Score



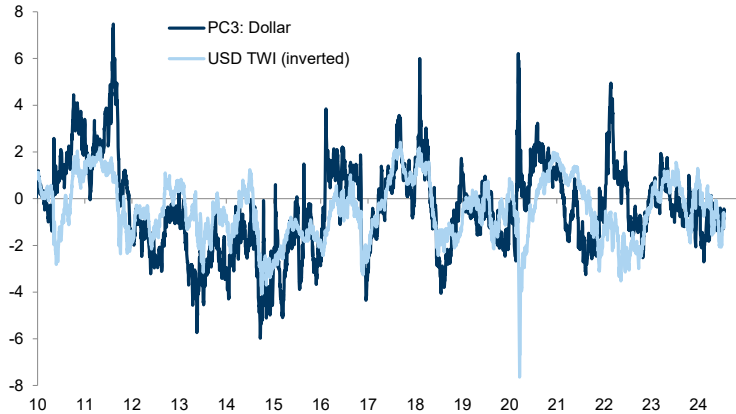
Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 17: PC2: Monetary policy factor vs. US 10-year TIPS yield



Source: Datastream, Goldman Sachs Global Investment Research

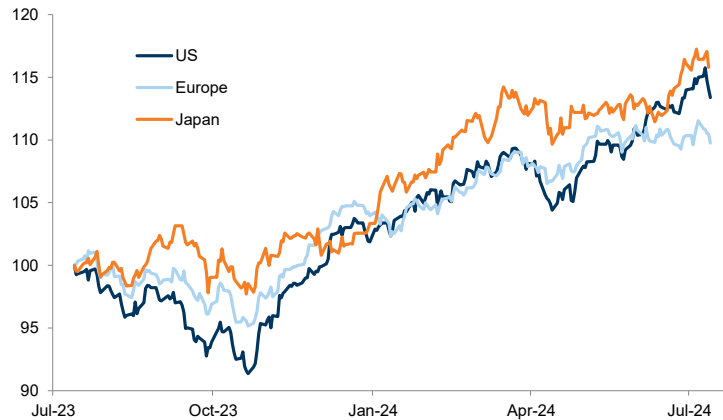
Exhibit 18: PC3: Dollar factor vs. USD TWI



Source: Datastream, Goldman Sachs Global Investment Research

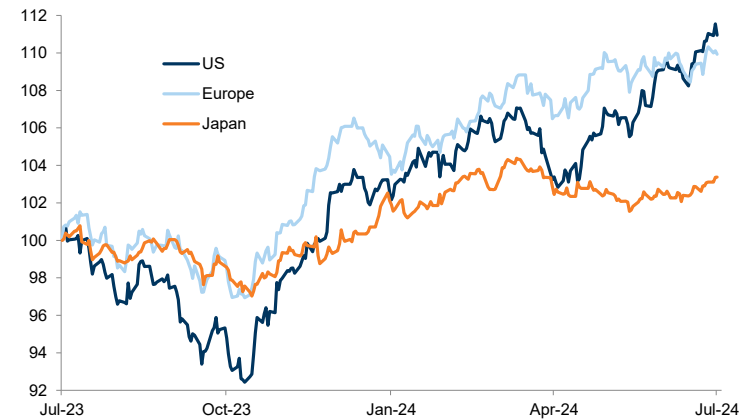
Cross-asset: Balanced portfolios and dynamic allocation strategies performance

Exhibit 19: 60/40 equity/bond portfolio performance across regions last 12m
Relative total return performance indexed to 100 12m ago



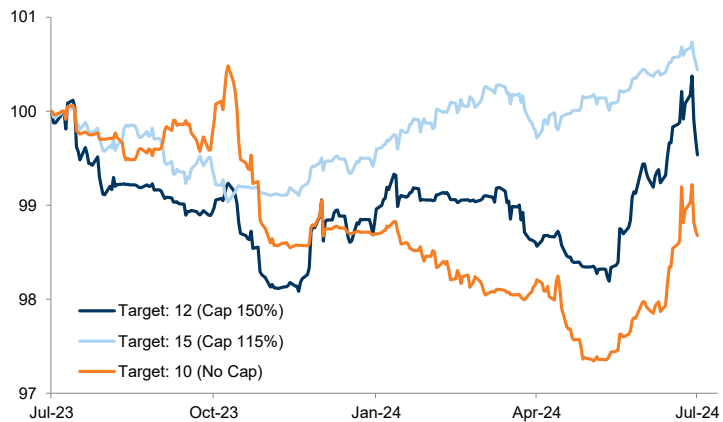
Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 20: Risk parity portfolio performance across regions last 12m
Weighted inversely by 3m realised volatility of equity and 10y bonds



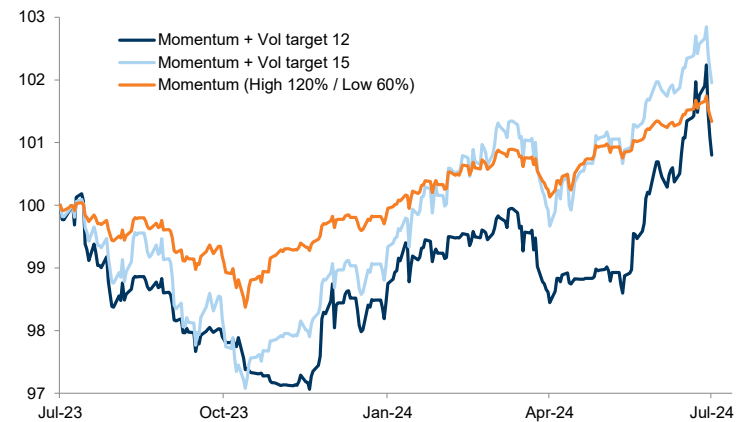
Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 21: 60/40 portfolio with volatility target strategies overlay vs. US 60/40 portfolio
60% S&P 500, 40% US 10y bond; based on 1m realised S&P 500 volatility



Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 22: 60/40 portfolio with volatility target strategies and momentum overlay vs. US 60/40
60% S&P 500, 40% US 10y bond; Strategy methodology see: GOAL: The Balanced Bear - Part 2

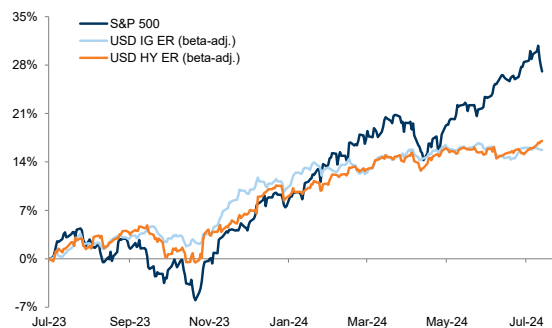


Source: Datastream, Goldman Sachs Global Investment Research

Cross-asset: Equity vs. credit monitor

Exhibit 23: USD cash credit vs. US equity

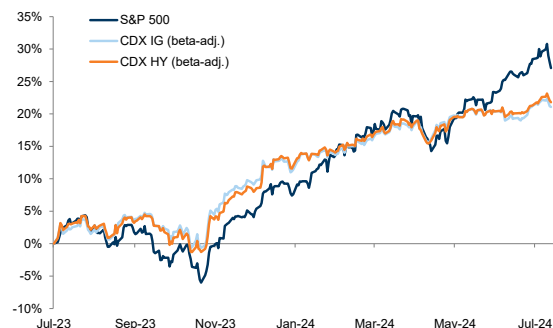
Cash credit excess returns (beta-adjusted) vs. S&P 500 total returns



Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 24: USD synthetic credit vs. US equity

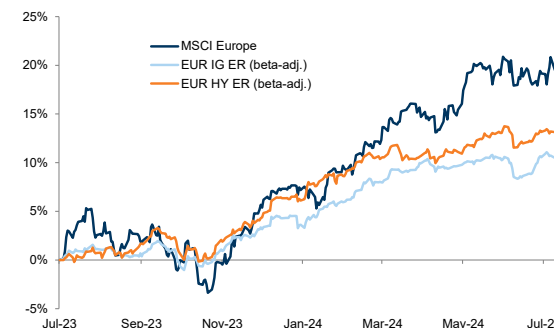
Synthetic credit excess returns (beta-adjusted) vs. S&P 500 total returns



Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 25: EUR cash credit vs. European equity

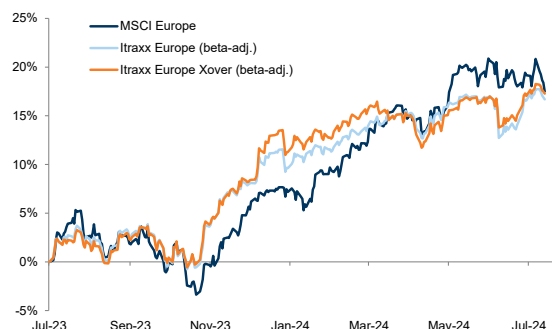
Cash credit excess returns (beta-adjusted) vs. MSCI Europe total returns



Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 26: EUR synthetic credit vs. European equity

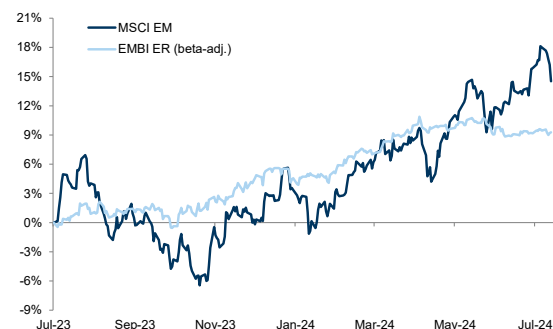
Synthetic credit excess returns (beta-adjusted) vs. MSCI Europe total returns



Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 27: EM cash credit vs. EM equity

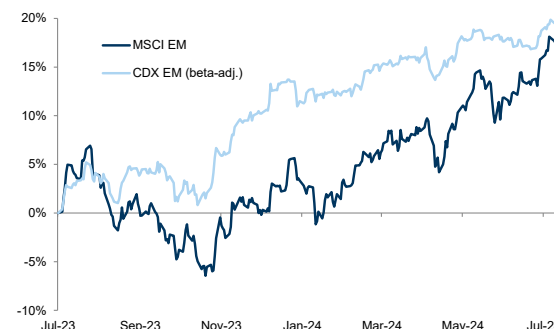
Cash credit excess returns (beta-adjusted) vs. MSCI EM total returns



Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 28: EM synthetic credit vs. EM equity

Synthetic credit excess returns (beta-adjusted) vs. MSCI EM total returns



Source: Datastream, Goldman Sachs Global Investment Research

Cross-asset: Valuation and risk premia

Exhibit 29: Cross-asset valuation table

A higher percentile means more expensive relative to 10y history

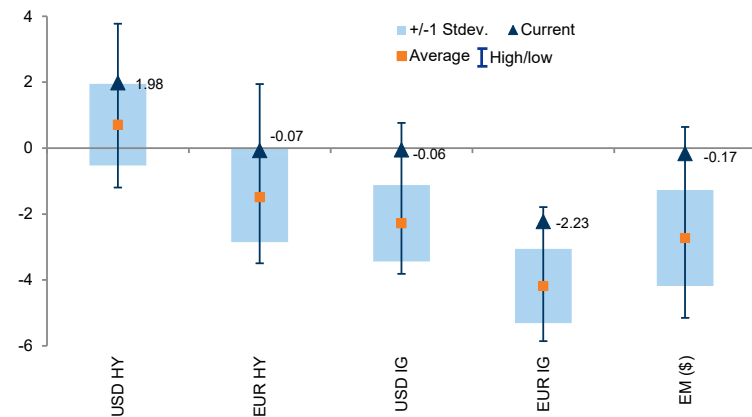
	Equity					Government bonds				Credit					FX	
	S&P 500	Stoxx 600	MXAPJ	Topix	MSCI EM	US 10y	German 10y	Japan 10y	UK 10y	US IG	US HY	EUR IG	EUR HY	EM (\$)	EUR/USD	USD/JPY
Valuation metric	12m forward P/E ratio					Yield				Spread					Actual - GS fair value	
Current:	21.1x	13.2x	13.5x	15.0x	12.1x	4.2%	2.4%	1.0%	4.1%	104bp	309bp	125bp	341bp	392bp	-0.11 €//\$	63.0 \$/¥
Expensiveness (last 10y percentile):	85%	23%	65%	82%	60%	6%	9%	1%	8%	90%	98%	55%	75%	35%	38%	1%
3M change:	1.3x	0.0x	0.6x	0.7x	0.4x	-0.4%	-0.1%	0.2%	-0.1%	-1bp	-28bp	-1bp	-25bp	49bp	0.02 €//\$	2.1 \$/¥
Average:	18.1x	14.4x	13.3x	13.9x	12.1x	2.4%	0.6%	0.2%	1.7%	143bp	441bp	136bp	404bp	-4bp	-0.08 €//\$	20.0 \$/¥
95th:	22.1x	17.4x	16.2x	17.3x	14.8x	4.3%	2.5%	0.7%	4.3%	192bp	693bp	203bp	583bp	509bp	0.01 €//\$	55.4 \$/¥
5th:	15.4x	11.9x	11.6x	12.0x	10.5x	0.7%	-0.5%	-0.1%	0.3%	101bp	317bp	96bp	279bp	288bp	-0.16 €//\$	5.1 \$/¥

Note: GSDEER is our fair value macro model for exchange rates. US IG spread is from iBoxx. EM (\$) is JPM EMBI.

Source: Datastream, I/B/E/S, iBoxx, Goldman Sachs Global Investment Research

Exhibit 30: Credit spread minus equity risk premium estimates across markets

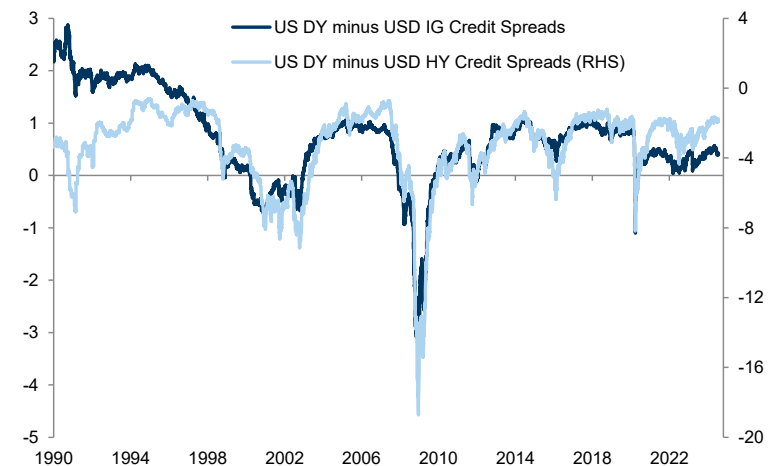
Equity risk premia based on 1-stage DDM using local 10-year yields and LT GDP consensus estimates. Using past 10 years of data.



Source: Datastream, iBoxx, Goldman Sachs Global Investment Research

Exhibit 31: Equity vs. credit relative valuation

US Dividend Yield minus Credit spreads



Source: Datastream, Goldman Sachs Global Investment Research

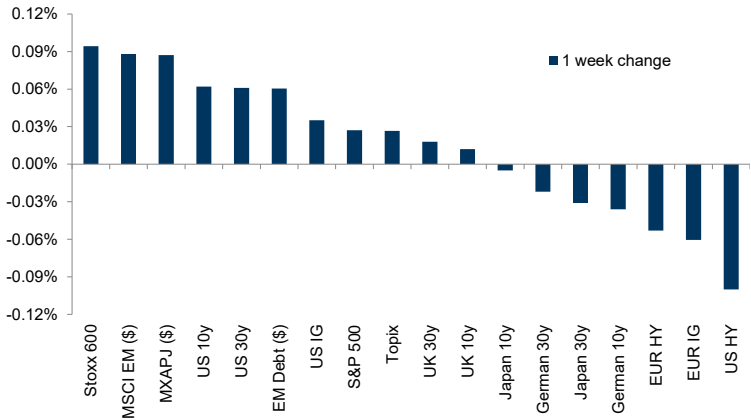
Cross-asset: Yields

Exhibit 32: Current yields across assets and their percentile to the past 10 years

	Equity					Government bonds				Credit				
	S&P 500	Stoxx 600	MXAPJ (\$)	Topix	MSCI EM (\$)	US 10y	German 10y	Japan 10y	UK 10y	US IG	EUR IG	US HY	EUR HY	EM Debt (\$)
Valuation metric	Dividend Yield (NTM)					Yield				Yield				
Current:	1.4%	3.5%	2.8%	2.3%	2.9%	4.2%	2.4%	1.0%	4.1%	5.7%	3.8%	7.8%	6.5%	8.1%
Percentile (-10y):	1%	33%	20%	46%	38%	93%	91%	100%	93%	93%	83%	69%	79%	85%
Average:	1.9%	3.6%	3.0%	2.3%	3.0%	2.4%	0.6%	0.2%	1.8%	3.2%	1.5%	6.9%	4.7%	6.2%
95th:	2.3%	4.0%	3.5%	2.7%	3.4%	4.3%	2.5%	0.7%	4.2%	5.7%	4.3%	9.0%	7.5%	8.5%
5th:	1.4%	3.0%	2.4%	1.9%	2.5%	0.8%	-0.5%	-0.1%	0.2%	1.3%	0.3%	4.7%	3.0%	4.8%
3m real. ret. vol:	10.0%	10.0%	14.4%	13.2%	12.5%	6.8%	6.3%	3.4%	6.8%	5.6%	2.9%	2.9%	1.5%	4.8%
Percentile (-10y):	20%	19%	35%	44%	29%	57%	66%	77%	53%	70%	69%	37%	17%	53%
Yield/vol ratio	0.14	0.35	0.20	0.17	0.23	0.63	0.38	0.30	0.60	1.00	1.29	2.67	4.29	1.68

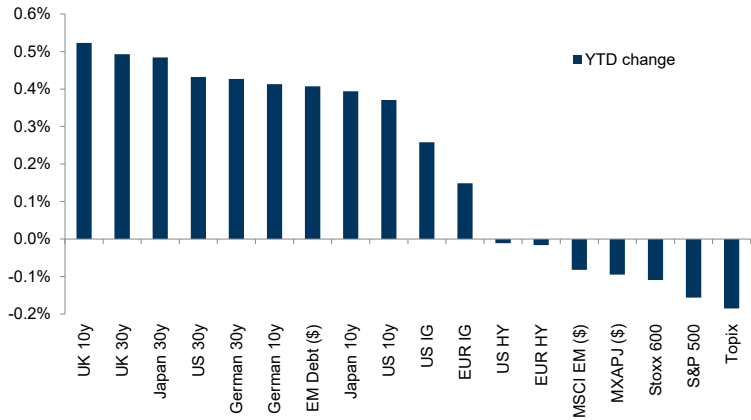
Source: Datastream, iBoxx, Goldman Sachs Global Investment Research

Exhibit 33: Past week change in yields across assets



Source: Datastream, iBoxx, Goldman Sachs Global Investment Research

Exhibit 34: YTD change in yields across assets

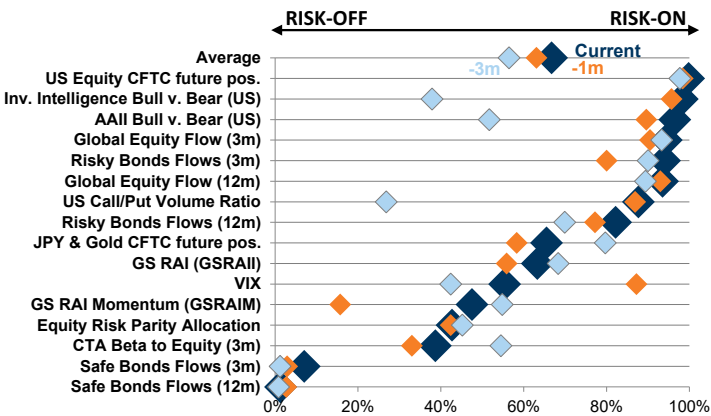


Source: Datastream, iBoxx, Goldman Sachs Global Investment Research

Cross-asset: Sentiment and Positioning

Exhibit 35: Percentile of sentiment indicators

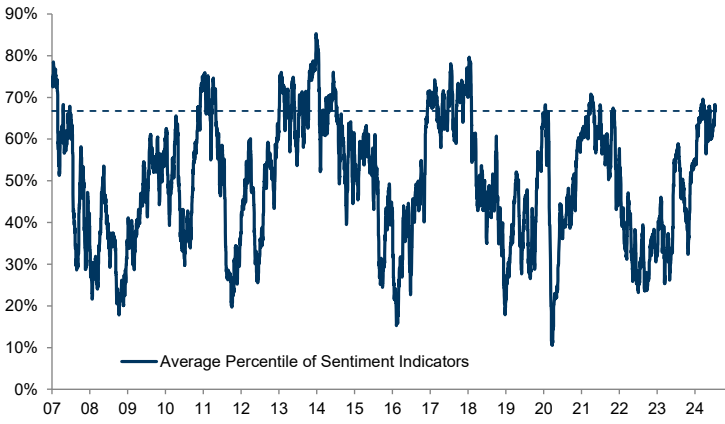
Data since 2007



Source: Datastream, Haver Analytics, EPFR, Goldman Sachs Global Investment Research

Exhibit 36: Average percentile of sentiment indicators

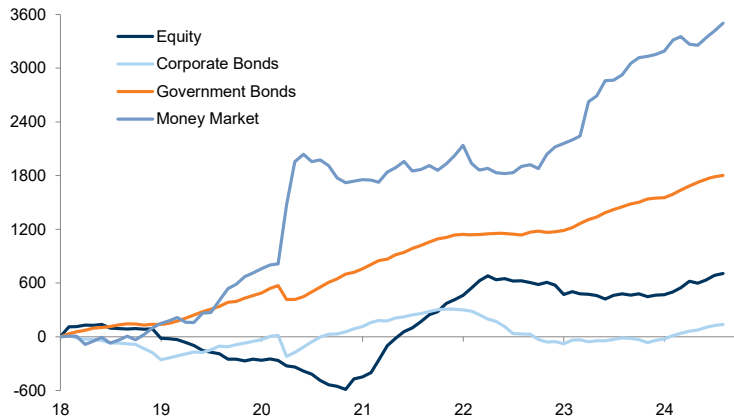
Data since 2007



Source: Datastream, Haver Analytics, EPFR, Goldman Sachs Global Investment Research

Exhibit 37: Cumulative fund flows across assets

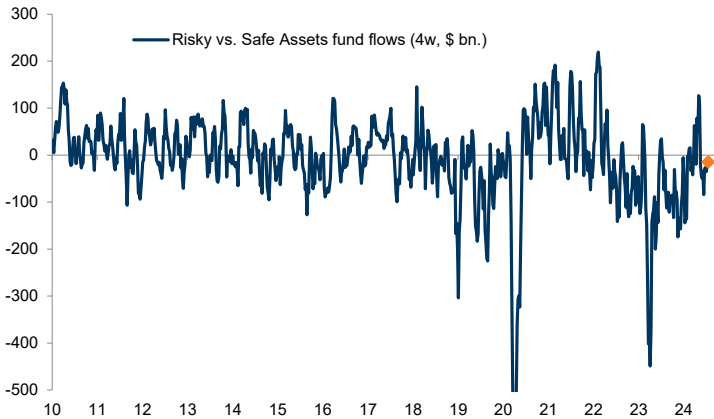
Monthly flows (\$bn). MTD sum of weekly flows when monthly not yet available



Source: Datastream, Haver Analytics, EPFR, Goldman Sachs Global Investment Research

Exhibit 38: Risky vs. safe assets fund flows

4 weeks rolling flows, USD bn

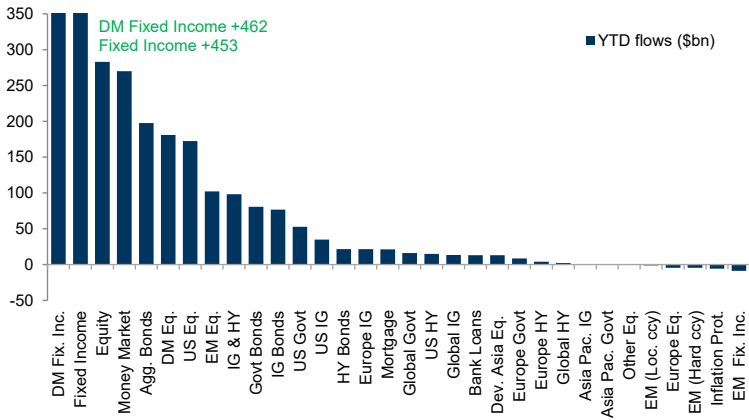


Source: Datastream, Haver Analytics, EPFR, Goldman Sachs Global Investment Research

Cross-asset: Global Funds Flows

Exhibit 39: YTD cross-asset global fund flows

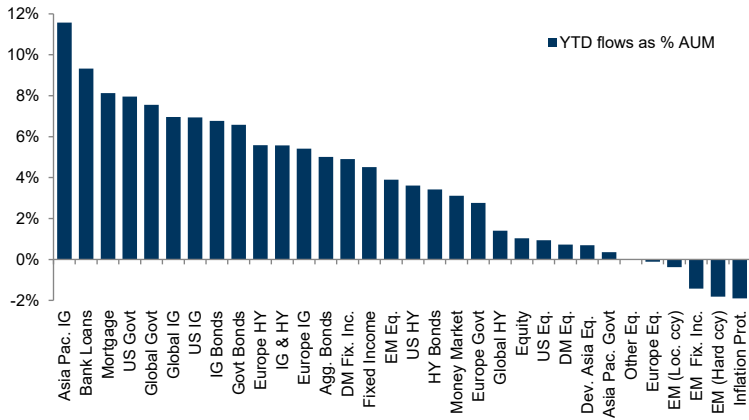
All funds reporting monthly. MTD sum of weekly flows when monthly not yet available (\$Bn)



Source: EPFR, Goldman Sachs Global Investment Research

Exhibit 40: YTD cross-asset global fund flows

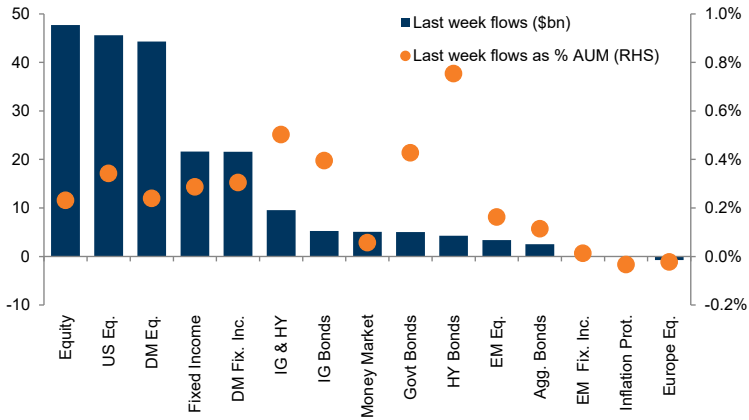
All funds reporting monthly. MTD sum of weekly flows when monthly not yet available (% of AUM)



Source: EPFR, Goldman Sachs Global Investment Research

Exhibit 41: 1-week cross-asset global fund flows

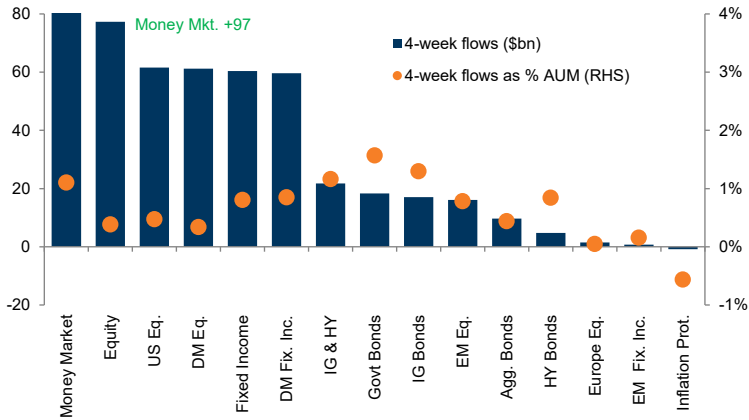
All funds reporting weekly



Source: EPFR, Goldman Sachs Global Investment Research

Exhibit 42: 4-week cross-asset global fund flows

All funds reporting weekly

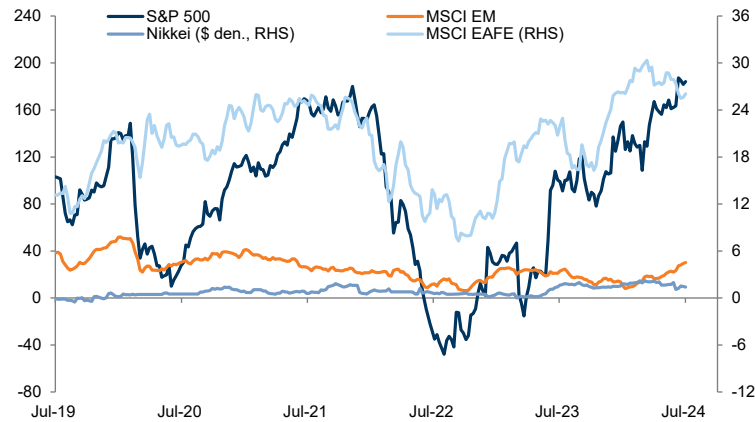


Source: EPFR, Goldman Sachs Global Investment Research

Cross-asset: CFTC positioning

Exhibit 43: Equity net long positioning

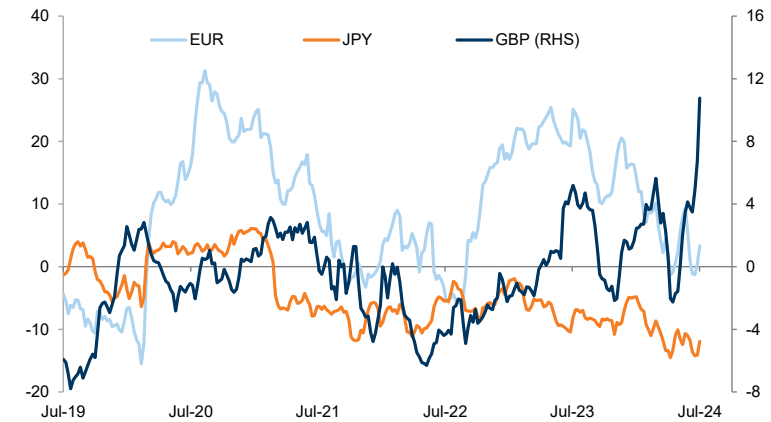
Leveraged funds and asset managers net future positions (\$ bn)



Source: Bloomberg, CFTC, Goldman Sachs Global Investment Research

Exhibit 44: Currency net long positioning

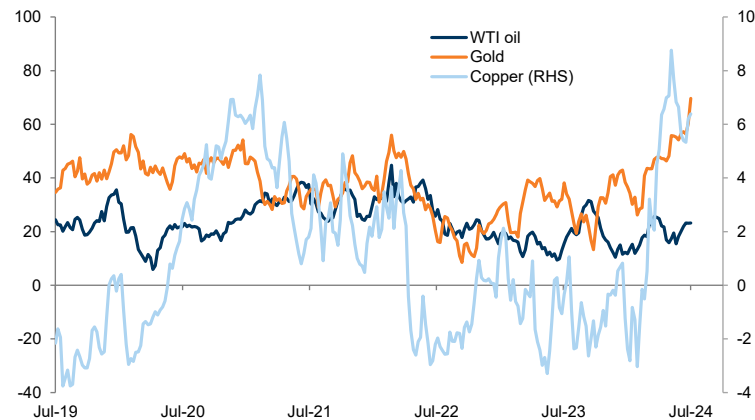
Net non-commercial positions (\$ bn)



Source: Bloomberg, CFTC, Goldman Sachs Global Investment Research

Exhibit 45: Commodity net long positioning

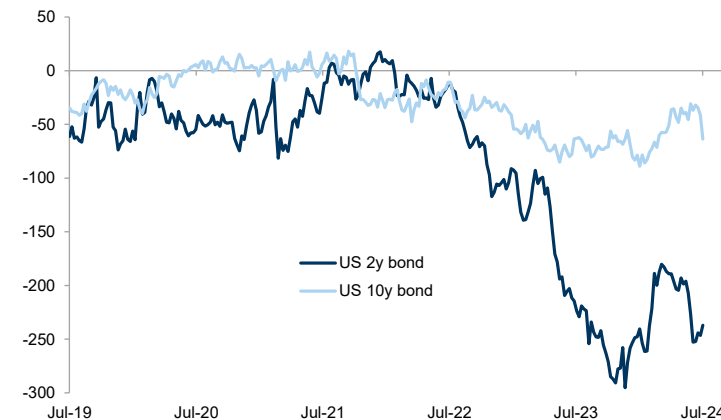
Net non-commercial positions (\$ bn)



Source: Bloomberg, CFTC, Goldman Sachs Global Investment Research

Exhibit 46: US Treasury net long positioning

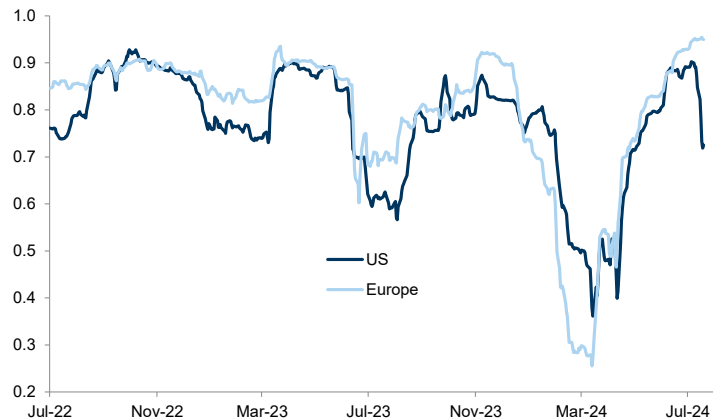
Net non-commercial positions (\$ bn)



Source: Bloomberg, CFTC, Goldman Sachs Global Investment Research

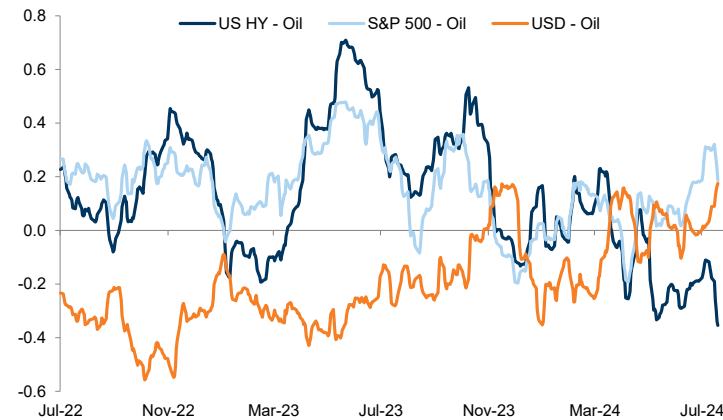
Cross-asset: Correlations: Equity vol/CDS, commodity prices/credit & FX, equity/bond, equity/FX

Exhibit 47: 3m rolling equity vol/CDS correlation of weekly level changes
CDX HY for the US, iTraxx Xover for Europe; ATM implied vol for S&P 500 and Euro Stoxx 50



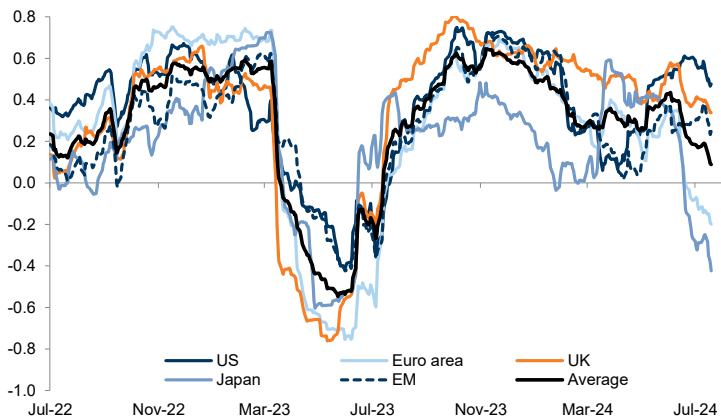
Source: Datastream, Goldman Sachs, Goldman Sachs Global Investment Research

Exhibit 48: 3m rolling commodity price correlations of weekly % changes with different assets



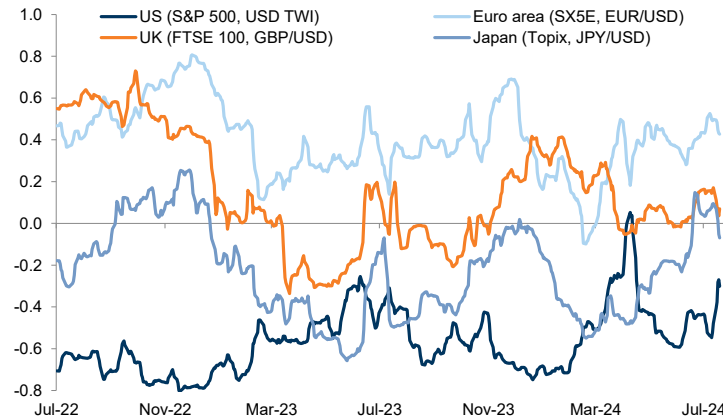
Source: Datastream, Goldman Sachs, Goldman Sachs Global Investment Research

Exhibit 49: 3m rolling equity/bond correlation of weekly returns



Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 50: 3m rolling equity/FX correlation of weekly returns



Source: Datastream, Goldman Sachs Global Investment Research

Cross-asset: Correlation matrix

Exhibit 51: Cross-asset correlation matrix

Upper half of matrix: current 1-year correlation (black shading = more/less than 0.50/-0.50); lower half of matrix: percentile since 2001 (dark grey shading indicates above 75th percentile, orange shading indicates below 25th percentile); correlations are calculated on weekly, local currency returns.

	S&P 500	STOXX 600	MXAPJ	TOPIX	MSCI EM	US 10 yr	Germany 10 yr	Japan 10 yr	UK 10 yr	EUR/USD	USD/JPY	AUD/USD	iBoxx US IG	iBoxx EUR IG	BAML US HY	BAML EUR HY	EM Credit (\$)	WTI Crude Oil	Copper	Gold	VIX
	Current 1y correlation of weekly returns																				
S&P 500		0.70	0.70	0.57	0.70	0.56	0.43	0.29	0.44	0.31	-0.13	0.41	0.59	0.48	0.70	0.52	0.68	-0.03	0.09	0.08	-0.59
STOXX 600	0.13		0.73	0.46	0.73	0.44	0.36	0.19	0.42	0.28	-0.18	0.44	0.52	0.48	0.62	0.66	0.61	0.08	0.29	0.16	-0.49
MXAPJ	0.65	0.72		0.49	0.99	0.52	0.39	0.20	0.43	0.44	-0.45	0.62	0.58	0.50	0.62	0.57	0.64	0.09	0.35	0.24	-0.44
TOPIX	0.56	0.11	0.19		0.50	0.38	0.24	0.16	0.30	0.12	0.03	0.24	0.42	0.31	0.47	0.31	0.45	0.12	-0.05	0.13	-0.39
MSCI EM	0.62	0.65	0.91	0.26		0.52	0.39	0.20	0.44	0.40	-0.40	0.59	0.58	0.50	0.62	0.57	0.64	0.11	0.37	0.25	-0.42
US 10 yr	1.00	0.99	0.99	1.00	1.00		0.86	0.54	0.82	0.36	-0.52	0.50	0.96	0.85	0.83	0.65	0.87	-0.18	0.06	0.28	-0.33
Germany 10 yr	1.00	0.98	1.00	0.99	1.00	0.95		0.47	0.82	0.12	-0.50	0.35	0.83	0.93	0.69	0.56	0.74	-0.18	-0.01	0.34	-0.16
Japan 10 yr	1.00	0.99	0.97	0.95	0.98	0.69	0.39		0.44	0.19	-0.20	0.10	0.49	0.41	0.37	0.28	0.43	-0.13	-0.06	0.18	-0.26
UK 10 yr	0.98	0.99	1.00	1.00	1.00	0.74	0.35	0.40		0.26	-0.40	0.40	0.81	0.83	0.70	0.61	0.78	-0.09	0.05	0.29	-0.19
EUR/USD	0.64	0.73	0.62	0.62	0.50	0.81	0.69	0.81	0.77		-0.48	0.78	0.38	0.25	0.46	0.35	0.46	-0.06	0.29	0.29	-0.10
USD/JPY	0.19	0.06	0.13	0.23	0.15	0.45	0.27	0.61	0.57	0.35		-0.52	-0.54	-0.55	-0.47	-0.44	-0.51	0.24	-0.13	-0.25	0.12
AUD/USD	0.51	0.63	0.46	0.42	0.44	0.99	0.97	0.76	0.99	0.98	0.17		0.52	0.48	0.62	0.48	0.61	0.09	0.42	0.34	-0.19
iBoxx US IG	0.95	0.97	0.93	0.96	0.94	0.89	0.95	0.67	0.94	0.78	0.21	0.95		0.87	0.87	0.76	0.91	-0.17	0.13	0.26	-0.35
iBoxx EUR IG	0.92	0.92	0.92	0.86	0.92	0.97	0.86	0.70	0.87	0.76	0.06	0.93	0.99		0.79	0.74	0.81	-0.08	0.13	0.36	-0.22
BAML US HY	0.74	0.56	0.61	0.57	0.61	0.99	1.00	0.96	1.00	0.85	0.01	0.81	0.98	0.95		0.82	0.92	-0.03	0.09	0.18	-0.39
BAML EUR HY	0.54	0.74	0.46	0.22	0.54	0.99	0.99	0.95	1.00	0.77	0.05	0.70	0.95	0.93	0.58		0.77	0.02	0.23	0.17	-0.38
EM Credit (\$)	0.88	0.78	0.66	0.83	0.59	0.98	0.99	0.88	1.00	0.81	0.07	0.80	0.98	0.94	0.99	0.92		-0.07	0.17	0.32	-0.40
WTI Crude Oil	0.18	0.30	0.16	0.36	0.15	0.41	0.42	0.34	0.58	0.10	0.90	0.23	0.25	0.24	0.15	0.27	0.10		0.22	0.26	-0.10
Copper	0.04	0.37	0.24	0.01	0.28	0.85	0.85	0.61	0.88	0.45	0.30	0.42	0.78	0.78	0.09	0.44	0.32	0.35		0.36	0.03
Gold	0.56	0.74	0.48	0.82	0.46	0.62	0.78	0.58	0.69	0.15	0.71	0.33	0.54	0.77	0.51	0.65	0.61	0.60	0.60		0.09
VIX	0.02	0.09	0.19	0.39	0.22	0.00	0.02	0.01	0.02	0.44	0.86	0.46	0.01	0.22	0.33	0.42	0.06	0.61	0.94	0.72	
	Current correlation's percentile since 2001																				

Source: Datastream, iBoxx, Goldman Sachs Global Investment Research

Cross-asset: Implied and realised vol, call and put skew

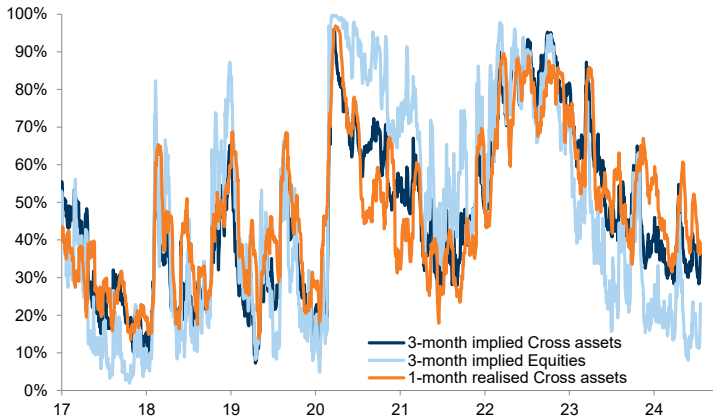
Exhibit 52: Cross-asset volatility, current and historical percentiles, implied 3m and realised 1m

	Equities						Rates				Credit			Commodities			Currencies		
	S&P 500	EURO STOXX 50	Nikkei 225	FTSE 100	MSCI EM	MSCI EAFE	USD 2-year	USD 10-year	EUR 2-year	EUR 10-year	CDX IG	CDX HY	iTraxx Europe	WTI	Gold	Copper	EUR/USD	JPY/USD	GBP/USD
Implied (3-month ATM, %)																			
Current:	13.0	14.0	17.6	10.9	13.7	12.4	6.5	6.0	4.4	4.4	42.2	32.8	45.0	24.0	14.3	20.1	5.5	9.1	6.4
Percentile:	35%	25%	39%	16%	1%	22%	76%	77%	76%	74%	23%	14%	31%	8%	52%	40%	13%	61%	7%
1M change:	1.6	-0.5	1.5	0.3	0.1	-1.2	0.0	-0.2	-0.5	-0.9	0.2	-0.1	-8.4	1.2	0.6	-3.0	-1.2	0.5	-0.3
Average:	15.9	18.0	18.8	14.8	19.6	15.5	4.5	5.1	2.7	3.9	49.7	44.8	53.2	36.4	14.2	22.0	7.7	8.7	9.0
95th:	25.2	26.1	25.6	22.6	26.7	22.6	9.7	7.9	8.5	7.7	69.7	65.7	70.3	54.5	19.5	29.7	11.3	12.7	13.0
5th:	10.0	12.2	13.8	10.2	14.7	10.4	1.3	3.5	0.9	2.2	38.0	30.6	38.6	22.8	9.7	15.7	5.1	5.6	6.3
Realised (%)																			
1-month:	9.7	13.1	17.7	8.1	10.6	11.1	4.9	5.9	3.1	3.8	23.6	16.1	36.7	22.3	14.8	16.3	4.3	10.5	5.7
Percentile:	30%	36%	56%	11%	23%	46%	69%	73%	75%	66%	9%	5%	46%	14%	64%	29%	7%	76%	9%
Average:	15.0	17.4	18.5	14.2	14.7	13.1	4.2	5.0	2.1	3.6	40.0	33.7	42.7	39.8	13.6	20.1	7.7	8.5	8.9

Source: Goldman Sachs FICC and Equities, Goldman Sachs Global Investment Research

Exhibit 53: 10y percentile for cross-asset average volatility

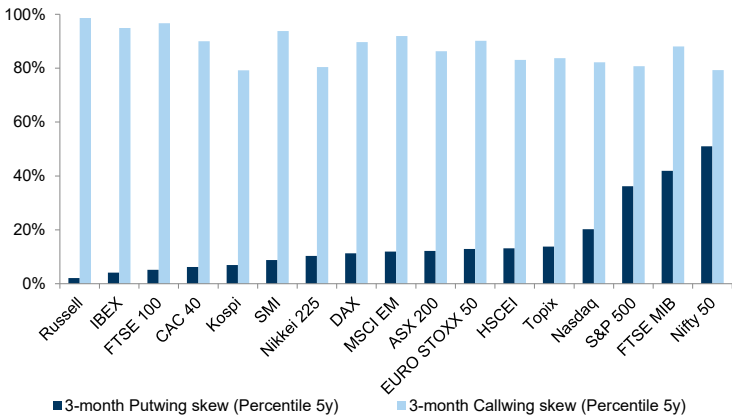
Using 16 assets across equity, government bonds, credit, commodities and FX



Source: Goldman Sachs FICC and Equities, Goldman Sachs Global Investment Research

Exhibit 54: Putwing and Callwing normalised skew 5y percentile

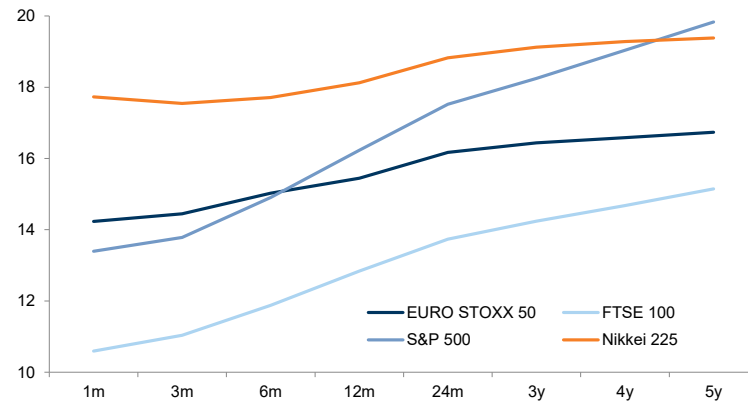
Normalised skew = (impl. vol 25 delta put/call minus implied vol 50 delta call)/50 delta call



Source: Goldman Sachs FICC and Equities, Goldman Sachs Global Investment Research

Cross-asset: Volatility, skew, CDS with equity vol, rate vol

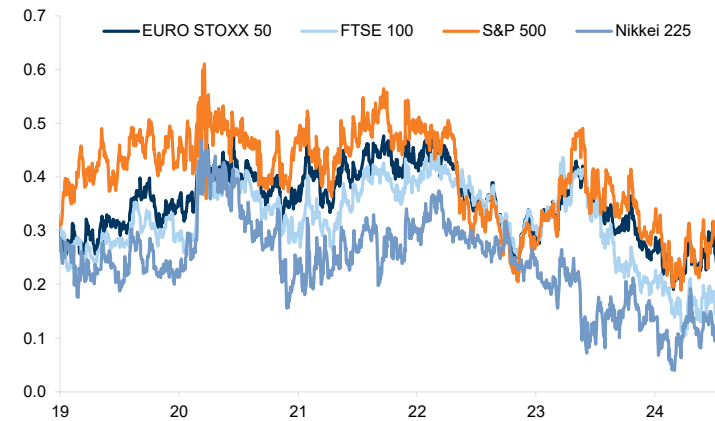
Exhibit 55: ATM implied volatility term structure for equity indices



Source: Goldman Sachs FICC and Equities, Goldman Sachs Global Investment Research

Exhibit 56: Normalised implied volatility skew across regions

3m 25 delta put vol minus 25 delta call vol scaled by ATM implied vol



Source: Goldman Sachs FICC and Equities, Goldman Sachs Global Investment Research

Exhibit 57: CDS and equity vol levels in the US

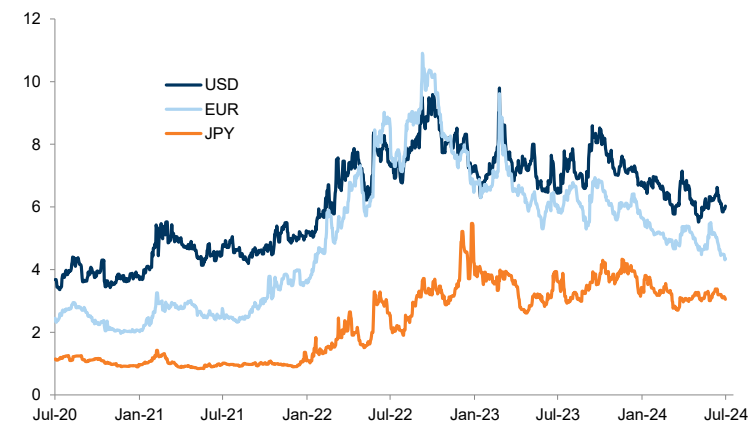
CDX HY, 3m ATM S&P 500 implied vol



Source: Goldman Sachs FICC and Equities, Goldman Sachs Global Investment Research

Exhibit 58: 3m ATM implied rate volatility across regions

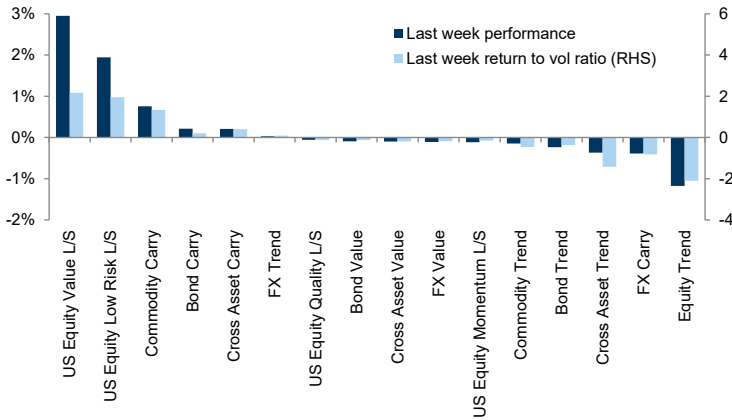
3-month implied volatility of 10-year rates (bp/day)



Source: Goldman Sachs FICC and Equities, Goldman Sachs Global Investment Research

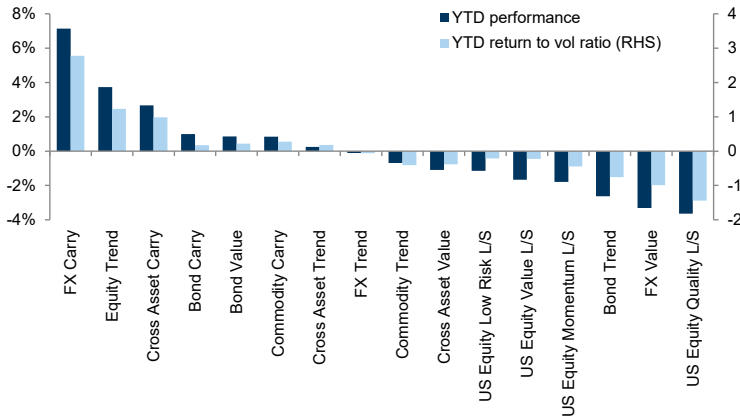
Cross-asset: Alternatives and liquid risk premia

Exhibit 59: Last week performance of liquid risk premia
Bloomberg GSAM indices. 12M volatility



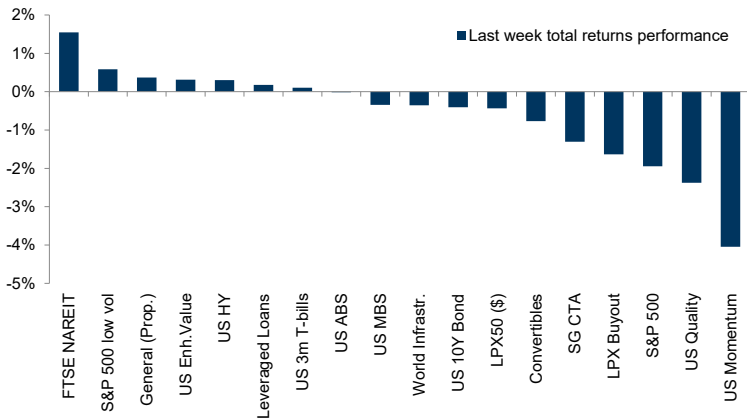
Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 60: YTD performance of liquid risk premia
Bloomberg GSAM indices. 12M volatility



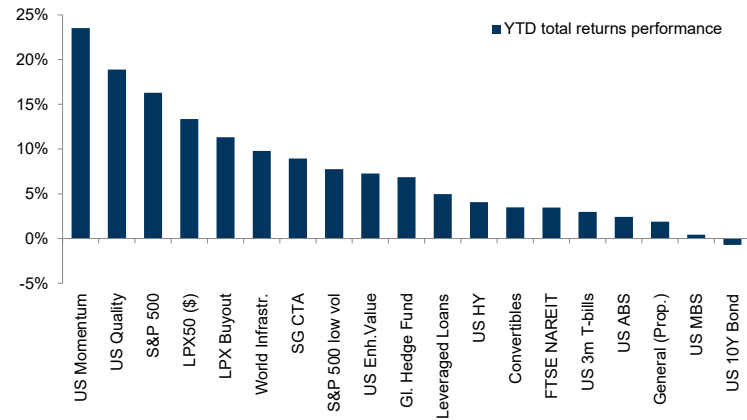
Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 61: Last week performance of alternative assets or strategies



Source: Bloomberg, Datastream, Goldman Sachs Global Investment Research

Exhibit 62: YTD performance of alternative assets or strategies

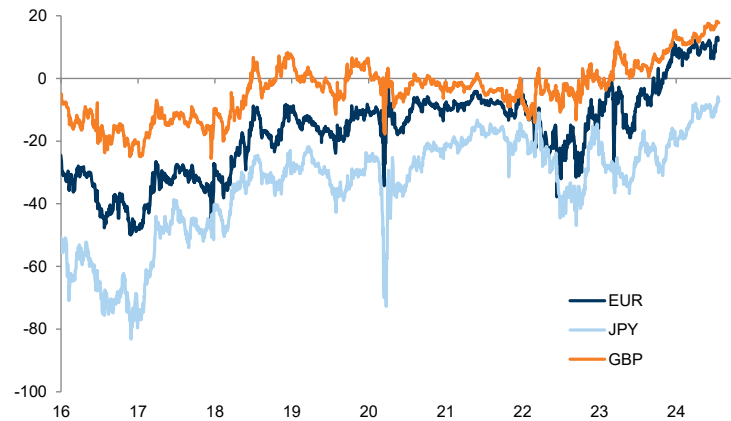


Source: Bloomberg, Datastream, Goldman Sachs Global Investment Research

Cross-asset: Liquidity indicators

Exhibit 63: 1-year cross-currency basis

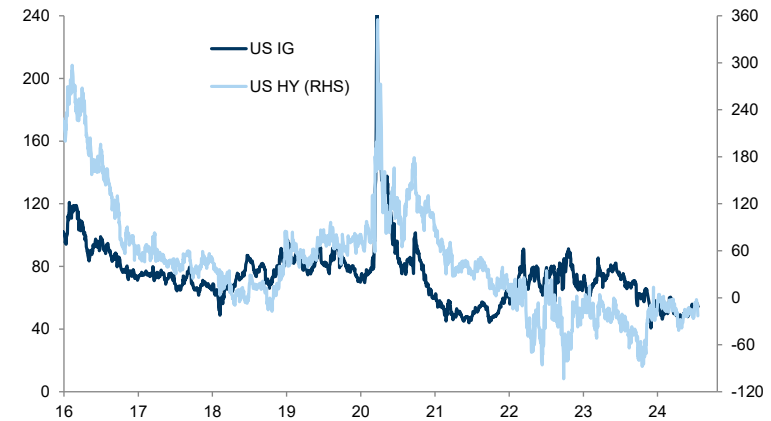
Basis points



Source: Goldman Sachs FICC and Equities, Goldman Sachs Global Investment Research

Exhibit 64: Cash credit versus CDS spread

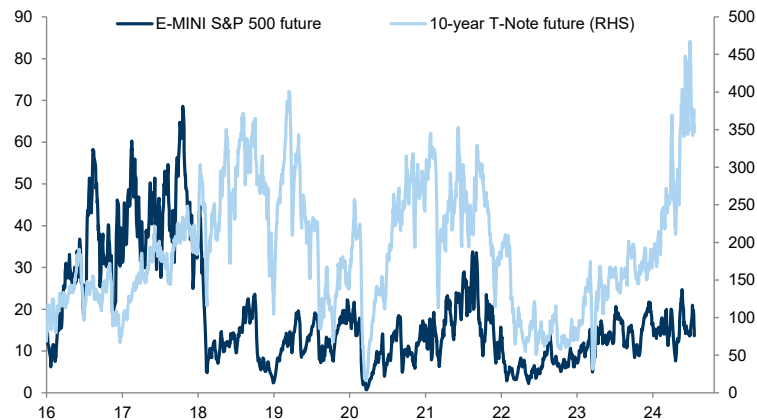
Basis points



Source: Goldman Sachs FICC and Equities, Haver Analytics, Goldman Sachs Global Investment Research

Exhibit 65: Top-of-book depth

5-day average, \$ mln

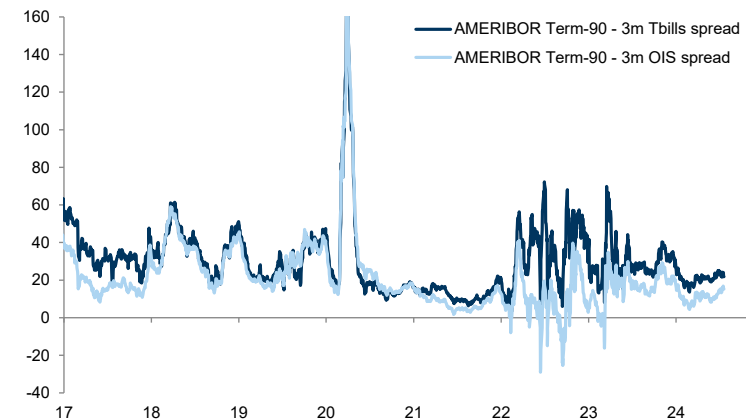


E-MINI S&P 500 = 5d avg. # of contracts * S&P 500 price * \$50. 10-year T-note = 5d avg. # of contracts * \$100,000

Source: Bloomberg, Goldman Sachs FICC and Equities, Goldman Sachs Global Investment Research

Exhibit 66: US financial institutions wholesale funding cost

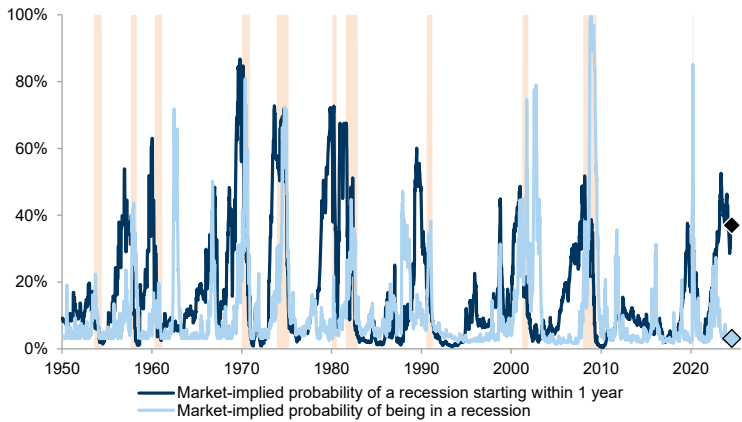
Basis points



Source: Bloomberg, Goldman Sachs Global Investment Research

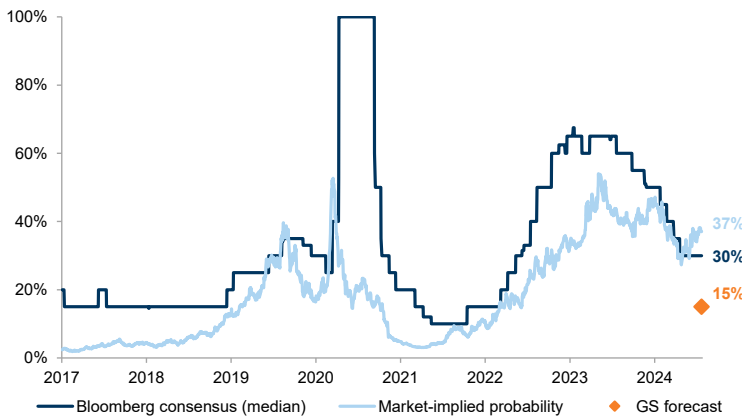
Cross-asset: Market pricing of US recession risk

Exhibit 67: Market-implied US recession probability
Average of univariate logit models on the right. Orange shade: NBER recession



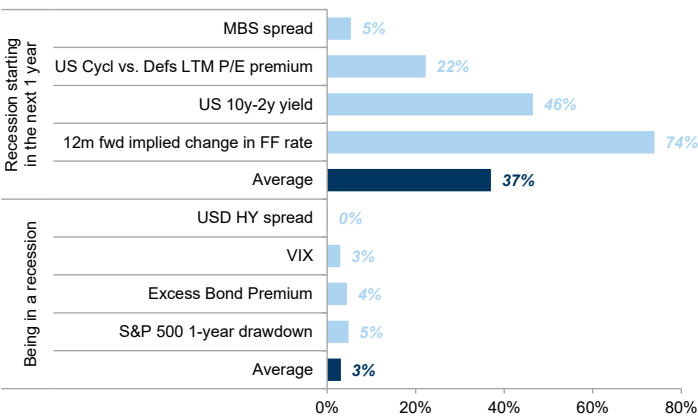
Source: Haver Analytics, Datastream, Worldscope, Goldman Sachs Global Investment Research

Exhibit 69: Probability of a US recession in the next 1 year



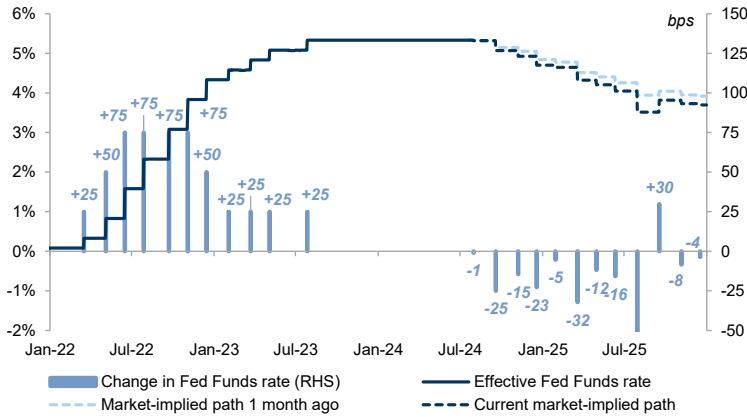
Source: Haver Analytics, Datastream, Worldscope, Bloomberg, Goldman Sachs Global Investment Research

Exhibit 68: Market-implied US recession probability by indicator
Univariate logit models. Maximum history since 1950



Source: Haver Analytics, Datastream, Worldscope, Goldman Sachs Global Investment Research

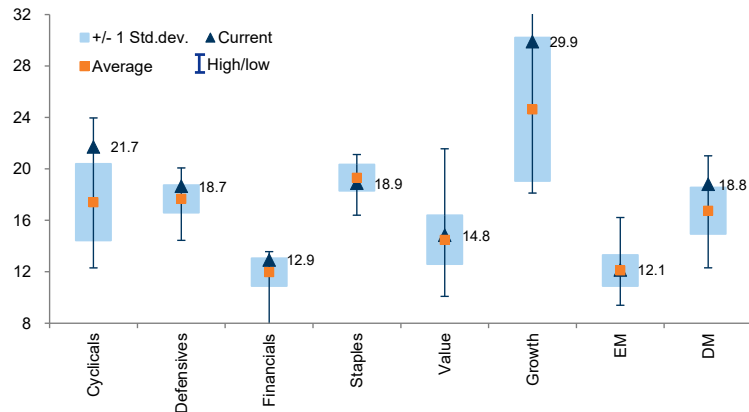
Exhibit 70: Market-implied path of the Fed Funds rate
Based on 30-day Fed Funds futures



Source: Haver Analytics, Goldman Sachs Global Investment Research

Equity: Valuation and styles

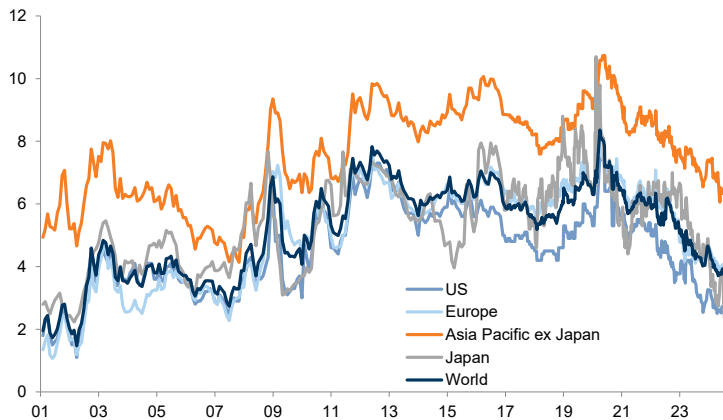
Exhibit 71: Valuation ranges of MSCI World styles indices
12-month forward P/E's relative to the last 10 years



Source: Datastream, I/B/E/S, Goldman Sachs Global Investment Research

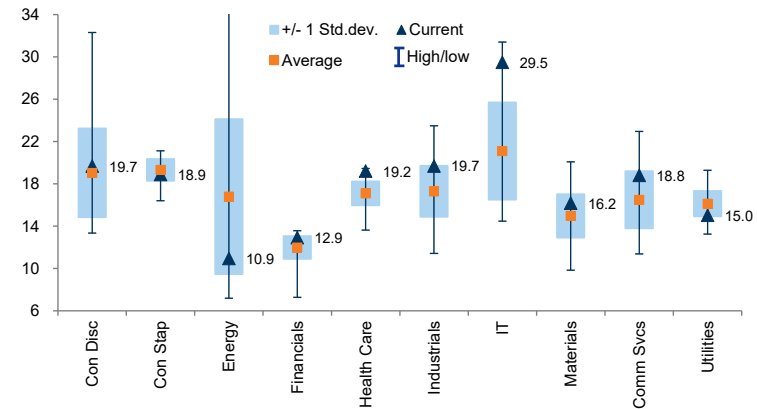
Exhibit 73: Global market implied ERPs (%)

Implied ERPs are calculated by each regional strategy team. While specific assumptions differ between regions, all are calculated using similar frameworks



Source: Datastream, Goldman Sachs Global Investment Research

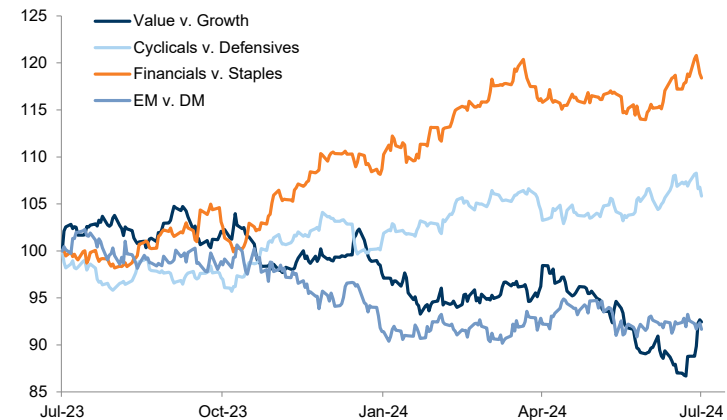
Exhibit 72: MSCI World sector valuations
12-month forward P/E's relative to the last 10 years



Source: Datastream, I/B/E/S, Goldman Sachs Global Investment Research

Exhibit 74: MSCI World style index performance

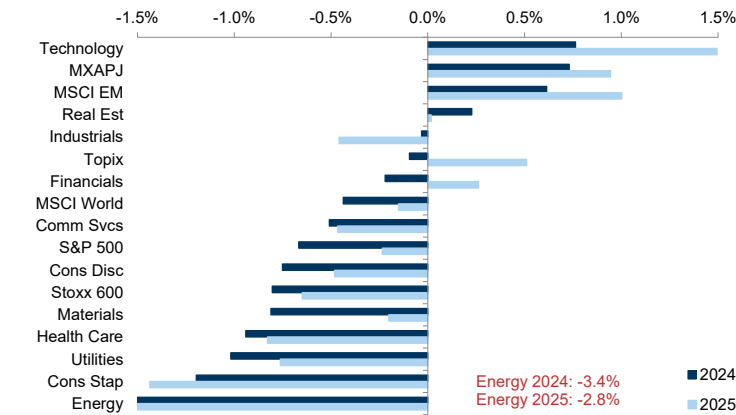
Performance indexed to 100 12m ago



Source: Datastream, Goldman Sachs Global Investment Research

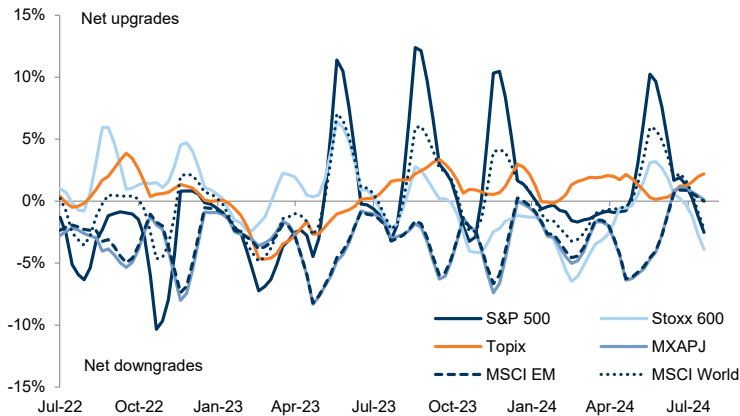
Equity: Earnings

Exhibit 75: 1-month revision to I/B/E/S consensus earnings
MSCI World sectors, other global equity index aggregates. TOPIX: FY 2023/2024



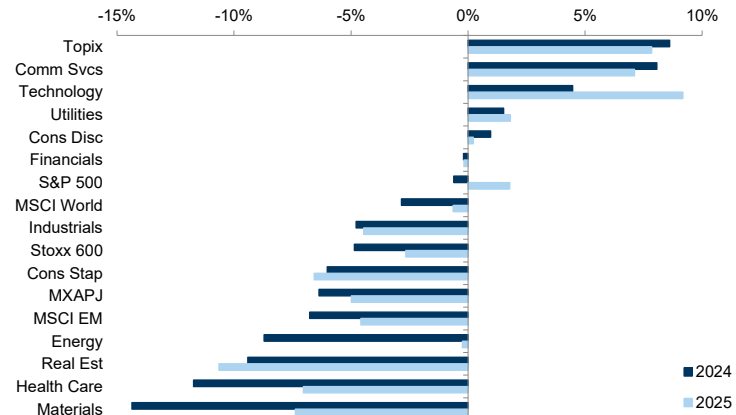
Source: Datastream, I/B/E/S, Goldman Sachs Global Investment Research

Exhibit 77: Earnings sentiment: Analyst upgrades minus downgrades (scaled by total analysts) across markets
1-month moving average of net monthly upgrades



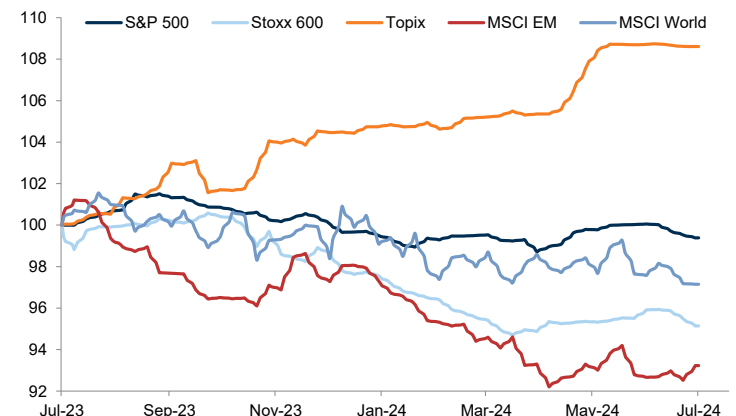
Source: Datastream, I/B/E/S, Goldman Sachs Global Investment Research

Exhibit 76: 12-month revision to I/B/E/S consensus earnings
MSCI World sectors, other global equity index aggregates. TOPIX: FY 2023/2024



Source: Datastream, I/B/E/S, Goldman Sachs Global Investment Research

Exhibit 78: 2024 consensus earnings expectations over the past 12 months
Earnings indexed to 100 12 months ago. TOPIX: FY 2024

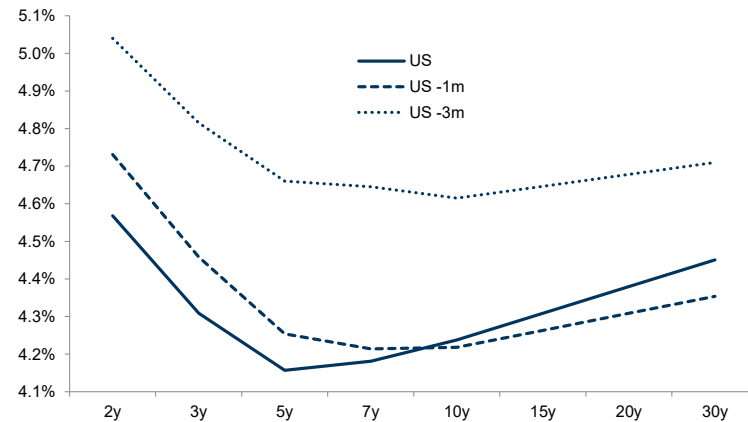


Source: Datastream, I/B/E/S, Goldman Sachs Global Investment Research

Government bonds: Yield curves

Exhibit 79: US yield curve dynamics

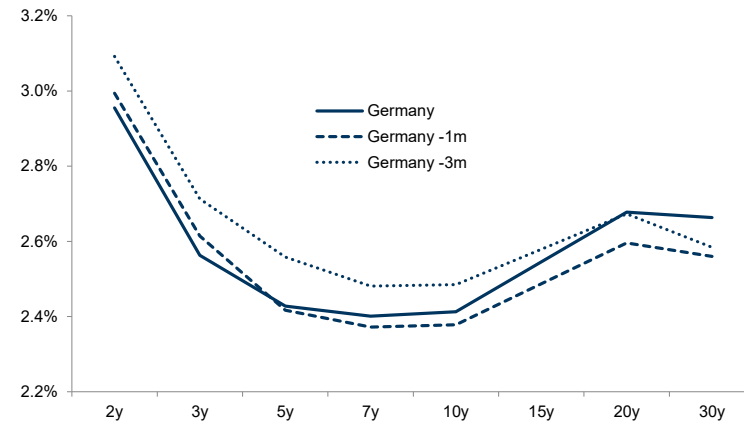
Current relative to 1 month and 3 months ago



Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 80: German yield curve dynamics

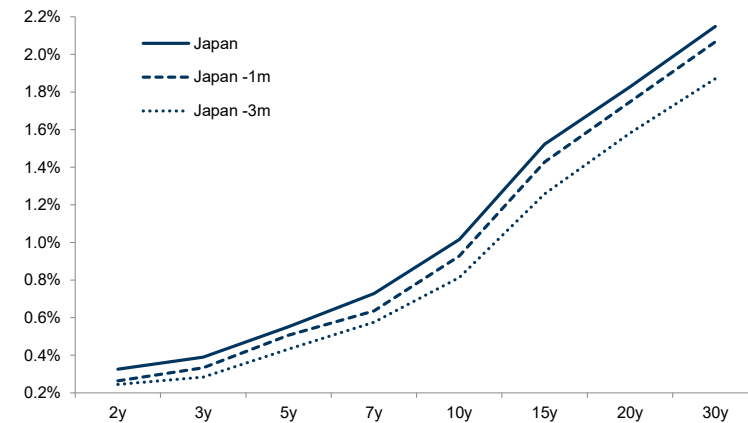
Current relative to 1 month and 3 months ago



Source: Datastream, Goldman Sachs Global Investment Research

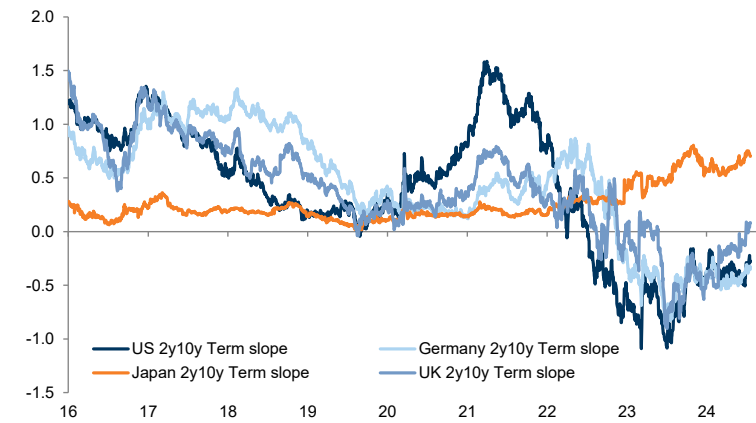
Exhibit 81: Japan yield curve dynamics

Current relative to 1 month and 3 months ago



Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 82: Yield curve term slope across regions

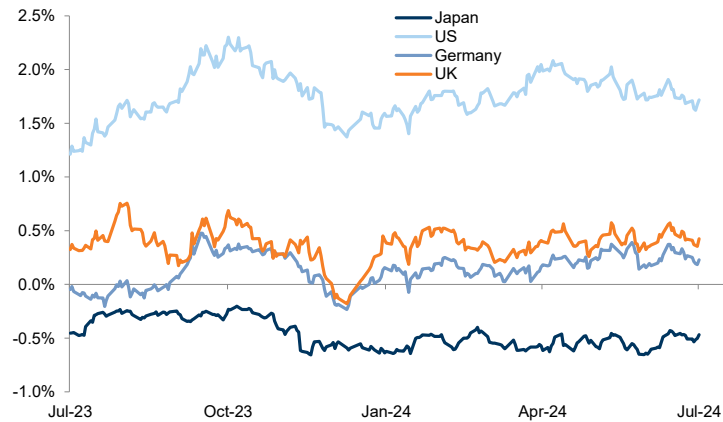


Source: Datastream, Goldman Sachs Global Investment Research

Government bonds: Real yields, inflation, breakevens, 10y IR differentials

Exhibit 83: 10y real yields across regions

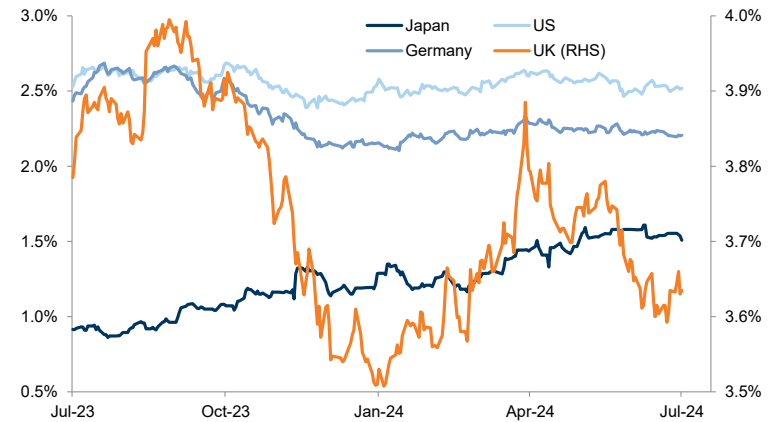
Nominal bond yield minus CPI inflation swap (RPI for the UK)



Source: Goldman Sachs, Goldman Sachs Global Investment Research

Exhibit 84: 10y inflation swaps across regions

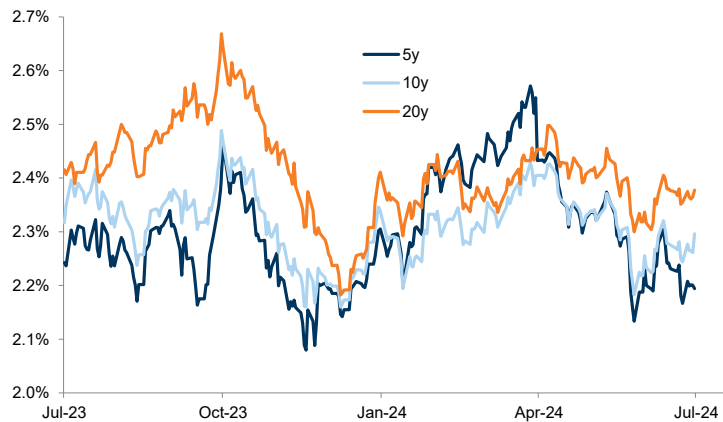
CPI inflation swap (RPI for the UK)



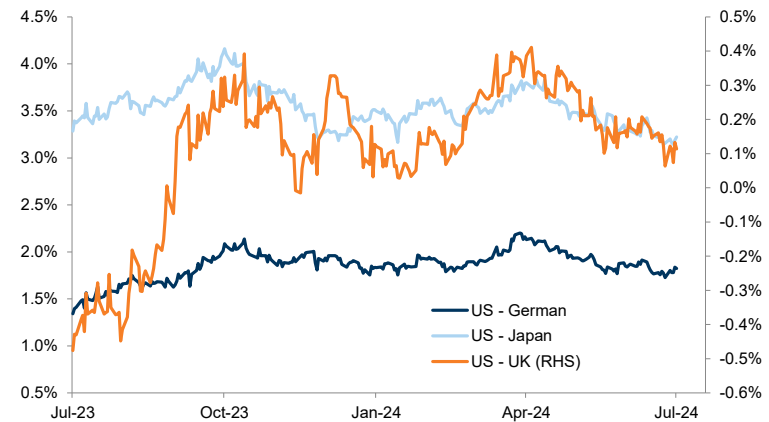
Source: Goldman Sachs, Goldman Sachs Global Investment Research

Exhibit 85: US breakeven inflation

Nominal yield minus TIPS yield



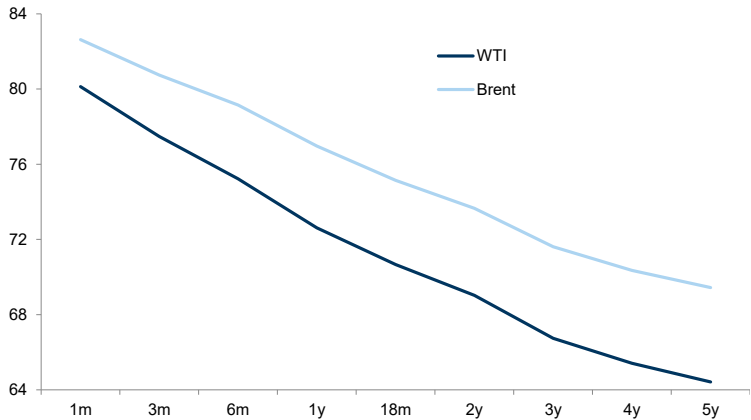
Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 86: 10y nominal bond yield differentials


Source: Datastream, Goldman Sachs Global Investment Research

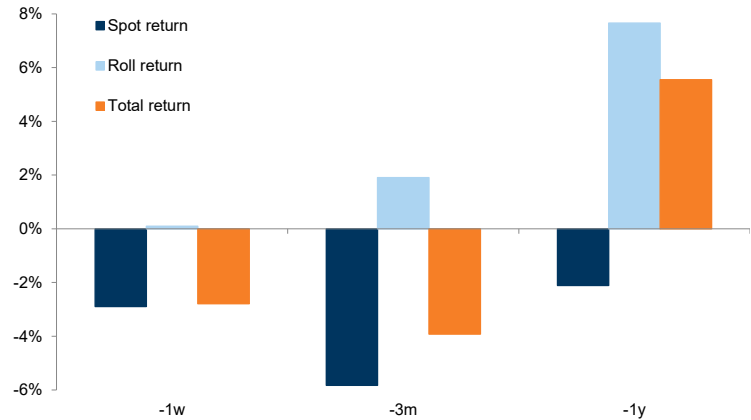
Commodities: Curve shapes and roll yields

Exhibit 87: WTI and Brent oil forward curves



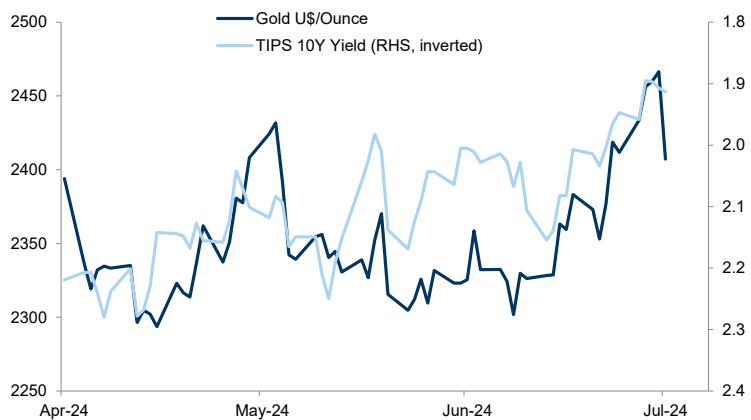
Source: Goldman Sachs, Goldman Sachs Global Investment Research

Exhibit 89: GSCI® Enhanced spot, roll and total returns
Returns over the past 1 week, 3 months and 1 year



Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 88: Gold price and US real yields
US 10-year TIPS yield, Gold US/ounce



Source: Datastream, Goldman Sachs Global Investment Research

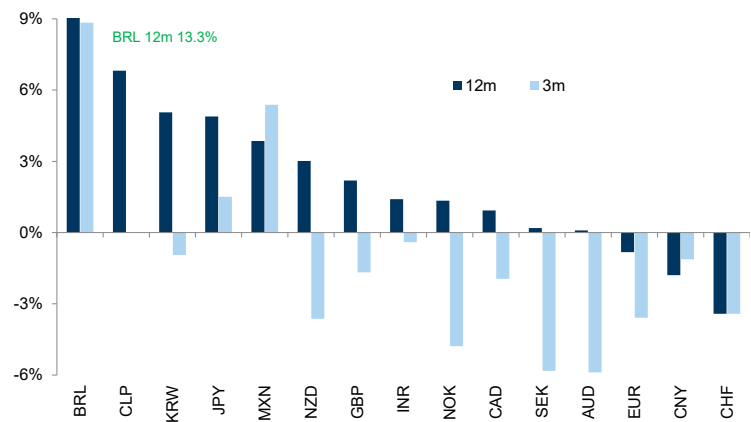
Exhibit 90: Recent performance of GSCI® Enhanced sectors
Weight signifies contribution to the GSCI® Enhanced index

	Current Weight (%)	Returns (%)		
		-1w	-1m	-1y
S&P GSCI	100.0	-2.8	-3.4	5.6
Energy	58.2	-3.1	-2.9	13.4
Industrial Metals	11.2	-5.3	-4.5	6.1
Precious Metals	6.4	-1.3	2.3	20.0
Agriculture	15.4	-2.6	-8.4	-19.7
Livestock	8.7	1.0	0.2	0.1

Source: Goldman Sachs, Goldman Sachs Global Investment Research

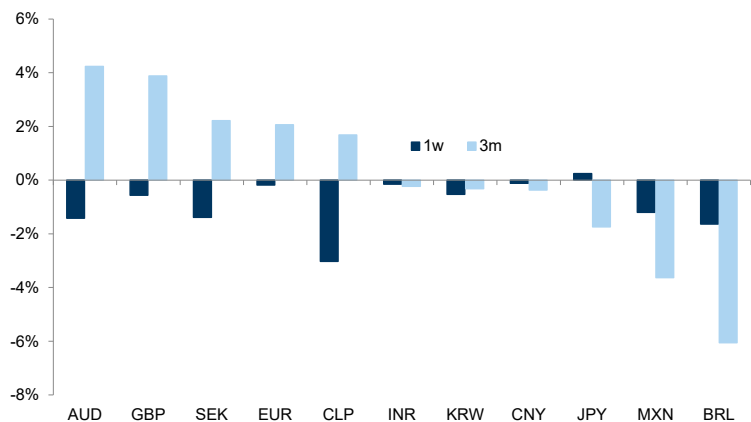
FX: Forecasts and forwards, recent performance and positioning

Exhibit 91: Our 3- and 12-month forecasts for dollar crosses



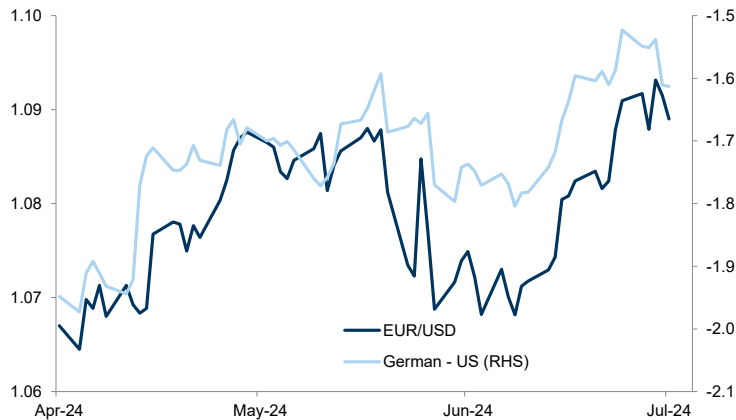
Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 92: Recent performance of dollar crosses
Percentage change over past 1 week, 3 months



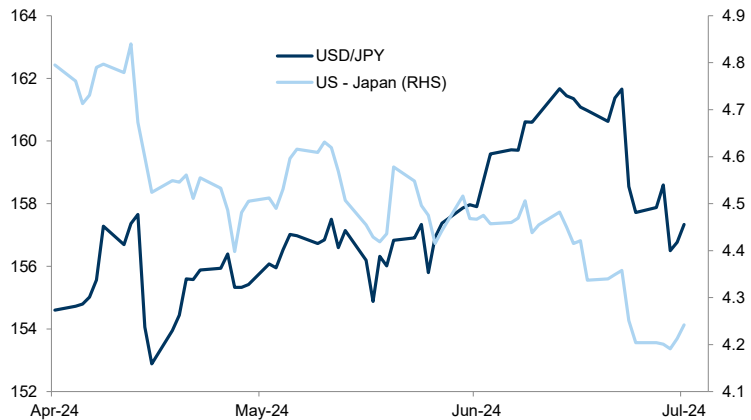
Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 93: EUR/USD against German - US 2y interest rate differentials past 3m



Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 94: USD/JPY against US - Japan 2y interest rate differentials past 3m



Source: Datastream, Goldman Sachs Global Investment Research

Disclosure Appendix

Reg AC

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