GOAL - Global Opportunity Asset Allocator

Rotation continuation but don't forget about 'fat and flat'

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- We are shifting more procyclical in our asset allocation tactically (3m). While there is potential for setbacks, as the last few weeks have shown, risks seem more symmetric in the near term. Near-term we continue to prefer credit (OW) vs. equity (N) owing to policy support, credit lagging in the recovery and as it is more sensitive to better growth momentum. On a 12m basis we keep our modestly pro-risk allocation with OW equities, commodities and cash, N credit and UW bonds - we see low return potential for 12m across assets.
- Our Risk Appetite Indicator is now at neutral levels. But since 1990 around periods of rising global PMIs from levels below 50, our RAI has generally increased; this points to a continuation of the rotation. Of course, the RAI momentum is very high - in other words, risk appetite has picked up a lot since March 23; historically this pointed to slowing equity returns, at least in the medium term. But growth pricing across and within assets is not bullish yet.
- Our other positioning and sentiment indicators are neutral in aggregate but there have been diverging signals. Systematic investor, equity fund flows, and futures positioning are still at bearish levels but there have been signs of bullish shifts from retail investors, including short-term risky vs. safe asset flows, and in options positioning. High cash holdings from retail investors coupled with bearish positioning from institutional investors increase right tail risk near-term.
- High equity risk premia and more growth optimism might support further valuation expansion. But elevated valuations will likely become a speed limit for returns eventually. The likelihood of a 'fat and flat' range with more 'risk off' episodes remains high, e.g. in the event of second waves - and there are risks outside of COVID-19, including US/China trade tensions, EM fragility and US political risks and a fiscal cliff, to mention some of the known unknowns.
- We continue to worry about elevated left tail risk in traditional balanced portfolios with less of a buffer from bonds. Most of our *Balanced Bear* strategies performed well in the drawdown but only a few did in the recovery. Looking at the cumulative performance shows that option overlays, quality stocks and Gold helped outperform vs. a simple 60/40 portfolio YTD. Call overwriting strategies look more attractive considering elevated levels of valuation and volatility.

Asset allocation: More procyclical 3m, modestly pro-risk 12m

1. In our last GOAL we were worried about the strong rebound in risky assets and high uncertainty on the timing and profile of the recovery of global growth. The positive shift in growth momentum and improvement of the virus newsflow came faster than expected and bearish positioning contributed to a strong 'risk on' move. While there is potential for setbacks, as the last few weeks have shown, risks seem more symmetric in the near term. **Our economists expect a strong pick-up in global growth - we have added procyclical exposure across assets on a tactical basis.**

Exhibit 1: Tactically more procyclical, modestly pro-risk for 12m

3-Month Horizon		12-Month Horizon	
Asset Class	**Weight****	**Asset Class**	**Weight****
Cash	**OW**	**Equities**	**OW**
Credit	**OW**	*STOXX Europe 600*	→
USD HY	↑	*MSCI Asia Pac ex Japan*	→
EMBI	↑	*TOPIX*	→
EUR HY	↑	*S&P 500*	→
EUR IG	→	**Commodities**	**OW**
USD IG	→	**Cash**	**OW**
Equities	**N**	**Credit**	**N**
STOXX Europe 600	↑	*EMBI*	↑
S&P 500	→	*USD HY*	→
MSCI Asia Pac ex Japan	→	*EUR HY*	→
TOPIX	→	*USD IG*	→
Commodities	**N**	*EUR IG*	→
10 yr. Gov. Bonds	**UW**	**10 yr. Gov. Bonds**	**UW**
Germany	↑	*Germany*	↑
Japan	→	*Japan*	→
US	↓	*US*	↓

** Total returns in local currency, MXAPJ in USD. ** Arrows denote preferences within asset classes.*

Source: Goldman Sachs Global Investment Research

We upgrade equities from UW to N for 3m - our equity strategy teams upgraded 3m targets across markets and see less downside (albeit only modest upside). We are neutral across regions for 12m but shift OW Europe for 3m (from N), supported by a pick-up in global growth, US political headwinds and EU policy tailwinds. Our credit strategy team pulled forward credit spread tightening from 2H and recommend moving down-in-quality. **We still prefer credit to equity on a 3m basis** (remain OW), in part due to relative valuations and policy support - credit has also lagged the equity recovery.

We shift to UW (from N) bonds for 3m - our rates team upgraded their yield forecasts and expect US 10y yields to end the year at 1.05% and German 10y at -0.25%. We prefer German to US duration, with the US-Germany 10-year rate differential to widen again. We are N commodities for 3m post the large oil price declines - our commodities team see further downside near term (ST Brent target $35/bbl) and prefer capex to opex commodities tactically. Finally, our FX team sees a stronger case for Dollar downside - they like longs in NOK in DM, as well as PLN in EM.

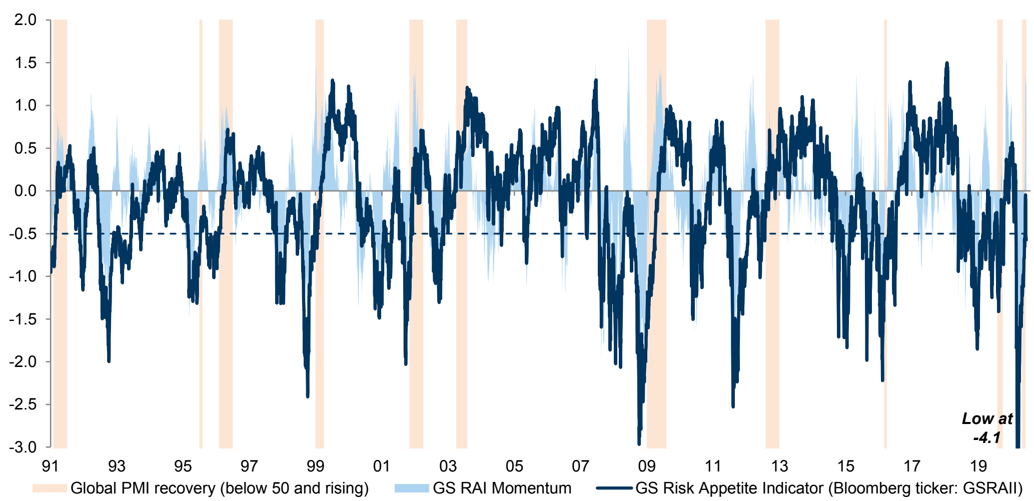
On a 12m basis we keep our modestly pro-risk allocation with OW equities, commodities and cash, N credit and UW bonds - we see low return potential for 12m across assets. Elevated valuations will likely become a speed limit for returns again. The likelihood of a 'fat and flat' range with more 'risk off' episodes remains high, e.g. in the event of second waves - and there are risks outside of COVID-19, including US/China trade tensions, EM fragility and US political risks and a fiscal cliff, to mention some of the known unknowns.

2. **At the beginning of June our Risk Appetite Indicator (RAI) turned neutral after reaching its most bearish levels ever in March** (Exhibit 2). As we highlighted at the end of May, the recent RAI increase came alongside signs of a positive shift in growth momentum - global PMIs have picked up and US data was broadly better-than-expected, indicating that this might be the deepest but also shortest US recession on record. In addition, fiscal support via the EU Recovery Fund, from Germany and a potential US infrastructure program and payroll tax cut added to investor optimism.

Since 1990 around periods of rising global PMIs from levels below 50, our RAI has generally increased. Of course, the RAI momentum, which is based on the 3-month change in risk premia across, is already very high - in other words, risk appetite has picked up a lot since March 23 - historically this pointed to slowing equity returns, at least in the medium term. And indeed June has been very volatile with a large 'risk off' move due to fears about a second COVID-19 wave, with an increase in cases in Beijing and the US (California, Texas).

Exhibit 2: Our RAI tends to turn before the trough in activity, but normally PMIs need to break 50 for it to turn positive

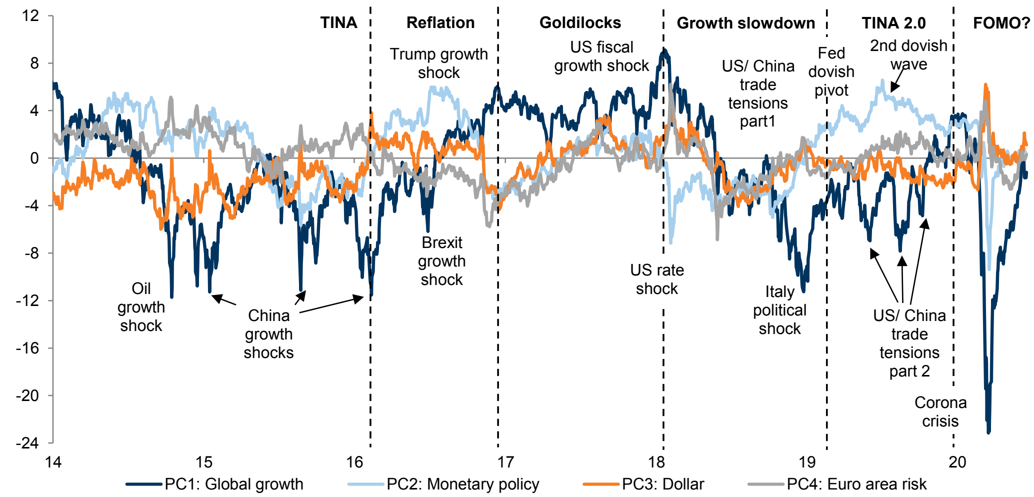
Orange shading denotes periods when Global PMIs are below 50 and recovering (ISM prior to 1998)



Source: Haver Analytics, Goldman Sachs Global Investment Research

3. **Importantly, since mid-May increased growth optimism has been the key driver of risk appetite.** In the early stages of the recovery, the policy support, both fiscal and monetary, reignited a strong search for yield and allowed investors to fade left tail risk. However, the recent pick-up in risk appetite has been due to more optimism on growth, with a continued increase in RAI PC1 'Global Growth', while RAI PC2 'Monetary Policy' has been range-bound (Exhibit 3). While monetary policy will remain very accommodative, it might struggle to boost risk appetite further near term - real yields are negative, nominal rates are close to the effective lower bound and central banks have already announced significant QE programs.

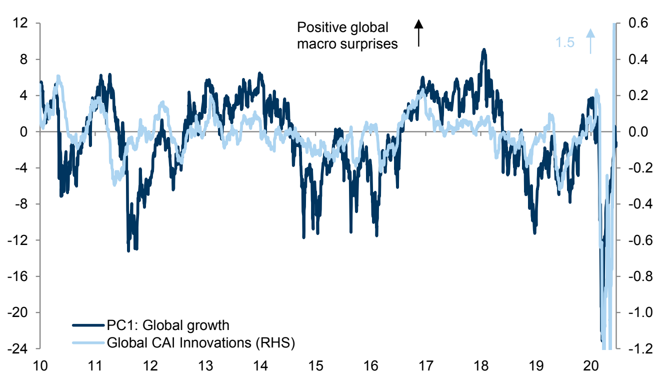
Exhibit 3: Growth sentiment has recovered alongside material policy support
RAI principal components



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

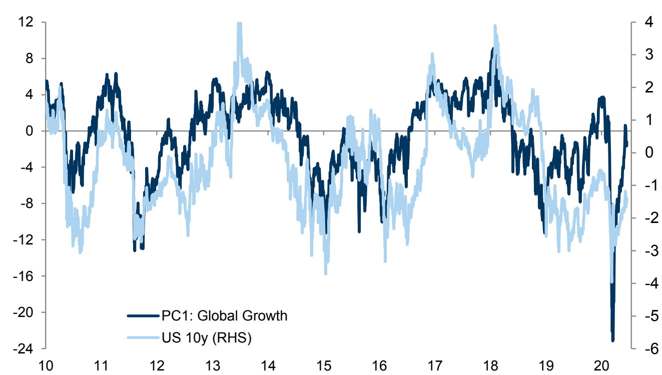
As a result we expect 'good news' to be 'good news', and growth to remain the main driver of cross asset performance. A related shift in cross-asset performance in June has been an increase in long-dated bond yields and broadly steeper yield curves across markets - this has been a big difference to the early part of the rebound in risk appetite. And global macro surprises, as measured by our Current Activity Indicator (CAI) Innovations, have turned sharply positive (Exhibit 4). But the risk of rotation frustration increases as markets turn more bullish on growth - it is unlikely that macro momentum and surprises remain as positive for long.

Exhibit 4: Macro data have materially surprised to the upside recently, turning sharply positive



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

Exhibit 5: Rebound in growth sentiment has driven higher longer-dated bond yields
1-year rolling z-scores



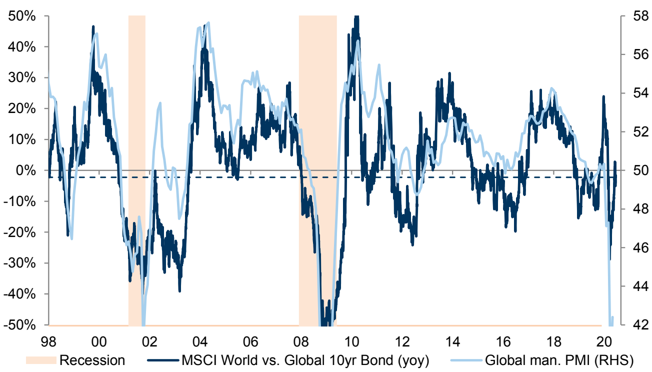
Source: Datastream, Goldman Sachs Global Investment Research

4. **And a key concern is that markets are already pricing a too optimistic recovery.** Owing to the extraordinary monetary and fiscal stimulus, investors faded left tail risks quickly resulting in a strong recovery in risky assets. Indeed, benchmarking global equity vs. bond performance to the global manufacturing PMI suggests that markets are already discounting a PMI close to 50 (Exhibit 6). But this overstates the extent of

growth optimism as equities initially recovered due to the search for yield.

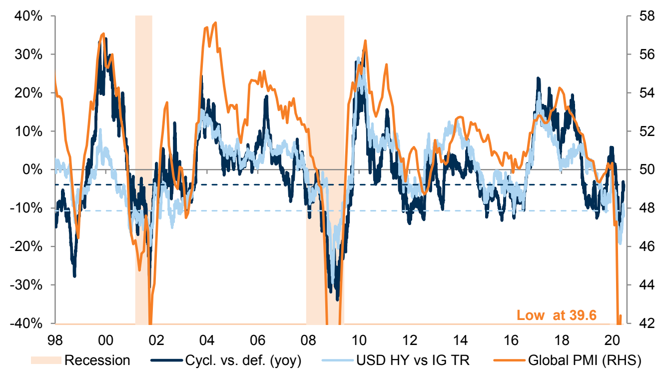
Growth pricing within assets still appears less bullish - cyclicals vs. defensives and USD IG vs. HY credit only started to reprice growth last month (Exhibit 7). The first leg of the equity rebound was driven by a narrow group of less cyclical, large cap 'growth stocks', boosting benchmark indices, without a material pick-up in growth expectations. This suggests tactically there is potential for more rotation within equities and HY vs. IG spread compression. However, compared with historical bear market recoveries, potential returns for equity benchmark indices and spread compression might be lower from here.

Exhibit 6: Across assets, markets have repriced growth views already since March 23



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

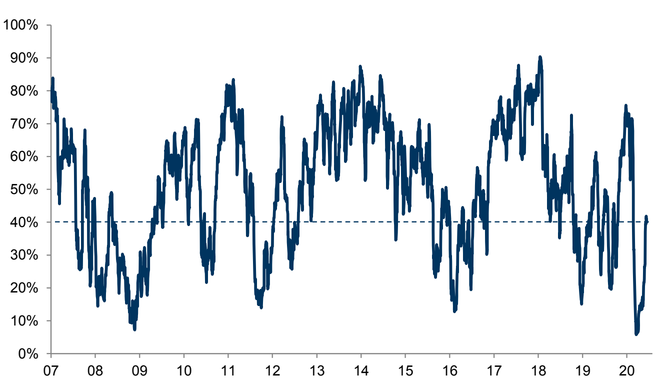
Exhibit 7: Procyclical rotation with risky assets started only at the end of May



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

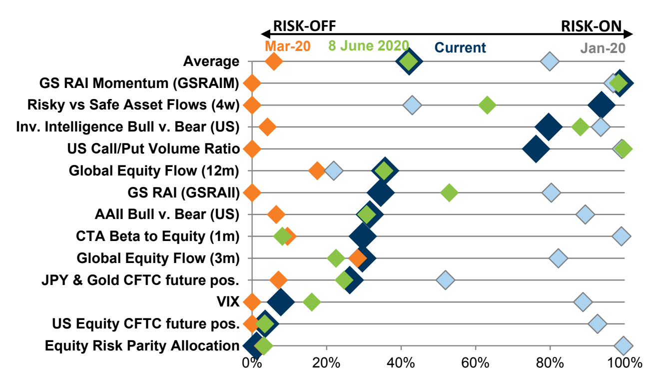
5. **Still more bullish sentiment and positioning lowers the hurdle rate for disappointment in the event of negative shocks.** Before the recent 'risk off' there were some signs of more bullish positioning of that. The broad positioning and sentiment metrics we track have only turned neutral in aggregate. However, there has been a large divergence with systematic investor, equity fund flows, and equity futures positioning still at bearish levels but a much more bullish shift from retail investors, options positioning and short-term (4 week) risky vs. safe asset fund flows.

Exhibit 8: Some sentiment indicators are turning from the lows
Average percentile of sentiment indicators since 2007



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

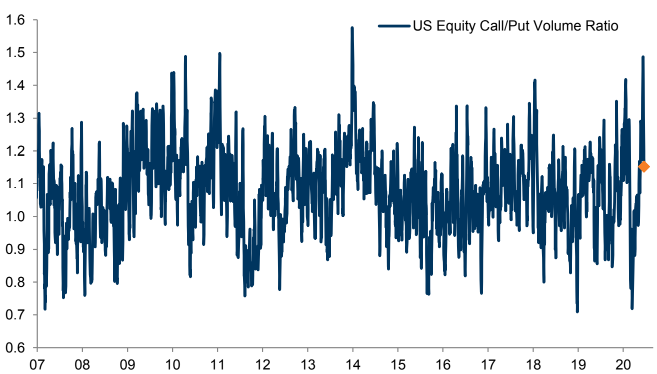
Exhibit 9: Most positioning indicators remain light but have started to increase sharply
Percentile of different sentiment indicators since 2007



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

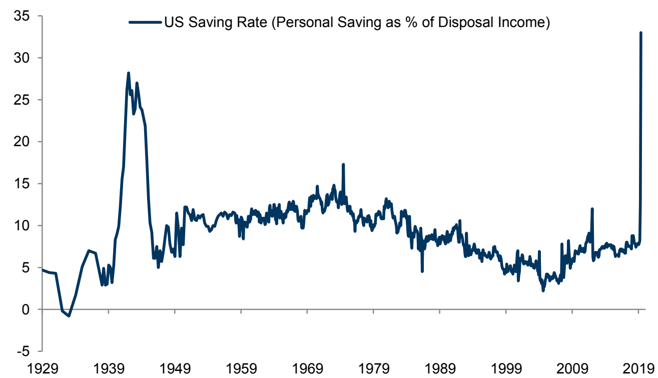
There has been a large spike in call/put volume ratios ahead of the recent 'risk off'. In fact, before there were several days when both the S&P 500 and the VIX were up - this indicates high demand for call options and is often a warning signal of increased market fragility. And retail investor activity has picked up - our options team has found the share of small amount trades (< US$2,000) and option volumes from one-contract trades has surged YTD. This follows a large spike in the US personal savings rate to all-time highs, in part due to government transfers and much lower consumption expenditure due to lockdowns (Exhibit 11). **High cash holdings from retail investors coupled with bearish positioning from institutional investors increases right tail risk.**

Exhibit 10: High demand for call options in early June
CBOE US Equity Call vs Put volume ratio (5-day average)



Source: Datastream, Goldman Sachs Global Investment Research

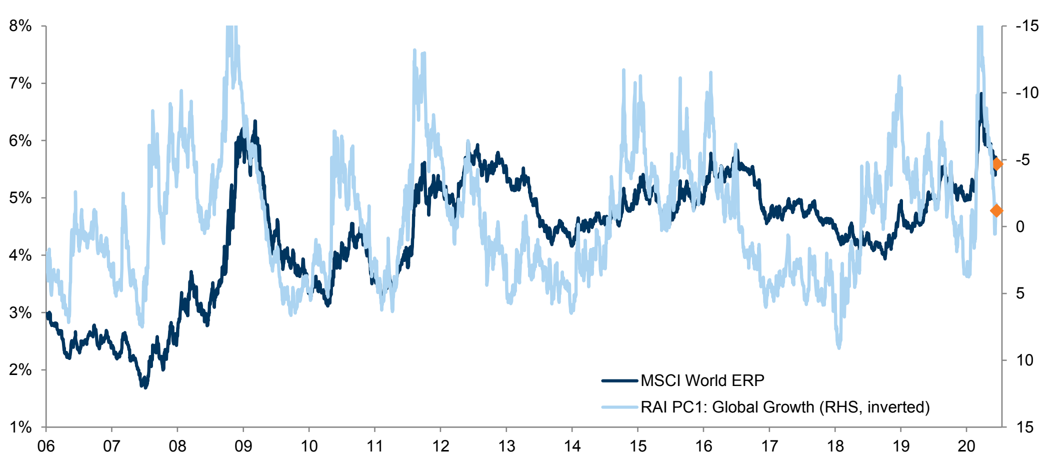
Exhibit 11: US savings rate spiked to record levels



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

6. **With global equity risk premia (ERP) at elevated levels and better growth, the relative attraction of equities for both retail and institutional investors remains high** (Exhibit 12). This presents an upside risk to our 3m neutral equity view - investor sentiment and positioning might overshoot, at least temporarily. Based on the recent change in growth sentiment, equity risk premia could decline further and assuming anchored bond yields drive more valuation expansion, at least in the near term - all else equal a 1% decline in the ERP is usually worth 15-20% return.

Exhibit 12: Global equity risk premia remain elevated and should decline with better growth sentiment

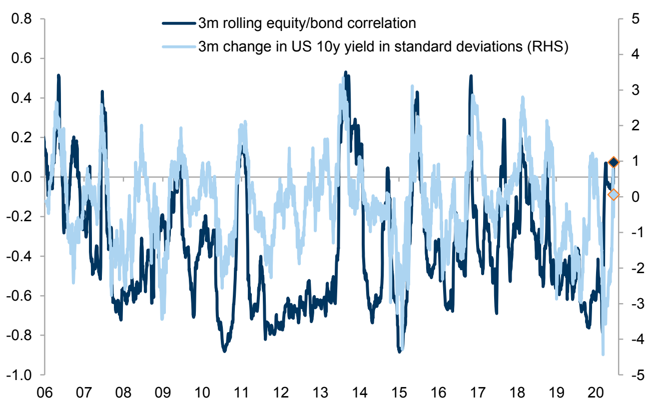


Source: Datastream, Haver Analytics, Goldman Sachs Global Investment Research

Equities should also be able to buffer rising bond yields as long as they come alongside better growth and are gradual (Exhibit 13). In fact, early in a recovery rising bond yields can accelerate a procyclical rotation, especially within equities. But the drivers of higher yields are critical - higher breakeven inflation supports a narrative of better (nominal) growth and with central banks anchoring yields, real yields might decline even further, resulting in more search for yield.

However, without strong growth rising yields might eventually weigh on valuations of risky assets due to a repricing of inflation risk. And rising real yields might also fuel concerns on rising bond supply due to fiscal spending or policy tightening and limits to monetary easing. With nominal yields close to the zero bound, declines in inflation expectations might push up real yields again - **the S&P 500 remains very negatively correlated with US 10-year TIPS yields** (Exhibit 14).

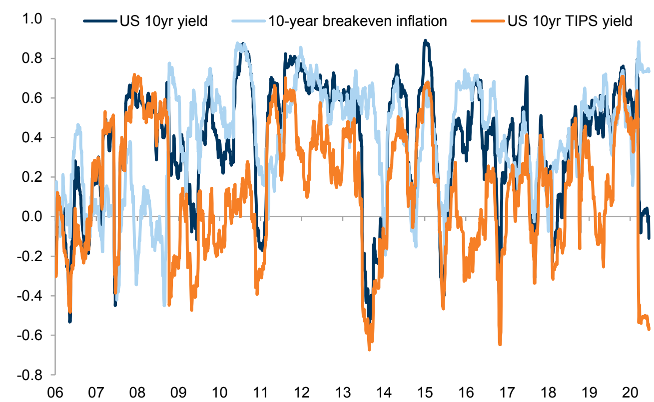
Exhibit 13: If bond yields rise too fast equities might struggle to digest higher yields



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

Exhibit 14: If real yields are leading bond yields higher they are likely to weigh on equities

S&P 500 correlation with different US bond yields

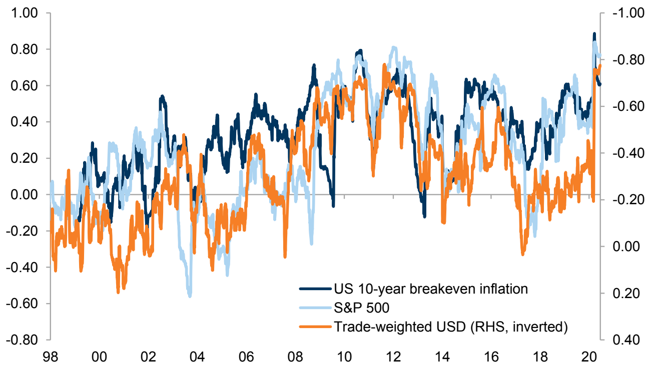


Source: Datastream, Haver Analytics, Goldman Sachs Global Investment Research

7. **Also, US 10-year breakeven inflation remains highly correlated with oil prices** (Exhibit 15). In fact, the S&P 500 and the trade-weighted US$ have also been the most correlated with (long-dated) oil prices since the late 1990s. As our commodities team has highlighted, due to elevated oil inventories near-term the risk of sharp declines in oil prices remains - their short-term Brent price forecast is $35/bbl and carry from the futures roll remains very negative.

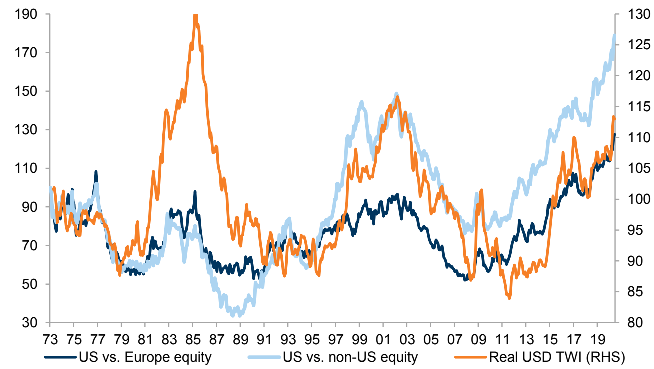
Sharp oil price declines can drive setbacks on procyclical trades such as Dollar downside and upside to non-US assets. Our FX team sees potential for broad Dollar weakness to extend (with a potential 20% move down on a trade-weighted basis in the coming years) - and a weak Dollar historically coincided with outperformance of non-US assets, e.g. Europe vs. US equity (Exhibit 16). But both are closely linked to oil near term - from that perspective a short position on oil could be an interesting tactical hedge for procyclical exposure across assets.

Exhibit 15: Both the S&P 500 and the Dollar have become very correlated with longer-dated oil prices
6m rolling correlation of weekly returns



Source: Bloomberg, Goldman Sachs Global Investment Research

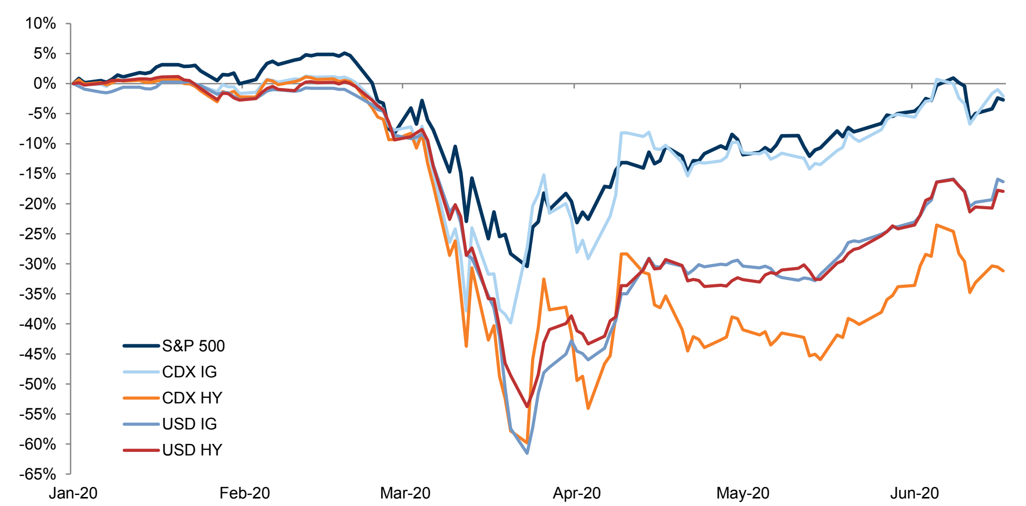
Exhibit 16: Broad Dollar weakness has historically coincided with non-US vs. US equity performance



Source: Haver Analytics, Goldman Sachs Global Investment Research

8. **The recovery in oil prices, alongside better growth sentiment, has also helped narrow the gap in credit vs. equity performance** - on a beta-adjusted basis, broad credit indices have mostly lagged the S&P 500 since March 23 (Exhibit 17). As we recently wrote, gaps in performance between equity and credit are often due to different sensitivity to growth momentum, index composition, supply/demand imbalances and support from monetary policy.

Exhibit 17: The credit vs. equity performance gap is narrowing
Cash and synthetic credit beta-adjusted excess returns vs. S&P 500 total returns



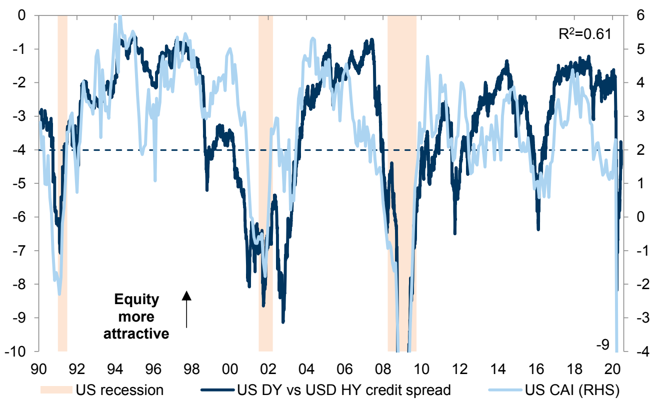
Source: Datastream, Goldman Sachs Global Investment Research

CDX IG recovered strongly alongside S&P 500, boosted by corporate bond QE programs from central banks. However, due to record IG credit issuance, cash credit has lagged relative to CDX IG resulting in a record basis between markets. And USD HY credit has lagged, both cash credit and CDS. USD HY credit has larger sector weights in Energy and Materials while the S&P 500 has been boosted by a larger weight in the strong performing Tech sector. Similarly, EM USD credit has lagged MSCI EM due to larger weights in commodity-exposed economies in LatAm and the Middle East, while MSCI

EM is much more skewed to Asia, which eased lockdowns due to COVID-19 early.

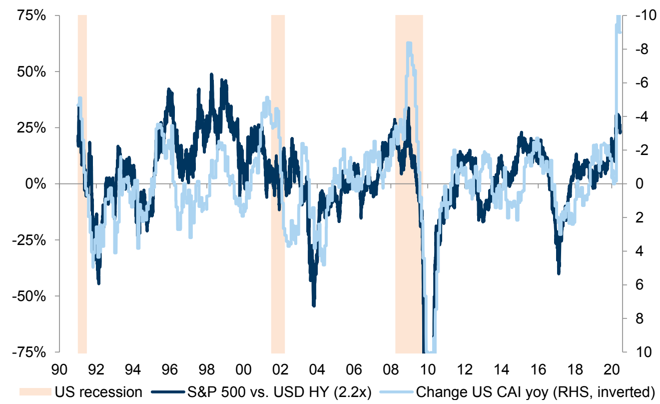
We continue to prefer credit to equity on a 3m horizon. With credit lagging equity YTD, relative valuations are in-line with the long-run average, despite strong and more direct policy support. And with a continued growth pick-up we would expect relative valuations of credit to normalise further vs. equity (Exhibit 18). Independent of compositional differences, credit tends to be more sensitive to growth momentum - during sharp growth slowdowns, riskier credit tends to underperform equities on a beta-adjusted basis but it tends to catch up with better growth (Exhibit 19).

Exhibit 18: While credit valuations have re-rated ahead of growth they are not expensive vs. equity



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

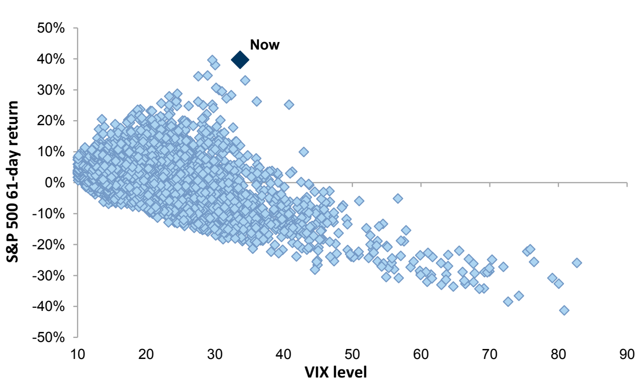
Exhibit 19: With the expected growth acceleration we would expect the credit vs. equity performance gap to narrow



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

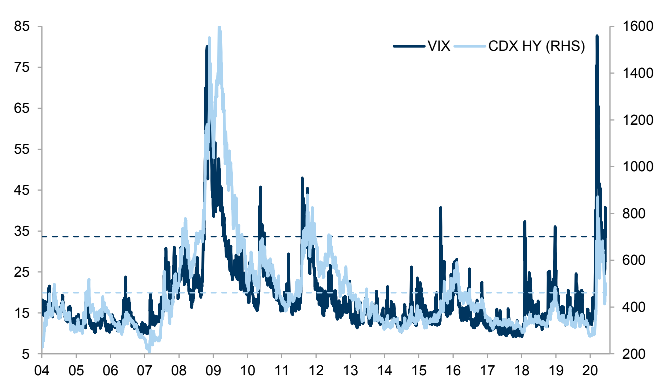
9. **Similar to credit spreads, the VIX has lagged during the strong and sharp equity rally.** Based on the 40% S&P 500 return since March 23, the VIX should be much lower - the gap between VIX and S&P 500 returns is one of the largest on record. In part that reflects some demand for upside hedges as mentioned earlier but also maybe that VIX (and credit markets) have been less optimistic on growth so far and that equities have run up a bit too fast. But the VIX has also lagged relative to the tightening of CDX HY - **this points to short equity volatility strategies currently being more attractive relative to long down-in-quality credit investments**.

Exhibit 20: The VIX remained stubbornly high during the S&P 500 rally



Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 21: In the recent procyclical rotation CDX HY tightened ahead of the VIX



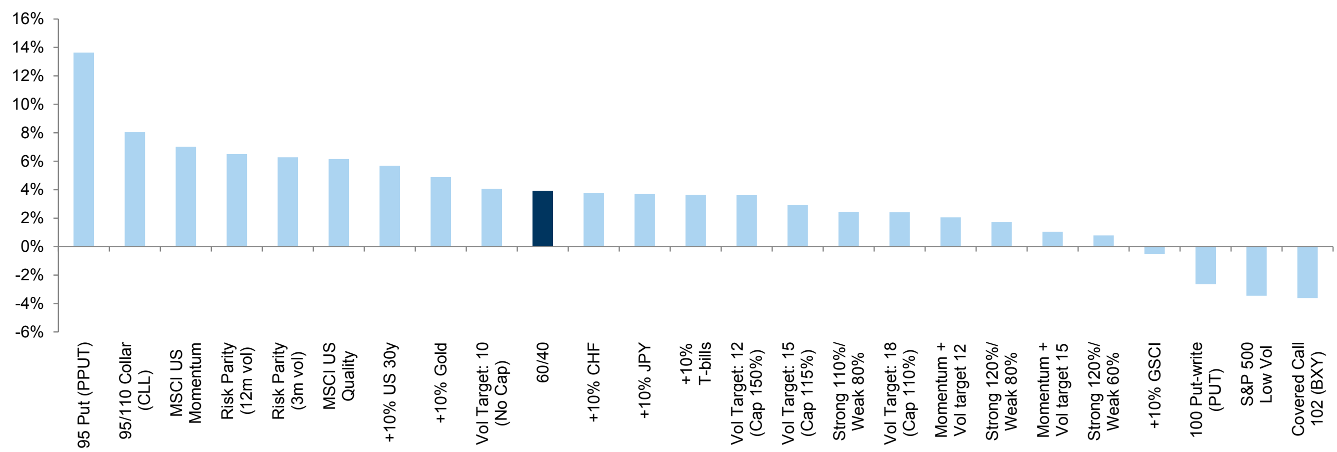
Source: Bloomberg, Goldman Sachs Global Investment Research

10. **We continue to worry about elevated left tail risk in traditional balanced portfolios with less buffer from bonds.** Most of the strategies we recommended in our Balanced Bear research have outperformed in the drawdown but lagged in the recovery. Looking at the cumulative performance YTD shows that option overlays, quality stocks and Gold helped outperform vs. a simple 60/40 portfolio. We still recommend allocations to Gold - our commodities team have just upgraded their 3/6/12m gold forecasts to 1800/1900/2000 (from 1600/1650/1800) - and we also still like quality growth companies globally.

However, which strategy protects balanced portfolios best also depends on the source of shock. In the event of a real yield shock, Gold and quality stocks might not help as much as they used to. We think selective option overlays make more sense as they protect independent of the shock - we still like put spreads to hedge for smaller corrections. Also, call overwriting performed particularly badly YTD - however, with the VIX and implied equity volatility elevated, we think it could be a good strategy to buffer downside risk from here after strong rallies (see *Cross-asset volatility* section below).

Exhibit 22: Option strategies, quality stocks and Gold helped multi-asset portfolios outperform this year

Strategies to reduce portfolio risk from our Balanced Bear Part 2-report (performance YTD)



Source: Datastream, Bloomberg, Goldman Sachs Global Investment Research

Cross-asset volatility: Not ‘flat’ but still ‘fat’ - vol remains elevated

Exhibit 23: Volatility has decreased from historical highs, but remains elevated for risky assets
Percentile 10y

	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:	27.3	26.9	25.2	25.7	29.9	24.4	1.7	4.5	1.3	2.7	75.9	80.6	75.1	48.4	17.9	21.6	7.3	6.7	9.8
Percentile:	*96%*	*91%*	*90%*	*96%*	*92%*	*87%*	*8%*	*41%*	*33%*	*20%*	*96%*	*96%*	*91%*	*94%*	*75%*	*56%*	*33%*	*13%*	*67%*
1M change:	2.5	2.4	0.2	3.4	2.7	2.2	-0.6	0.2	-0.5	-0.1	11.3	12.1	-6.7	-9.5	-3.0	0.5	0.7	-0.3	-0.8
Average:	15.7	19.4	19.9	15.4	21.2	17.3	3.1	5.0	2.2	3.8	50.6	46.6	57.1	32.1	15.5	22.3	8.9	9.3	8.9
95th:	26.1	30.9	27.4	24.6	32.2	29.5	4.9	7.1	5.3	6.2	73.1	77.1	86.7	49.9	23.0	34.2	13.9	12.7	12.7
5th:	10.0	12.3	13.8	10.3	15.2	10.4	1.5	3.5	0.9	2.2	38.7	30.7	40.3	17.1	9.7	15.2	5.2	5.8	5.8
Realised (%)																			
1-month:	28.4	32.2	28.7	27.3	22.3	24.3	1.5	4.8	1.0	2.8	84.2	78.8	73.6	54.5	15.7	23.4	7.7	7.3	9.9
Percentile:	*93%*	*91%*	*87%*	*94%*	*91%*	*93%*	*11%*	*63%*	*45%*	*39%*	*98%*	*97%*	*95%*	*92%*	*65%*	*75%*	*52%*	*41%*	*82%*
Average:	14.4	18.7	19.8	14.6	14.5	13.7	2.8	4.6	1.6	3.4	38.6	34.1	43.9	35.0	15.0	20.2	8.2	8.5	8.4

Source: Goldman Sachs Global Investment Research

After declining from the extreme levels reached in March, cross-asset volatility spiked again last week (Exhibit 24). FX and rates volatility declined most across assets. The lower level of rates and the more limited scope of central banks from here are likely to maintain rates volatility at low levels. After reaching a local low around the low 20s, VIX is now around 35 (spiking above at c. 45 last week). Equity markets continue to realize a high level of volatility as uncertainty remains high and investor sentiment is shifting quickly.

Cross-asset skew has declined materially over the last month (Exhibit 25) **- equity investors have hedged the upside tails with options.** At the start of June, spot/vol correlation was less negative, short-dated call skew was more expensive and the call/put volume ratio reached stretched levels. After last week’s risk-off move, this has largely reversed, but there is still a large amount of call open interest on the June expiry.

With VIX still around 35, covered call strategies appear attractive, in particular after equity rallies. Historically, we found at these levels of VIX and S&P 500 drawdown, the asymmetry for 1m return of BXY relative to S&P 500 return improves (Exhibit 26). The BXY index, which tracks the performance of systematically selling a 2% OTM call on S&P 500 and holding the underlying, has materially lagged since March given the sharp recovery (Exhibit 27).

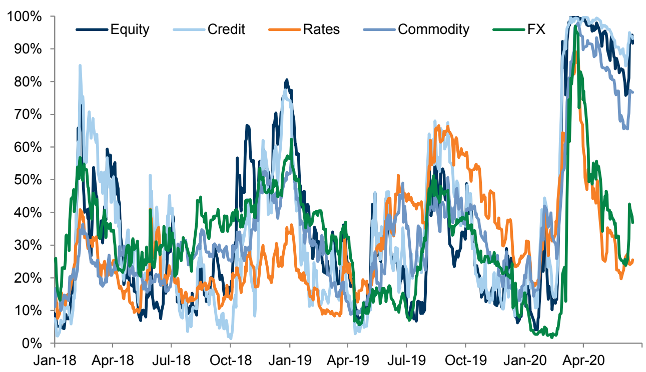
Over the last month investors became more positive on the Euro (Exhibit 28). After being positive at the start of June, short-maturity EUR/USD risk reversals have turned negative (Exhibit 29). While the increase in implied volatility is making outright call options on EUR more expensive, OTM calls on EUR/USD funded by OTM puts now have a much more attractive pricing.

Equity volatility term structures are inverted, in particular in Europe. Long-dated vol on European equities appears cheap vs. US (Exhibit 30) - 12m calls on EURO STOXX 50 financed by S&P 500 calls also appear attractive due to the rolldown (Exhibit 30). Shorter term, MSCI EAFE volatility is trading below S&P 500 volatility (Exhibit 32), providing an attractive way to hedge the right tail for non-US equity (including FX exposure).

Finally, we still think longer-dated equity puts are expensive, especially for S&P 500. They could be an attractive source of carry, especially as credit spreads continued to normalise. And as we recently discussed, selling longer-dated deep OTM equity puts could help finance tail hedges on rates via long US breakeven inflation or US 30-year payer swaptions where volatility appears low and has disconnected YTD (Exhibit 33). Or they could finance some credit protection (Exhibit 34).

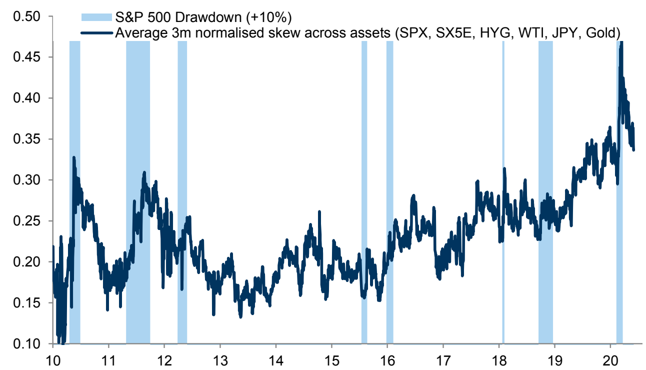
Exhibit 24: Cross-asset volatility spiked again

3m implied volatility percentile (last 10y)



Source: Goldman Sachs Global Investment Research

Exhibit 25: Cross asset skew declined since March



Source: Goldman Sachs Global Investment Research

Exhibit 26: Buy-write strategies have more chance to outperform at this level of volatility and after a strong rally

BXY vs S&P 500 1-month return

Average Performance

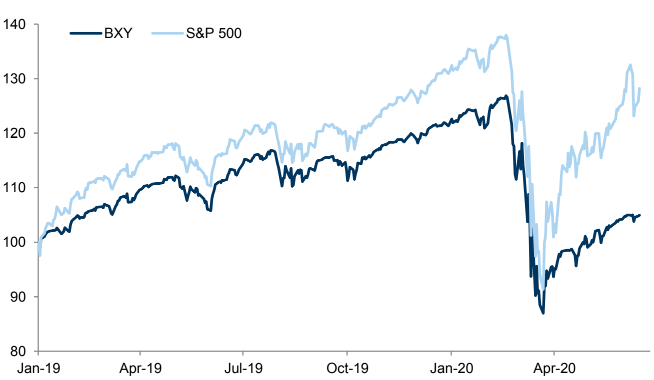
S&P Drawdown more than...	VIX Above... 10	15	20	25	30
0%	-0.02%	0.01%	0.11%	0.17%	0.21%
-5%	0.04%	0.04%	0.09%	0.14%	0.19%
-10%	0.28%	0.28%	0.28%	0.13%	0.13%
-15%	0.32%	0.32%	0.29%	0.16%	0.14%
-20%	0.01%	0.01%	0.02%	0.09%	0.17%
-25%	-0.10%	-0.10%	-0.10%	-0.07%	-0.06%

Hit Ratio: % of positive return

S&P Drawdown more than...	VIX Above... 10	15	20	25	30
0%	61%	60%	61%	61%	61%
-5%	61%	61%	61%	60%	61%
-10%	64%	64%	63%	58%	58%
-15%	62%	62%	62%	57%	56%
-20%	54%	54%	54%	55%	57%
-25%	50%	50%	50%	50%	52%

Source: Bloomberg, Goldman Sachs Global Investment Research

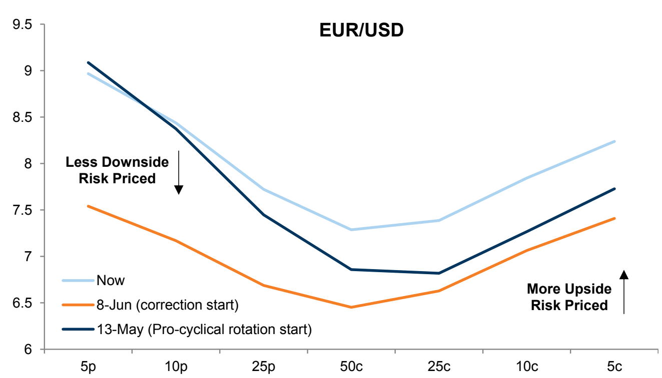
Exhibit 27: Buy-write strategies have lagged during the recovery



Source: Bloomberg, Goldman Sachs Global Investment Research

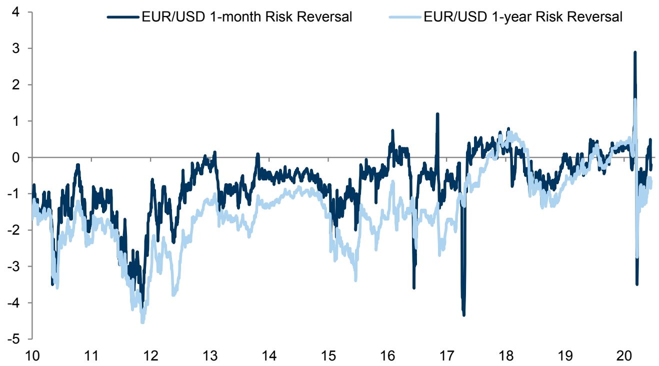
Exhibit 28: After pricing less downside risk last week, EUR/USD vol moved higher

3m EUR/USD implied volatility



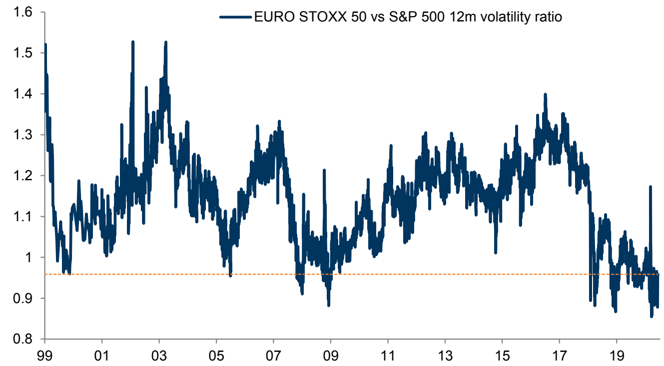
Source: Goldman Sachs Global Investment Research

Exhibit 29: Risk reversal moved into negative territory recently
25-delta EUR/USD Risk Reversal



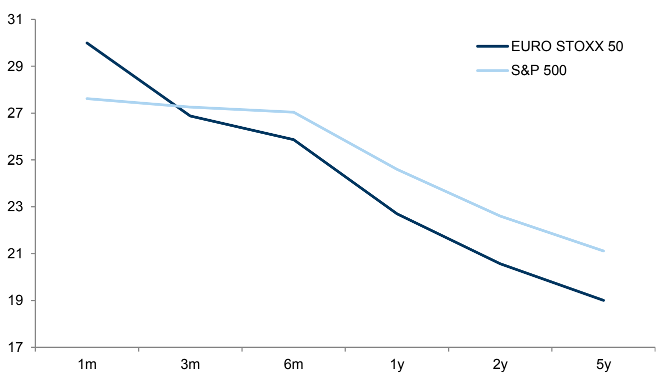
Source: Goldman Sachs Global Investment Research

Exhibit 30: Long-dated vol in Europe is cheap



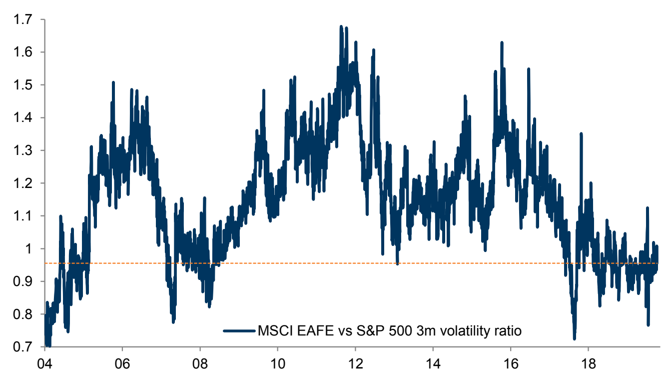
Source: Goldman Sachs Global Investment Research

Exhibit 31: Volatility term structure is much steeper in Europe



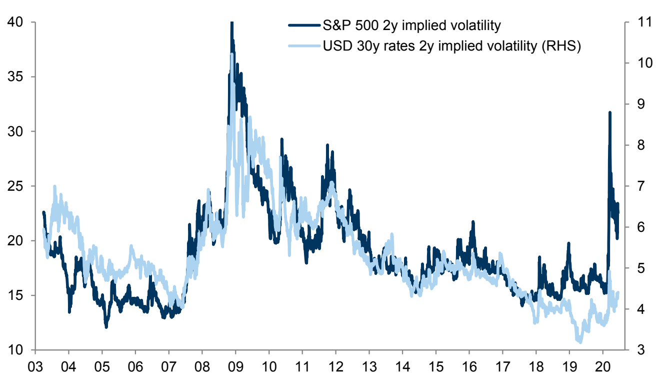
Source: Goldman Sachs Global Investment Research

Exhibit 32: MSCI EAFE volatility is at historical low compared with S&P 500



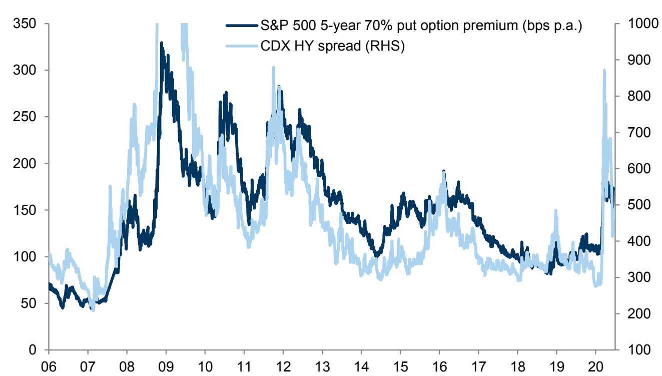
Source: Goldman Sachs Global Investment Research

Exhibit 33: There is little volatility priced for long-term rates in the next 2 years
2-year implied ATM volatility



Source: Goldman Sachs Global Investment Research

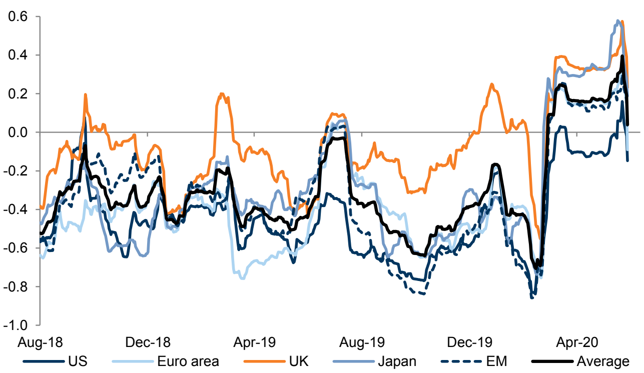
Exhibit 34: Longer-dated equity puts might help finance some credit protection



Source: Goldman Sachs Global Investment Research

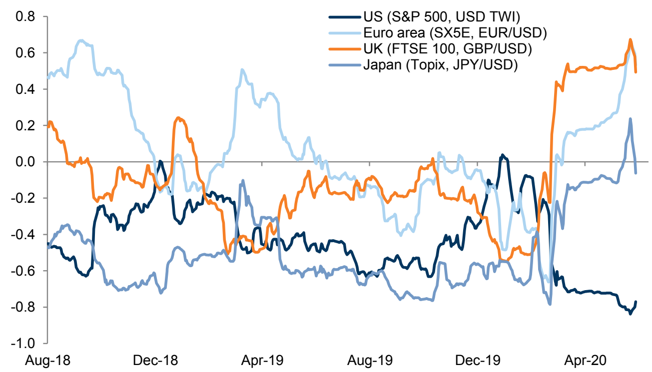
Cross-asset correlation: Equity/bond correlation more negative again

Exhibit 35: 3m rolling equity/bond correlation of weekly returns



Source: Datastream, Goldman Sachs Global Investment Research

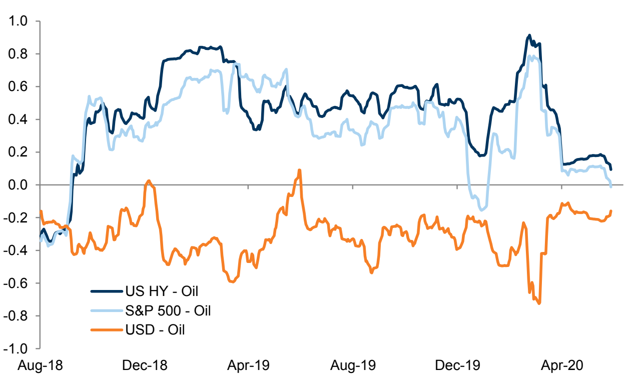
Exhibit 36: 3m rolling equity/FX correlation of weekly returns



Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 37: 3m rolling commodity price correlation of weekly % changes with different assets

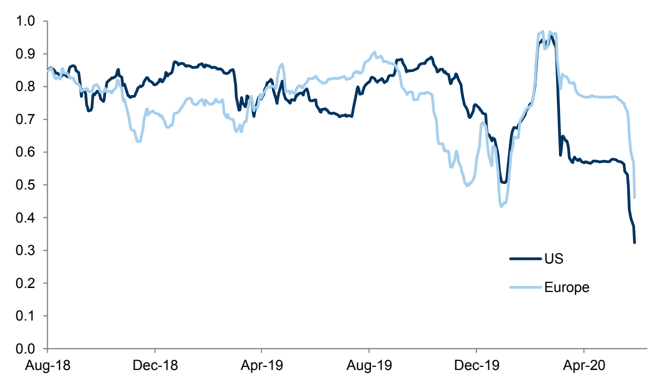
US HY returns, oil, copper and USD TWI spot return



Source: Datastream , Goldman Sachs Global Investment Research

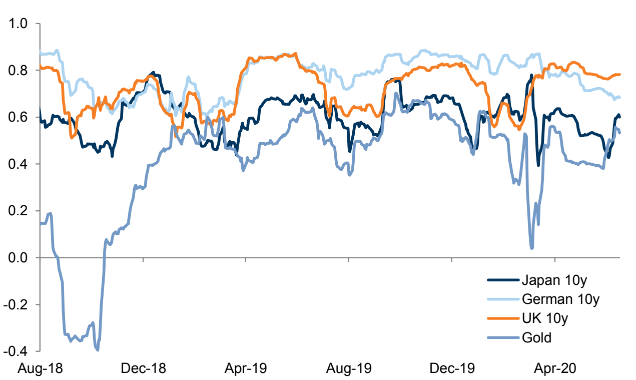
Exhibit 38: 3m rolling equity vol/CDS correlation of weekly level changes

CDX HY for the US, iTraxx Xover for Europe; ATM implied vol for S&P 500 and Euro Stoxx 50



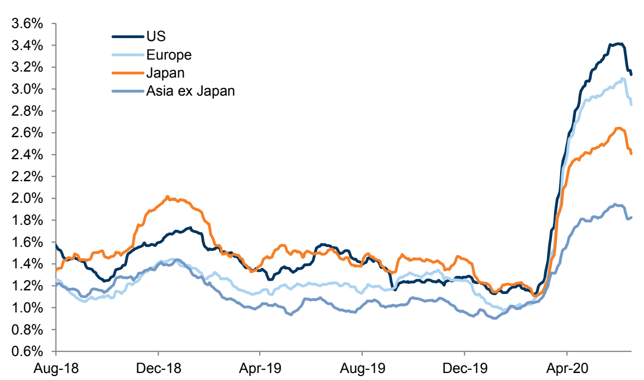
Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 39: 3m rolling correlation of weekly returns with US 10y Treasury returns



Source: Datastream, Goldman Sachs Global Investment Research

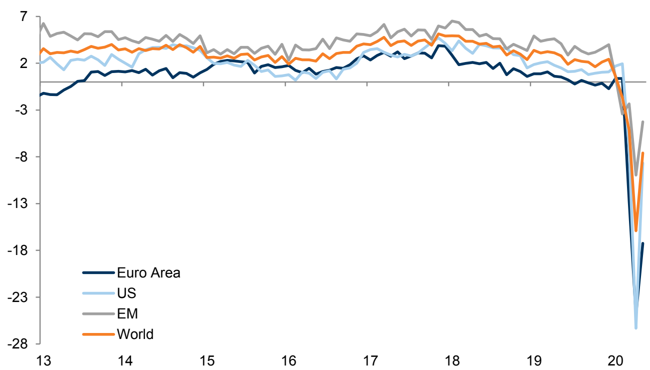
Exhibit 40: Cross-sector dispersion of weekly returns for regional equity indices



Source: Datastream, Goldman Sachs Global Investment Research

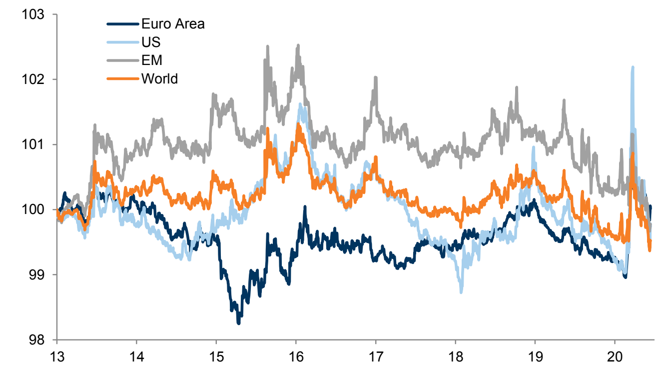
Macro monitor: growth rebound after sharp deceleration

Exhibit 41: Current Activity Indicators (CAI)



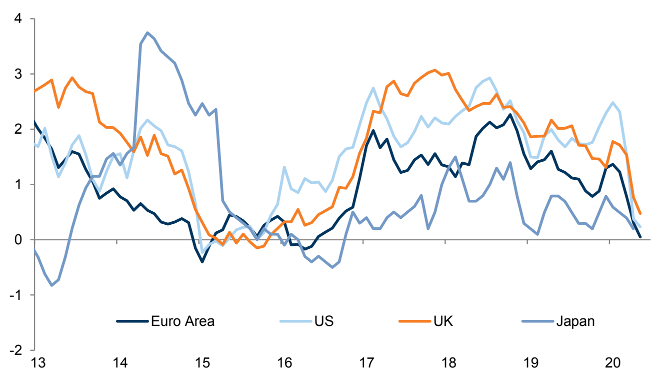
Source: Goldman Sachs Global Investment Research

Exhibit 42: Financial Condition Indices (FCI)



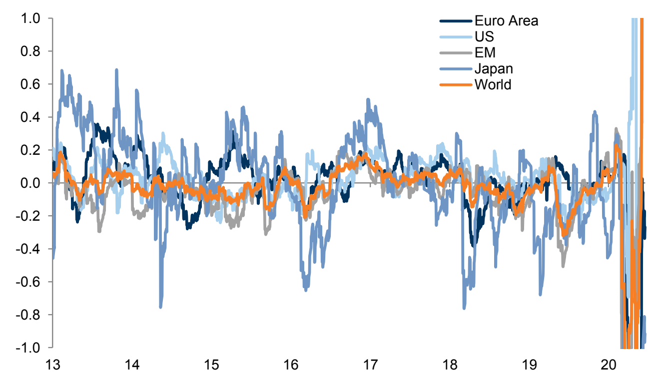
Source: Goldman Sachs Global Investment Research

Exhibit 43: Inflation (CPI, yoy)



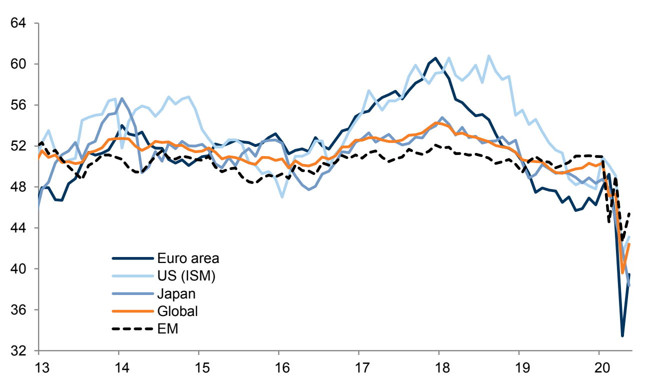
Source: Goldman Sachs Global Investment Research

Exhibit 44: Current Activity Indicator Innovations



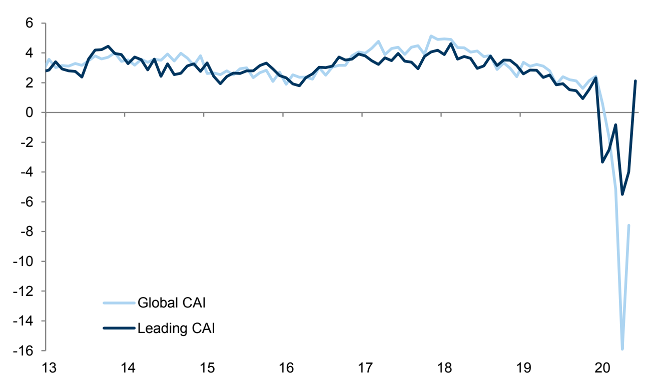
Source: Goldman Sachs Global Investment Research

Exhibit 45: Manufacturing PMIs



Source: Haver Analytics, Goldman Sachs Global Investment Research

Exhibit 46: Global Current Activity Indicator (CAI) and Leading Global Activity Indicator (LCAI)



Source: Goldman Sachs Global Investment Research

Key Macro Forecasts

Exhibit 47: GS forecasts across asset classes

	Return in % over last				Current	Forecasts				Up/ (downside) in %		
	12 m	3 m	1 m	YTD	Level	3m	6m	12m	Unit	3m	6m	12m
S&P 500 ($)	9.9	23.7	8.9	-2.7	3113	2950	3000	3100	Index	-5.3	-3.6	-0.4
Stoxx Europe 600 (€)	-0.7	27.2	11.8	-10.5	366	340	360	370	Index	-7.1	-1.6	1.1
MSCI Asia-Pacific Ex-Japan ($)	4.3	20.5	10.0	-6.5	512	525	480	510	Index	2.6	-6.2	-0.3
Topix (¥)	5.8	26.6	9.2	-6.6	1587	1600	1550	1675	Index	0.8	-2.3	5.5
10 Year Government Bond Yields												
US	16.5	3.2	-0.8	13.5	0.73	0.95	1.04	1.24	%	22 bps	30 bps	50 bps
Germany	2.0	-0.1	-1.0	2.4	-0.43	-0.35	-0.26	-0.06	%	8 bps	16 bps	36 bps
Japan	-1.1	0.0	-0.2	-0.3	0.02	0.05	0.09	0.10	%	3 bps	8 bps	8 bps
UK	7.7	3.9	0.5	6.7	0.19	0.35	0.39	0.54	%	16 bps	20 bps	35 bps
Credit												
Bloomberg Barclays US IG	11.0	9.6	4.0	4.8	144	172	161	137	Bps	28 bps	17 bps	-7 bps
Bloomberg Barclays US HY	2.9	12.4	7.5	-1.9	553	607	583	518	Bps	54 bps	30 bps	-35 bps
iBoxx EUR IG	0.7	3.7	2.8	-1.0	146	177	165	142	Bps	31 bps	18 bps	-5 bps
BAML EUR HY	0.2	12.8	7.0	-4.3	499	561	533	498	Bps	62 bps	34 bps	-1 bps
JP Morgan EMBI Div.	2.7	9.7	6.1	-2.2	469	474	477	480	Bps	5 bps	8 bps	11 bps
Commodities												
WTI	-26.9	40.9	37.7	-37.9	38	36	42	48.5	$/bbl	-5.2	10.6	27.8
Brent	-34.0	37.4	25.0	-38.5	41	39	45	52.5	$/bbl	-4.3	10.4	28.8
Copper	-1.3	11.9	11.3	-6.6	5741	6000	6250	6500	$/mt	4.5	8.9	13.2
Gold	30.5	13.5	0.2	15.0	1748	1800	1900	2000	$/troy oz	3.0	8.7	14.4
FX												
EUR/USD	0.0	2.3	3.7	0.0	1.12	1.12	1.15	1.17		-0.2	2.5	4.3
USD/JPY	-1.3	-0.1	-0.1	-1.3	107	107	105	105		-0.2	-2.1	-2.1
GBP/USD	-0.1	4.4	3.4	-5.3	1.25	1.27	1.31	1.36		1.3	4.5	8.5
USD/BRL	34.7	4.5	-9.8	30.4	5.25	5.0	4.9	4.8		-4.7	-6.6	-8.5
USD/RUB	8.5	-7.4	-5.6	12.2	69.66	69	67	65		-0.9	-3.8	-6.7
USD/INR	9.0	2.6	0.8	6.7	76.16	77	76	75		1.1	-0.2	-1.5
USD/CNY	2.3	1.1	-0.2	1.7	7.09	7.25	7.15	7.00		2.3	0.9	-1.2

Source: Bloomberg, Datastream, iBoxx, S&P, BAML, Goldman Sachs Global Investment Research

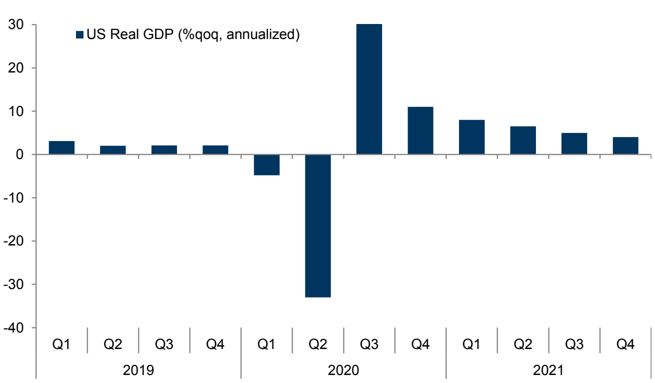
Exhibit 48: GS real GDP growth forecasts vs. consensus

% yoy	2019	2020E		2021E
	Realized	GS	Consensus*	GS
USA	2.3	-4.2	-5.7	6.4
Japan	0.7	-5.6	-4.9	3.3
Euro area	1.2	-9.4	-8.0	8.8
UK	1.4	-10.4	-8.0	7.0
Advanced Economies	1.8	-6.5	-6.1	6.6
Emerging Markets	4.2	-1.1	-0.1	6.5
World	3.1	-3.6	-3.7	6.6

** Bloomberg Consensus*

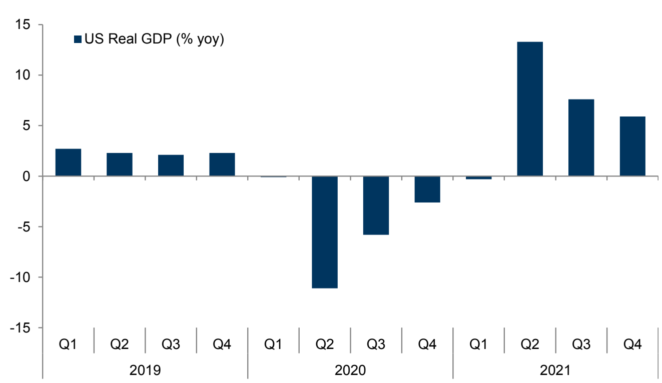
Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 49: GS forecasts path for US real GDP
%qoq, annualised



Source: Goldman Sachs Global Investment Research

Exhibit 50: GS forecasts path for US real GDP
%yoy



Source: Goldman Sachs Global Investment Research

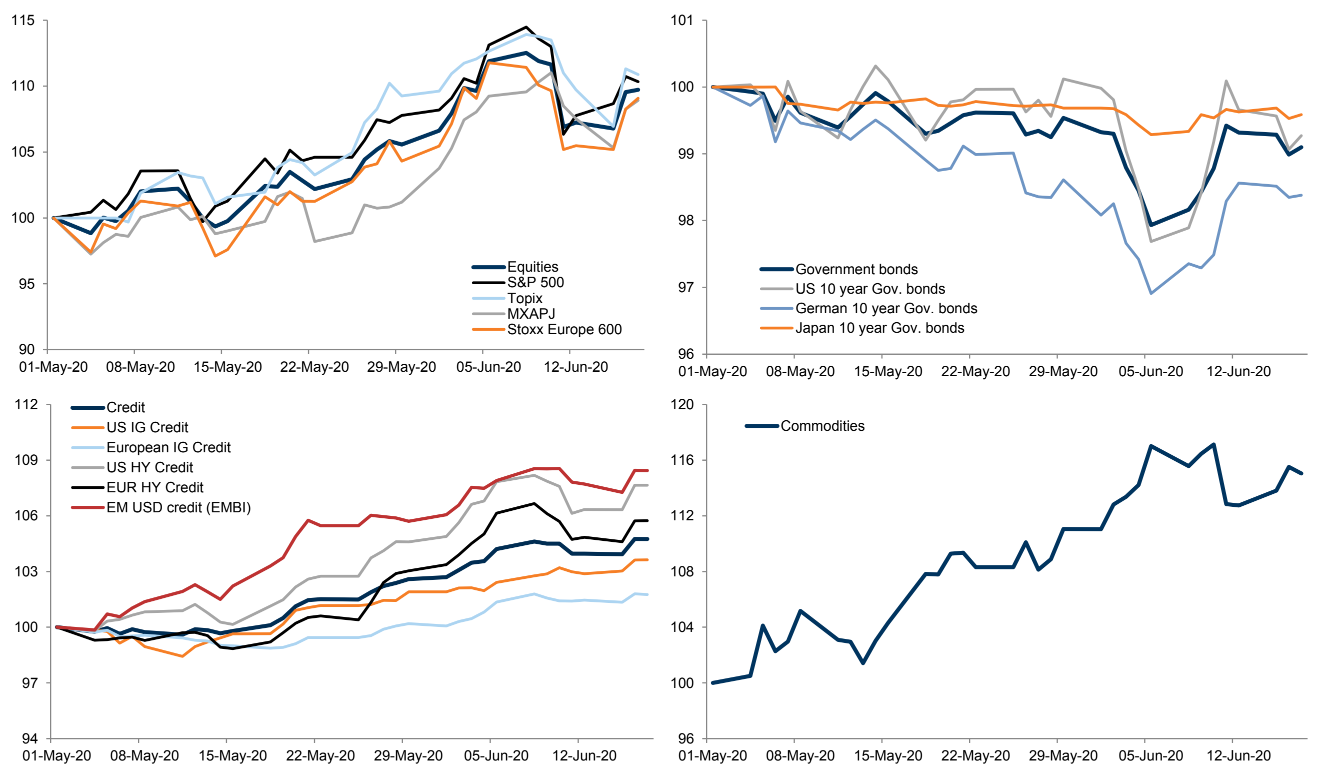
GS return forecasts and performance since our last GOAL

Exhibit 51: Goldman Sachs 3-, 6- and 12-month return forecasts by asset class

Asset Class	Benchmark Weight	3-month Total Return		6-month Total Return		12-month Total Return	
		Local currency	In USD	Local currency	In USD	Local currency	In USD
Equities	**35**	**-2.8**	**-3.0**	**-2.1**	**-1.2**	**3.1**	**4.8**
S&P 500	40	-4.8	-4.8	-2.7	-2.7	1.5	1.5
STOXX Europe 600	30	-6.3	-6.5	0.0	2.5	4.4	8.8
MSCI Asia Pac ex Japan	20	4.0	3.3	-4.6	-4.8	2.1	2.4
TOPIX	10	1.4	1.7	-1.1	1.0	8.0	10.3
10 yr. Government Bonds	**45**	**-0.6**	**-0.6**	**-1.3**	**0.1**	**-2.6**	**-0.7**
US	40	-1.3	-1.3	-1.9	-1.9	-3.4	-3.4
Germany	30	-0.3	-0.5	-1.3	1.2	-3.5	0.6
Japan	30	0.0	0.3	-0.4	1.7	-0.4	1.7
Credit	**10**	**-1.8**	**-1.8**	**-0.7**	**0.0**	**1.5**	**2.7**
Bloomberg Barclays US IG	40	-2.5	-2.5	-1.5	-1.5	0.5	0.5
Bloomberg Barclays US HY	20	-1.3	-1.3	0.4	0.4	4.4	4.4
iBoxx EUR IG	20	-1.3	-1.5	-0.8	1.7	0.2	4.5
BAML EUR HY	10	-2.0	-2.2	-0.4	2.0	1.7	6.1
JP Morgan EMBI Div.	10	-0.1	-0.1	0.5	0.5	1.6	1.6
Commodities (GSCI Enhanced)	**5**	**-7.3**	**-7.3**	**3.4**	**3.4**	**13.3**	**13.3**
Cash	**5**	**0.0**	**-0.1**	**0.0**	**1.2**	**-0.1**	**2.1**
US	50	0.1	0.1	0.2	0.2	0.4	0.4
Euro area	50	-0.1	-0.3	-0.2	2.2	-0.5	3.8
FX		**3m target**	**Return**	**6m target**	**Return**	**12m target**	**Return**
EUR/$		1.12	-0.2	1.15	2.5	1.17	4.3
$/YEN		107	-0.2	105	-2.1	105	-2.1

Source: Goldman Sachs Global Investment Research

Exhibit 52: Asset class performance since our last GOAL report (May 1, 2020)



Source: Datastream, Goldman Sachs Global Investment Research

Equities (3-month Neutral, 12-month Overweight)

Exhibit 53: Forecast returns and our recommended regional weightings within equities

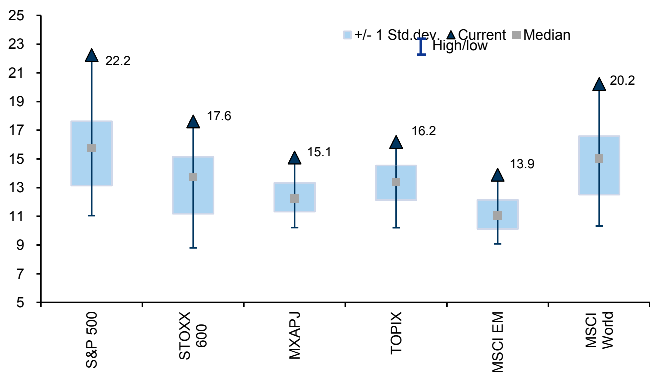
Total return forecasts (in local currency and USD) and the allocation relative to benchmark on 3- and 12-month horizons

		3-month				12-month					
				Price Return				Price Return		Total return	
	Current	Level	Wgt	Local	USD	Level	Wgt	Local	USD	Local	USD
S&P 500	3113	2950	**N**	**(5)%**	(5)%	3100	**N**	**(0)%**	(0)%	**1 %**	1 %
MSCI Asia Pac ex Japan	512	525	**N**	**3 %**	3 %	510	**N**	**(1)%**	(0)%	**2 %**	2 %
TOPIX	1587	1600	**N**	**1 %**	1 %	1675	**N**	**6 %**	8 %	**8 %**	10 %
STOXX Europe 600	366	340	**OW**	**(7)%**	(7)%	370	**N**	**1 %**	5 %	**4 %**	9 %

Source: Bloomberg, Datastream, Goldman Sachs Global Investment Research

Exhibit 54: Valuation ranges of major market indices

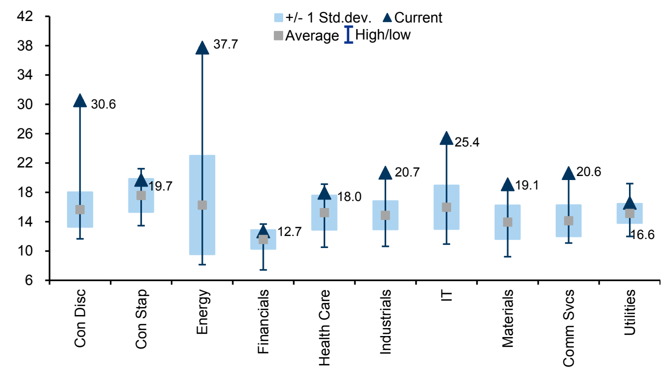
12-month forward P/E over the past 10 years



Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 55: MSCI World sector valuations

12-month forward P/Es relative to the last 10 years



Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 56: Global valuation metrics and earnings growth

P/E is NTM on consensus estimates

	P/E NTM (X)	EV / EBITDA LTM (X)	FCF Yield LTM (%)	Div Yield NTM (%)	P/B LTM (X)	NI Margin 2019 (%)	ROE LTM (%)	Implied ERP (%)
Stoxx Europe 600	17.5	9.0	4.9	3.3	1.5	6.8	9.2	8.9
S&P 500	23.5	13.2	4.2	2.0	3.4	10.7	16.7	6.2
MXAPJ	15.7	10.6	3.8	2.6	1.6	8.8	9.8	10.7
Topix	21.7	9.2	2.8	2.4	1.2	3.7	8.2	6.7

** As of June 11, 2020.*

	Earnings growth (%) based on aggregating			
	GS top-down		Consensus bottom-up	
	2020E	2021E	2020E	2021E
S&P 500 ($)	-33	55	-24	30
Stoxx Europe 600 (€)	-45	50	-31	34
MXAPJ ($)	-12	26	-3	22
Topix (¥)	-7	51	11	23

** TOPIX data based on FY20E and FY21E with March-end fiscal year.*
**The rest based on December-end fiscal year.*
** Growth rates are in local currency, except MXAPJ which is in USD.*

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

Government bonds (3-month Underweight,12-month Underweight)

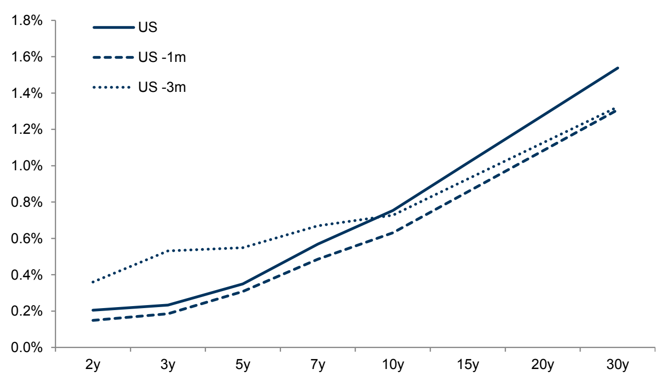
Exhibit 57: G10 Yield curve forecasts

G10 10-Year Yield Forecasts

	USD	DEM	GBP	JPY	CAD	CHF	SEK	NOK	AUD	NZD
spot	0.75	-0.36	0.22	0.02	0.55	-0.38	0.07	0.64	0.92	0.85
3Q20	0.95	-0.35	0.35	0.05	0.75	-0.35	0.20	0.85	1.05	0.95
4Q20	**1.05**	**-0.25**	**0.40**	**0.10**	**0.85**	**-0.25**	**0.30**	**0.95**	**1.15**	**1.00**
1Q21	1.15	-0.15	0.50	0.10	0.95	-0.15	0.35	1.05	1.25	1.05
2Q21	1.25	-0.05	0.55	0.10	1.00	-0.10	0.40	1.10	1.30	1.10
3Q21	1.35	0.05	0.60	0.15	1.05	-0.05	0.45	1.15	1.35	1.15
4Q21	**1.45**	**0.10**	**0.65**	**0.15**	**1.10**	**0.00**	**0.50**	**1.20**	**1.40**	**1.20**
1Q22	1.50	0.15	0.70	0.20	1.15	0.05	0.55	1.25	1.45	1.25
2Q22	1.55	0.20	0.75	0.20	1.20	0.10	0.60	1.30	1.50	1.30
3Q22	1.60	0.25	0.80	0.20	1.25	0.15	0.65	1.35	1.55	1.35
4Q22	**1.65**	**0.30**	**0.85**	**0.20**	**1.30**	**0.20**	**0.70**	**1.40**	**1.60**	**1.40**
1Q23	1.70	0.35	0.90	0.25	1.35	0.20	0.75	1.45	1.60	1.45
2Q23	1.75	0.40	0.95	0.25	1.40	0.25	0.80	1.50	1.60	1.50
3Q23	1.80	0.45	1.00	0.25	1.45	0.25	0.85	1.55	1.60	1.55
4Q23	**1.85**	**0.50**	**1.05**	**0.25**	**1.50**	**0.30**	**0.90**	**1.60**	**1.60**	**1.60**

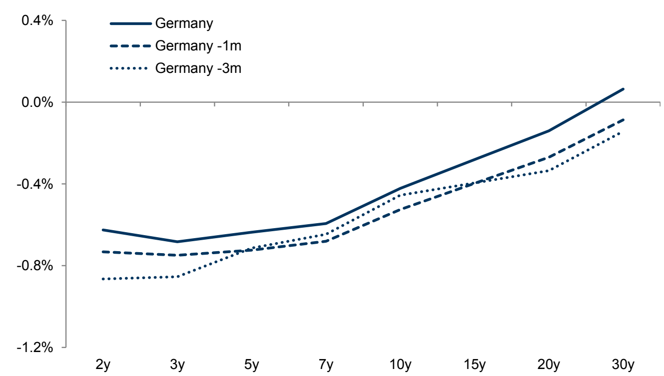
Source: Goldman Sachs Global Investment Research

Exhibit 58: US yield curve dynamics



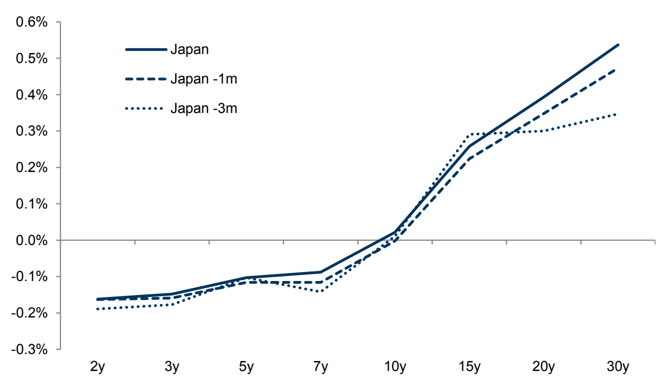
Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 59: Germany yield curve dyanamics



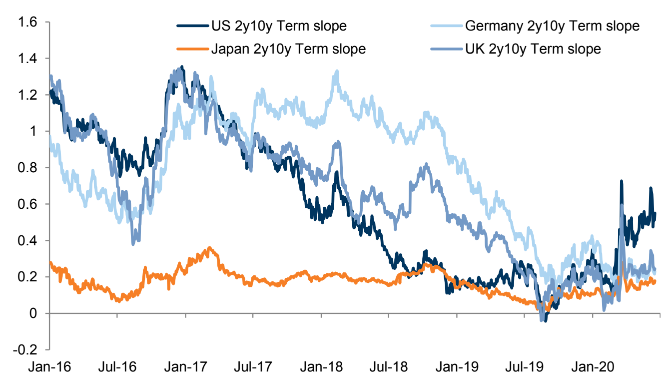
Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 60: Japan yield curve dynamics



Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 61: Yield curve term slope across regions



Source: Goldman Sachs Global Investment Research

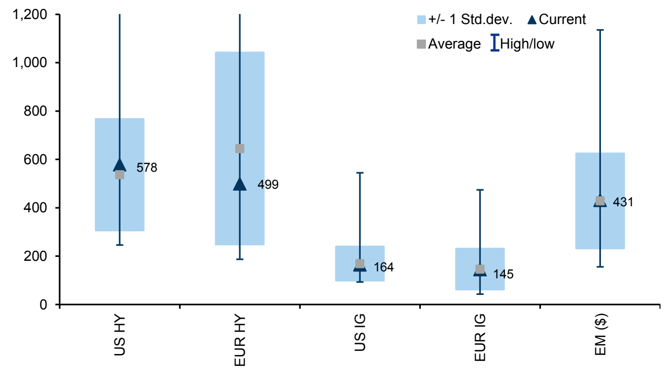
Credit (3-month Overweight and 12-month Neutral)

Exhibit 62: Our IG and HY forecasts

Sector	Updated through June 16, 2020					
	Current	2020Q2	2020Q3	2020Q4	2021Q1	2021Q2
USD Spreads						
IG	157	183	170	160	150	135
IG Fin	150	182	168	155	140	125
IG Non-Fin	162	185	173	165	155	145
High Yield	601	650	600	580	540	515
EUR Spreads						
IG	154	188	175	163	152	140
IG Fin	169	205	190	170	157	143
IG Non-Fin	147	175	165	155	147	137
High Yield	526	600	555	530	517	495

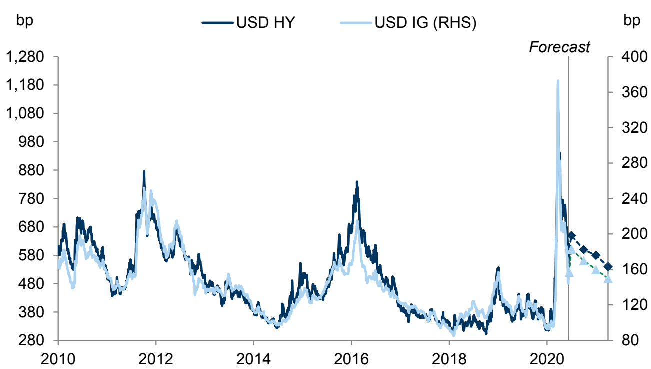
Source: BAML, Haver Analytics, iBoxx, Goldman Sachs Global Investment Research

Exhibit 63: Current credit spreads relative to their historical ranges
Credit spreads (US HY and IG since 1985, EUR IG since 1997, EUR HY and EM since 1998)



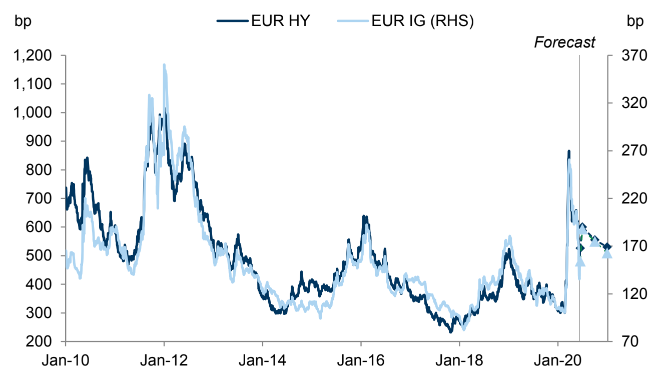
Source: Haver Analytics, Iboxx, Goldman Sachs Global Investment Research

Exhibit 64: USD spread forecast for IG vs. HY



Source: The Yield Book Inc.; FTSE Index, Citi Index, Goldman Sachs Global Investment Research

Exhibit 65: EUR spread forecast for IG vs. HY



Source: iBoxx, Goldman Sachs Global Investment Research

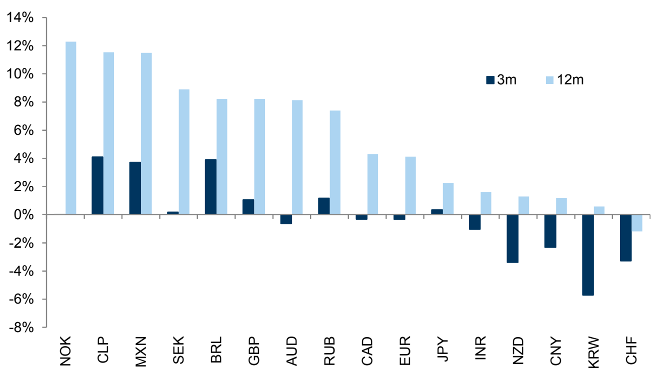
Commodities (3-month Neutral and 12-month Overweight) and FX

Exhibit 66: S&P GSCI® Enhanced Commodity Index total return forecasts
Data as of June 17, 2020

	Current Weight (%)	Returns (%) 2018	2019	2020 YTD	Return forecasts (%) 3-months	6-months	12-months
S&P GSCI Enhanced	100.0	**-12.9**	**17.4**	**-34.5**	**-7.3**	**3.4**	**13.3**
Energy	62.6	-13.9	28.5	-46.7	-9.9	5.7	20.0
Industrial Metals	11.2	-18.0	2.8	-9.8	0.0	3.7	7.3
Precious Metals	4.1	-3.6	17.7	11.7	3.3	8.8	14.1
Agriculture	15.4	-7.0	-1.6	-14.7	-7.0	-6.4	-4.7
Livestock	6.7	-2.2	-5.4	-27.5	-2.3	0.4	1.6

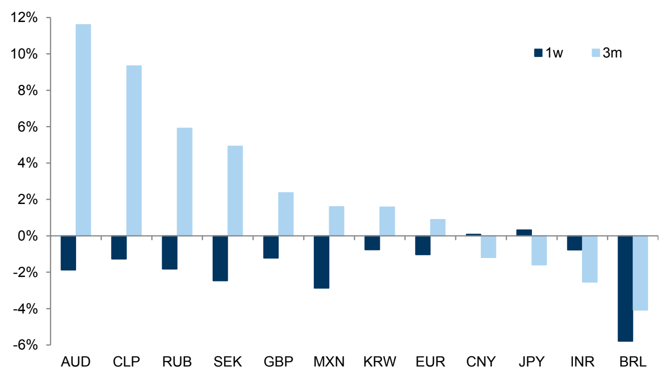
Source: S&P Dow Jones Indices, Goldman Sachs, Goldman Sachs Global Investment Research

Exhibit 67: Our 3- and 12-month forecasts for Dollar crosses



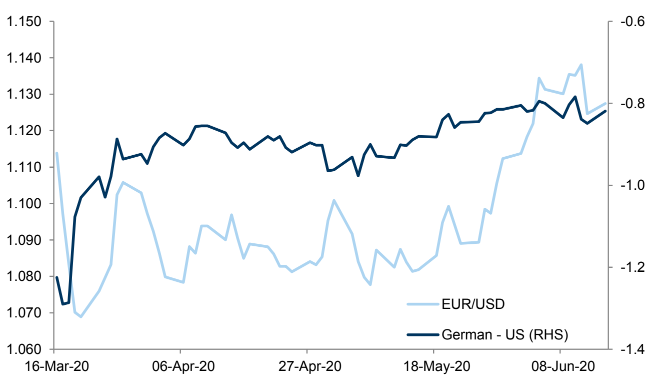
Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 68: Percentage change of Dollar spot crosses over past 1w, 3m



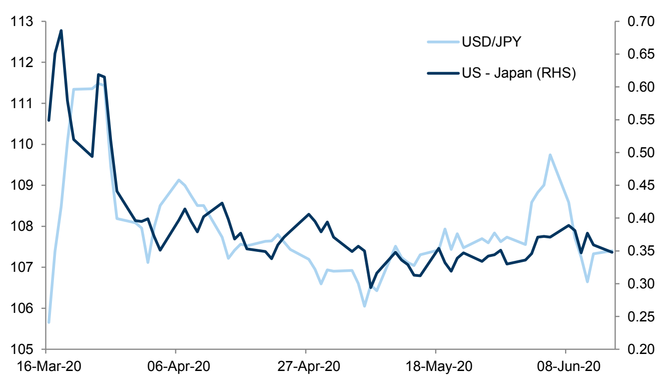
Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 69: EUR/USD against German - US 2y interest rate differentials over past 3m



Source: Datastream, Goldman Sachs Global Investment Research

Exhibit 70: USD/JPY against US - Japan 2y interest rate differentials over past 3m



Source: Datastream, Goldman Sachs Global Investment Research

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