Global Equity Strategy

Correction Detection; the risks of a drawdown within a bull market

- The S&P 500 and MSCI World Index have entered their longest period without a correction of more than 5%.
- **This has been the strongest start for global equity markets in any year for at least 30 years, and is even more extreme on a risk-adjusted basis.** This 'melt-up' has occurred despite the already strong returns last year. The S&P 500 had its second-highest risk-adjusted returns in more than 50 years and MSCI World ($) had its second-highest risk-adjusted returns since the index began in 1970. The year-to-date sharp rise in equity returns has also continued even as bond markets are experiencing sharp risk-adjusted losses.
- There remain good reasons to be bullish equities for the year. We remain overweight and think that bear market risks are low.
- But a correction is becoming increasingly likely. Our GS Risk Appetite indicator is near its highest level ever, pointing to a sharp rise in optimism. Our GS Bull/Bear Market Indicator (GSBLBR) is at elevated levels, although the continuation of low core inflation and easy monetary policy (which are components of the indicator) suggests that a correction is more likely than a bear market.
- Drawdowns within bull markets of 10% or more are not uncommon (we find 22 since 1945). **The average bear market experiences falls of 30% over 13 months and takes 22 months to recover to previous levels (in nominal terms). The average bull market 'correction' is 13% over 4 months and takes just 4 months to recover.**
- 2018 has begun with the S&P 500 and VIX both rising. The increase in volatility amid a market rally may, in part, reflect increasing risks, and may also reflect a bullish willingness to spend premium to add to upside exposure. We would buy the equity market on a correction and, while we recommend being fully invested, would look to hedge downside risks. Our options strategists have suggested doing this through various structures, including put spreads.

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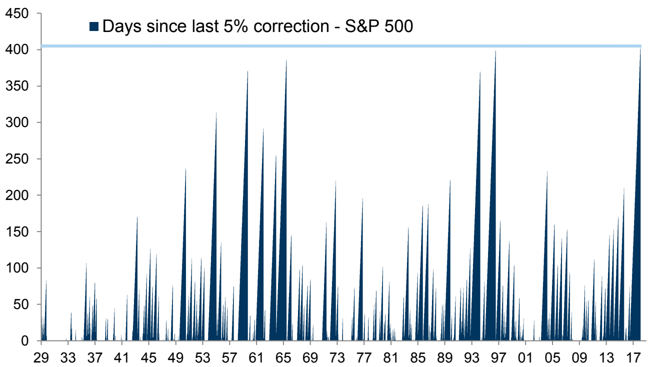
Stocks have had the longest period without a correction since 1929

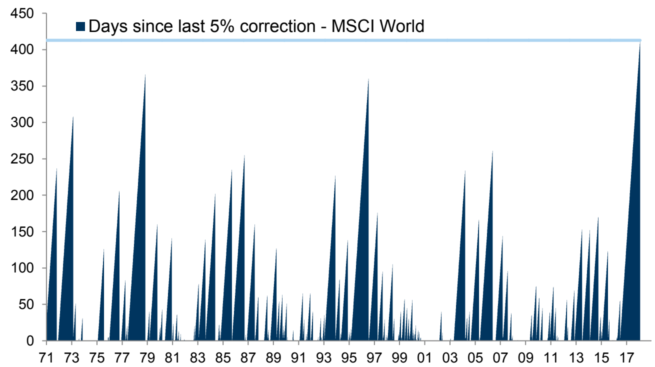
The S&P 500 has entered the longest period since 1929 without a correction of more than 5%. The global market (MSCI World Index) reached its longest period without a 5% correction late in November 2017 (the history goes back to 1971). Of course, this does not mean that the market must have a correction. It just suggests that one is overdue and that rising valuations, amid increased optimism, make the market more vulnerable to a setback even if the underlying trend remains intact.

Exhibit 1: The S&P has reached its longest period without a 5% correction...
Days since last 5% S&P 500 drawdown (during a 6 month trailing period)



Source: Bloomberg, Datastream, Goldman Sachs Global Investment Research

Exhibit 2: ...And so has the MSCI World index
Days since last 5% MSCI World ($) drawdown (during a 6 month trailing period)

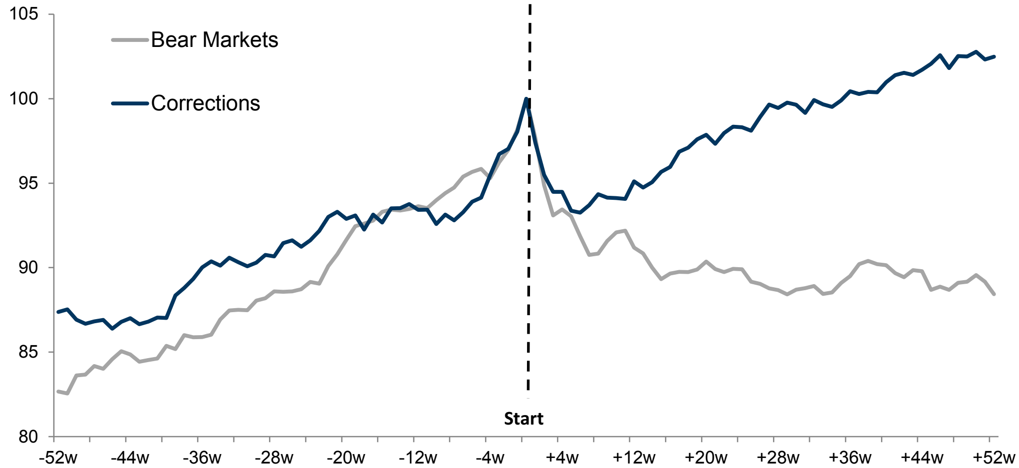


Source: Datastream, Goldman Sachs Global Investment Research

As inflows into equities rise strongly alongside increasing optimism, the equity market becomes more vulnerable to disappointments. This does not mean the market is at risk of entering a sustained bear market, but it may mean the market experiences a sharp correction. **Historically, there are many examples of corrections (drawdowns of 10-20%) that are short-lived and do not turn into more drawn-out bear markets that are typically associated with economic weakness.** We define bear markets as falls of 20% or more. Exhibit 3 shows a history of bear markets and corrections for the S&P 500 since the end of World War II. We find 14 bear markets and 22 corrections of over 10%. There are, of course, many more corrections of less than 10%, but we ignore them here; a correction of 5% would only take global equities back to where they started the year, so would be unlikely to cause much concern or damage.

We find that the average bear market experiences falls of 30% over 13 months and takes 22 months to recover to previous levels (in nominal terms). The average 'correction' is 13% over 4 months and takes just 4 months to recover (Exhibit 3).

Exhibit 3: Corrections can happen within bull markets...and can be sharp, but they tend to be short-lived
Average performance 1 year before and after corrections / Grey represents bear markets



Bear markets and corrections in the S&P 500 since WWII				
Start	**End**	**Performance (%)**	**Length (m)**	**Recovery (m)**
Feb-46	Feb-46	-10	1	1
May-46	Feb-48	-28	21	28
Jun-48	Jun-49	-21	12	7
Jun-50	Jul-50	-14	1	2
Jan-53	Sep-53	-15	8	6
Sep-55	Oct-55	-11	1	1
Aug-56	Oct-57	-22	15	11
Aug-59	Sep-60	-14	14	4
Dec-61	Jun-62	-28	6	14
Aug-62	Oct-62	-11	2	1
Feb-66	Oct-66	-22	8	7
Sep-67	Mar-68	-10	5	2
Nov-68	May-70	-36	18	21
Apr-71	Nov-71	-14	7	2
Jan-73	Oct-74	-48	21	69
Nov-74	Dec-74	-14	1	2
Jul-75	Sep-75	-14	2	4
Sep-76	Mar-78	-19	17	17
Sep-78	Nov-78	-14	2	9
Oct-79	Nov-79	-10	1	2
Feb-80	Mar-80	-17	1	4
Nov-80	Aug-82	-27	20	3
Oct-83	Jul-84	-14	9	6
Oct-87	Dec-87	-32	2	19
Jan-90	Jan-90	-10	1	4
Jul-90	Oct-90	-20	3	4
Oct-97	Oct-97	-11	1	1
Jul-98	Aug-98	-19	1	3
Jul-99	Oct-99	-12	3	1
Mar-00	Oct-02	-49	31	56
Nov-02	Mar-03	-15	3	2
Oct-07	Mar-09	-57	17	49
Apr-10	Jul-10	-16	2	4
Apr-11	Oct-11	-19	5	5
May-15	Aug-15	-12	3	11
Nov-15	Feb-16	-13	3	4
Bear Markets		**-30**	**13**	**22**
Corrections		**-13**	**4**	**4**

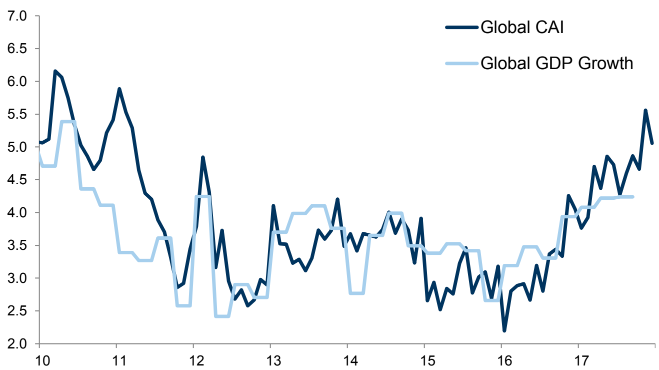
Source: Bloomberg, Goldman Sachs Global Investment Research

Reasons to be cheerful

There are, of course, good reasons to be bullish:

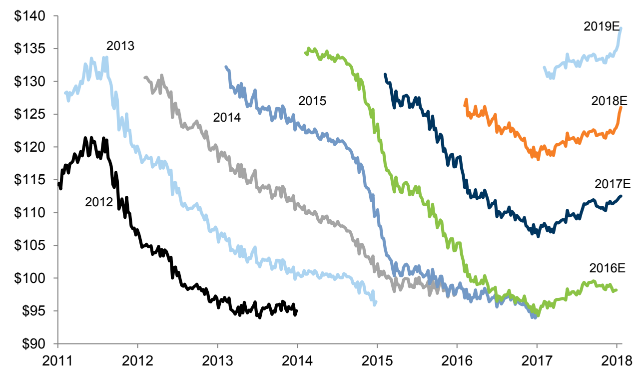
- Global growth is running at above 5% (according to our Global CAI index, Exhibit 4), the strongest pace since 2010.
- After several years of weak and imbalanced global growth, we are now seeing a broad and synchronised economic recovery. Alongside positive GDP surprises, earnings expectations that had consistently been revised down are now finally being revised up sharply (Exhibit 5).

Exhibit 4: Both GDP and the CAI remain very strong
Global CAI and GDP growth (yoy)



Source: Goldman Sachs Global Investment Research

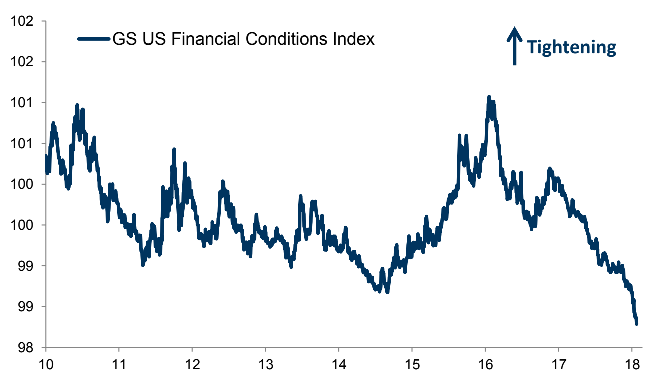
Exhibit 5: Global earnings are being revised up materially
I/B/E/S consensus calendarised earnings for MSCI World ($) over time



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

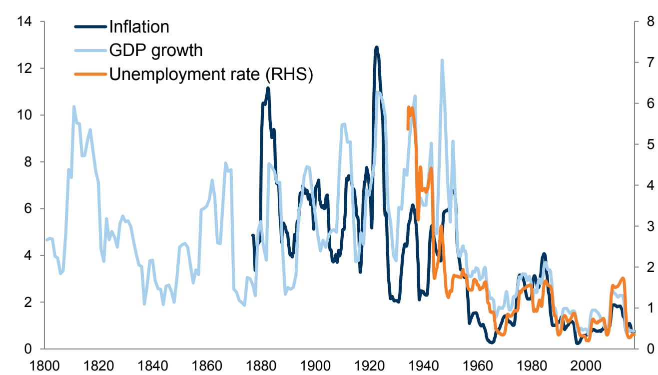
- Bond yields remain low.
- US financial conditions are at their most accommodative since the financial crisis (Exhibit 6), and this is happening at the same time as the US is experiencing an easing of fiscal policy and tax cuts.
- Macro volatility is also close to record lows, helping to keep a lid on market volatility (Exhibit 7, see Global Strategy Paper No. 23: The upside of boring: Risks and asset allocation in low vol regimes, June 21, 2017).

Exhibit 6: GS US Financial Conditions Index has eased to its lowest level post-crisis
GS US Financial Conditions Index



Source: Goldman Sachs Global Investment Research

Exhibit 7: Volatility of US GDP growth, inflation and unemployment rates has declined, especially since the 1980s
5-year rolling volatility



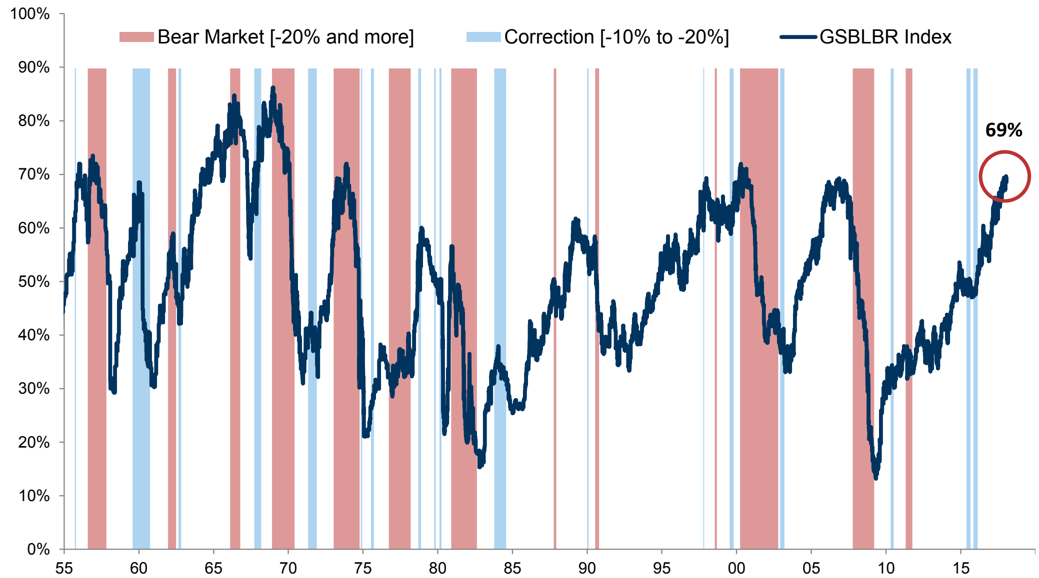
Source: GFD, Datastream, Consensus Economics, Goldman Sachs Global Investment Research

Despite the strong macro outlook, it is worth remembering that it is typically better to buy a market when the news is poor and valuations are low than when all news is good and valuations are high. The risks associated with strong conditions are reflected in our bull/bear market indicator (GSBLBR), which is currently high relative to history (Exhibit 8). **We would stress that this indicator does not necessarily imply that a bear market is within sight; it could also suggest that correction risks are high. There have been many occasions when a rise in this index has been followed by a market correction rather than a deeper bear market.** One of the reasons why we think that the current level of our indicator may be pointing to a correction rather than a bear market risk is that the factors underlying this index are not all consistent.

Valuation is stretched and growth momentum is very strong (this is usually followed by a slowdown in momentum and therefore shows up as a risk for investors). The labour market, at least in the US, Japan, the UK and Germany, is very tight (this is also a risk, as it is usually followed by rising wages and falling margins). **But other factors that have typically accompanied a peak in equity markets are not in place. Yield curves remain upward-sloping and, most importantly, core inflation remains much more subdued than we have tended to see before previous peaks in the equity market.** The risks of rising inflation pushing interest rates up sufficiently to derail the global growth recovery seem remote: our global recession indicators suggest risks over the next year are low (see Global Economics Analyst: Recession Risk is Low...For Now, January 15, 2018). All of these provide some comfort that, even if there were a market correction, it is unlikely it would mark the start of a deeper and more prolonged bear market.

But expectations can adjust quickly and there is, of course, some circularity involved. Our economists estimate that **an exogenous 20% fall in stock prices in Q1 would turn the growth impulse from equity prices from a +0.6pp boost currently into a -0.5pp drag, and would trigger a significant growth slowdown – although likely not a recession** (see US Daily: Wall Street and Main Street Intersect, January 25, 2018)**.**

Exhibit 8: Our GS Bull/Bear Market Risk Indicator (GSBLBR) is at its highest level in 10 years
Average percentile (in US) for ISM, slope of yield curve, core inflation, unemployment and Shiller P/E



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

That said, while the risk of a typical 'Cyclical' bear market may still be quite low, the market is vulnerable to an 'Event'-driven bear market or correction. There are significant differences between the different types of bear markets (for a full discussion see Global Strategy Paper No. 25: Bear Necessities; identifying signals for the next bear market, September 13, 2017). 'Event'-driven bear markets and corrections are short and sharp but tend to be much less prolonged than 'cyclical' bear markets which typically come before recessions, or the even deeper 'structural' bear markets which are associated with the unwinding of economic imbalances, often alongside the bursting of systemically important asset bubbles.

Correction signals are flashing

But even without a bear market, investors should be vigilant to periods when optimism has overpriced assets, leaving them vulnerable to small 'disappointments'. A good sign of this is when 'all news is good news': for example, the market goes up with rising interest rate expectations because this is seen as confirmation of strong growth, while at the same time lower bond yields are seen as supportive to the 'Goldilocks' narrative. We have long argued that the lack of alternatives is likely to push investors up the risk curve into equity markets. But the recent sharp rise in optimism makes markets appear vulnerable to disappointments either to growth, perhaps as a result of heightened protectionist rhetoric in the US, or to rising interest expectations in the US – our economists continue to expect four hikes to the Fed funds rate both this year and next, well above the market forwards. Whether these are the trigger points or not, several factors suggest that markets have moved too far too quickly.

1) Sharp rise in investors' optimism

As Exhibit 9 shows, the Investor Intelligence Bull-Bear Indicator is particularly high currently, and has outstripped the typical rises that we see before market falls. Our own GS Risk Appetite Indicator is at record highs (Exhibit 10). This signals how much risk the markets have been keen to take on relative to the recent past. It is calculated by taking the equally-weighted average of 1-year rolling z-scores of the following cross-asset metrics:

Equities (all for MSCI World): ERP, EM vs. DM, Cyclicals vs. Defensives, Small vs. Large, Financials vs. Staples, S&P 500 vs. low volatility stocks.

Equity volatility: VIX, VSTOXX, CBOE skew, CBOE put/call ratio (1-month average), EUREX put/call ratio (1-month average).

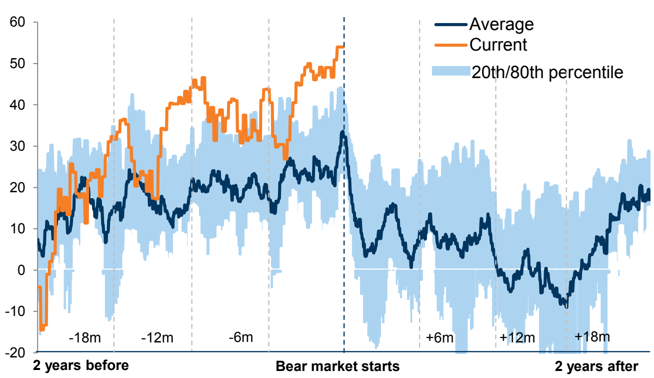
Credit: USD HY vs. IG spread, EUR HY vs. IG spread, EUR IG spread, USD IG spread, Spain and Italy sovereign spreads, EM USD credit spreads.

Bonds: Germany 10- and 30-year, US 10- and 30-year.

FX: JPY/AUD, CHF/GBP, EUR/USD, Gold, USD trade-weighted.

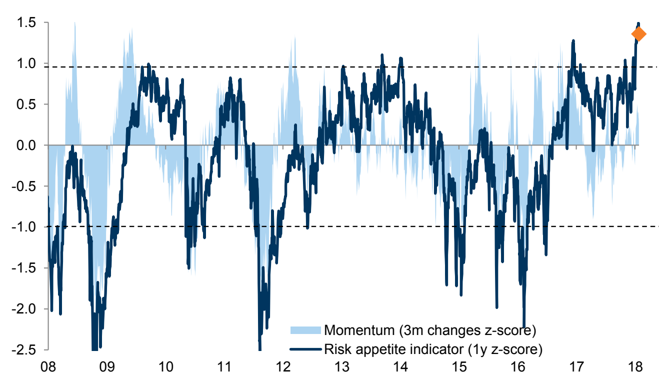
(For more details on the GS Risk Appetite Indicator, see GOAL: Reflation infatuation - risks from sentiment and positioning, February 3, 2017).

Exhibit 9: Investors are starting 2018 more optimistic than 2017
Investor Intelligence Bull-Bear spread into bear markets, since 1970



Source: Haver Analytics, Goldman Sachs Global Investment Research

Exhibit 10: GS Risk Appetite Indicator is at record highs
Risk appetite indicator level and momentum factors



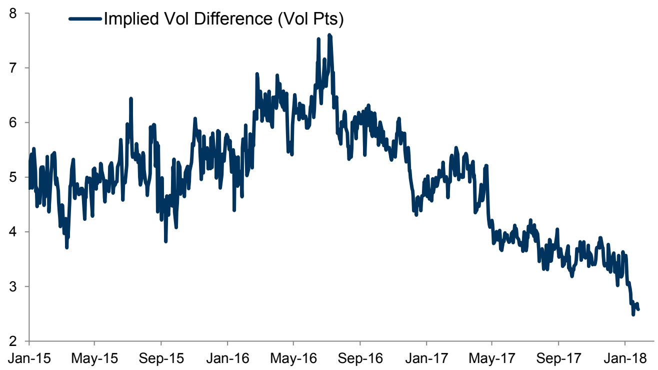
Source: Goldman Sachs Global Investment Research

2) Political risk is now being ignored

For most of the post-financial-crisis era, investors have been concerned about political events and the prospect that politics could spill over into market pricing. This no longer seems to be the case. The volatility of Europe, for example, tends to rise relative to the US going into political events. This has certainly been the case in the past. **But since the European elections last year, the markets have ignored political events as if they do not matter. The Italian election is a case in point** (Exhibit 12). Since the media reported the March 4 date of the general election in mid-December, spreads between Italian and German bonds have tightened, the BTP-Bund spread curve has steepened between 2s and 10s, the price of 5-year Italian CDS has fallen, **the**

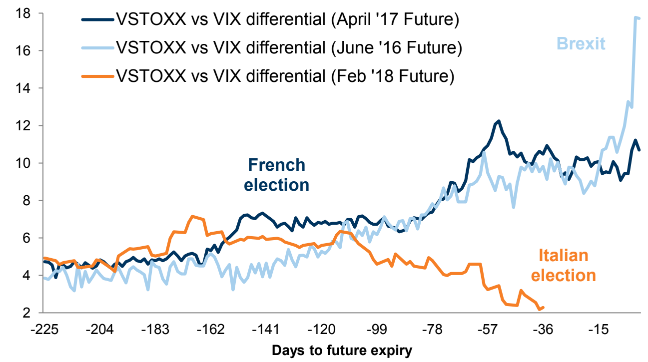
Italian stock market has been the strongest country index in Europe and the EUR has appreciated.

Exhibit 11: EuroStoxx 50-SPX implied vol spread is at a multi-year low
Difference between EuroStoxx 50 and SPX 12M 25-delta call implied vol levels



Source: Goldman Sachs Global Investment Research

Exhibit 12: Italian elections: scope for repricing
VSTOXX vs. VIX differentials during political events

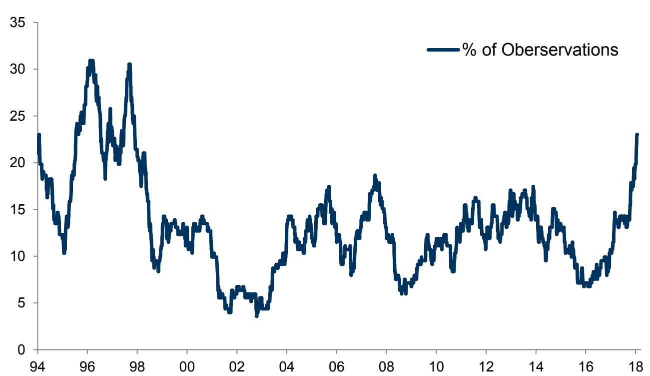


Source: Datastream, Goldman Sachs Global Investment Research

3) Investors have shifted to buying upside exposure

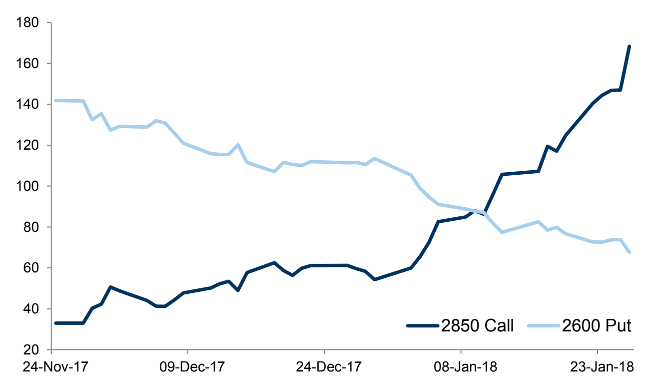
2018 has begun with the S&P 500 and VIX both rising; this is an unusual combination with this magnitude of spot rally, according to our options analyst, Rocky Fishman. Usually, implied volatility falls when the market rises, although the pattern of rising spot prices and rising implied volatility has been more common in 2017-18 than it has been since the 1990s. **The increase in volatility amid a market rally may in part reflect increasing risks, and may also reflect a bullish willingness to spend premium to add to upside exposure** (see Vol Up; Spot Up: Call Prices Rising Quickly, January 23, 2018).

Exhibit 13: Frequency of 'vol up, spot up' is rising – but is not at late-1990s levels
Rolling 1-year frequency (% of 5-day periods) of SPX up, VIX up



Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 14: December call prices have risen strongly during the recent rally; put prices have fallen
Mid-market price of Dec-2018 SPX options, in $

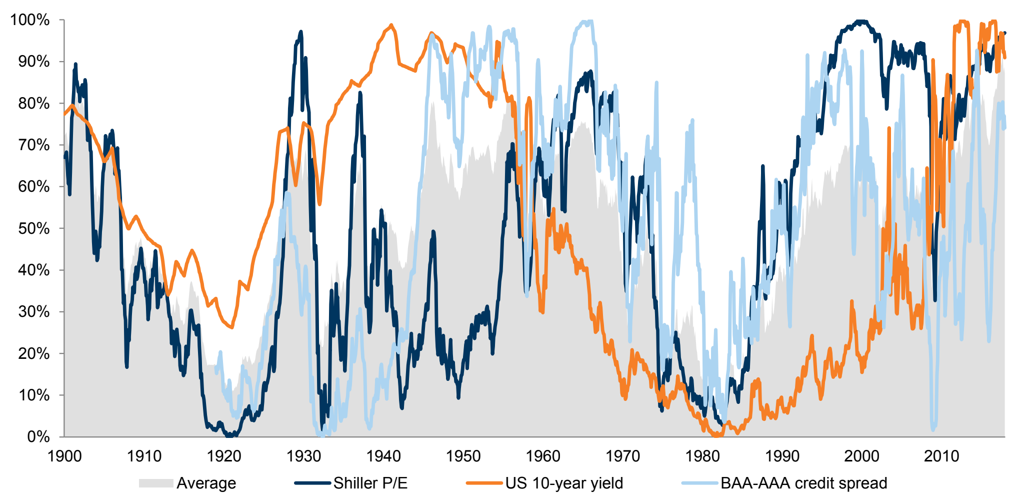


Source: Bloomberg, Goldman Sachs Global Investment Research

4) All asset markets are expensive together, making them vulnerable to 'disappointment'

Correlations across asset markets have increased and valuations in every asset class look high relative to history (Exhibit 15). In previous periods, high valuations in equities were typically offset by low valuations in bonds (e.g., 2000), and vice versa (e.g., 1950s). Elevated valuations across all asset classes are a reflection of ultra-low policy rates and quantitative easing (QE). A correction in one asset class is likely to be reflected across all asset classes, making hedges less effective.

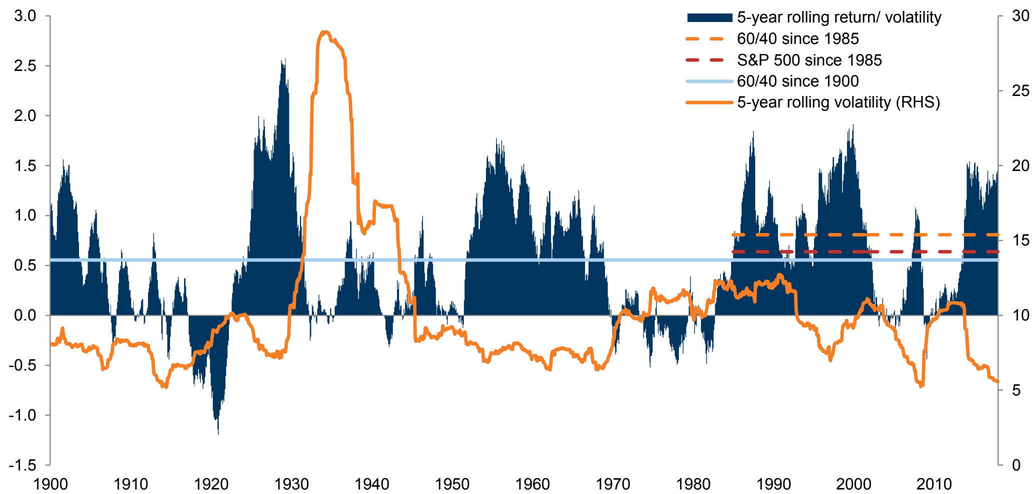
Exhibit 15: Valuation frustration - both bonds and equities appear expensive
Valuation percentile (since 1871 for S&P 500 & US 10-year yields, 1919 for BAA spreads)



Source: Shiller, GFD, Goldman Sachs Global Investment Research

As a result of these correlated moves, we are now close to the longest bull market in balanced funds (a 60% S&P and 40% bond portfolio) in 100 years. But, more strikingly, the 5-year rolling volatility of a 60/40 portfolio is close to 100-year lows (see GOAL - Global Strategy Paper No. 27: The Balanced Bear - Part 1: Low(er) returns and latent drawdown risk, November 28, 2017).

Exhibit 16: Since 2009, a 60/40 portfolio has delivered almost twice the long-term average risk-adjusted returns
5-year rolling real return/volatility of a 60/40 portfolio (60% S&P 500, 40% US 10-year bonds)

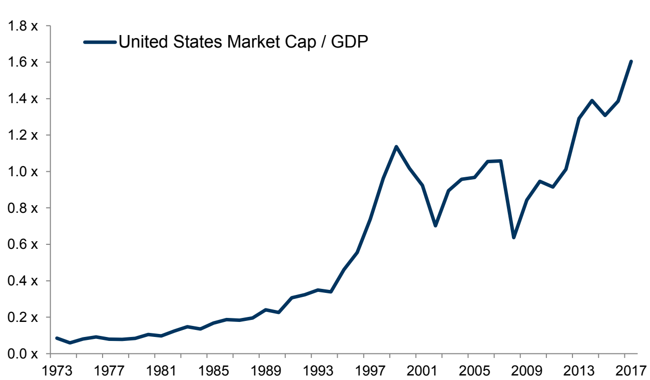


Source: GFD, Goldman Sachs Global Investment Research

5) Equities look more attractive on a relative basis – but even this has deteriorated

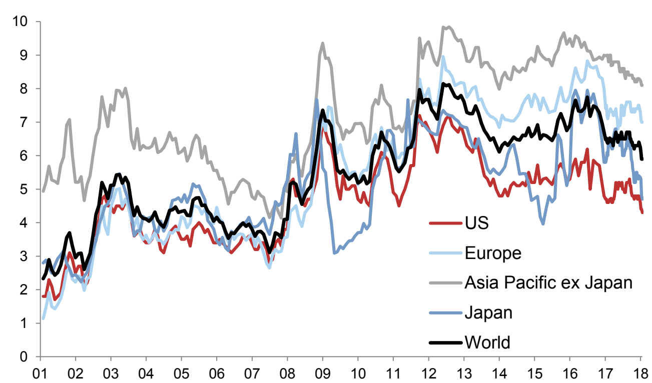
The sharp rise in equity prices has pushed market-cap-to-GDP ratios to record-high levels in the US (Exhibit 17). While the rise in equities partly reflects the lack of attractive alternatives, it has meant that the Equity Risk Premium (which has provided a strong cushion for the equity market over recent years) has recently fallen back towards more 'normal' levels, despite bond yields remaining very low. **This suggests that there is now less room for bond yields to rise without causing damage to equities**.

Exhibit 17: Market-cap-to-GDP ratios at record-high levels in the US
United States Market Cap / GDP



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

Exhibit 18: Equity Risk Premium has recently fallen
Global market implied ERPs (%)

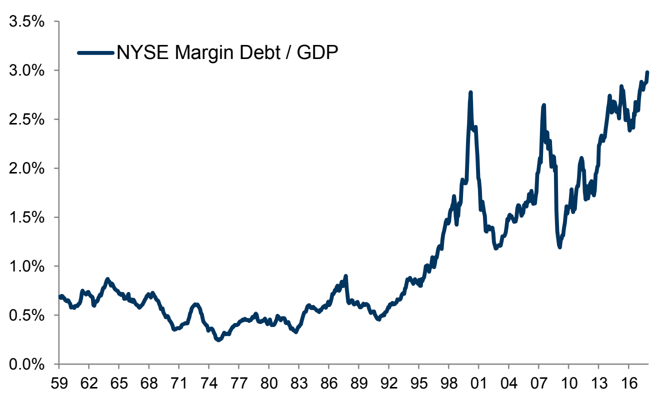


Source: Datastream, Goldman Sachs Global Investment Research

6) Increased leverage and changing market structure raise the risks of technical 'air pockets'

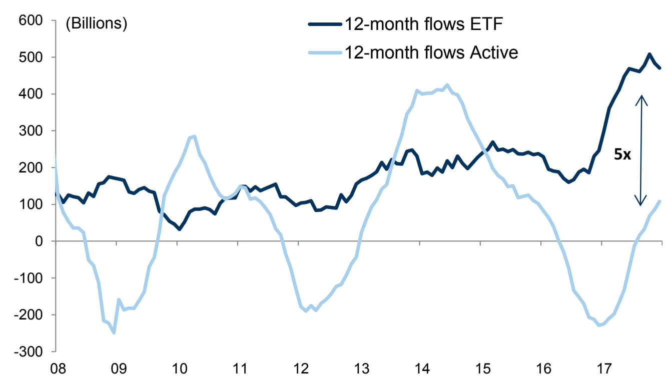
While the macro risk factors triggering a recession appear low, technical factors could mean that a correction in the current environment would be more painful than investors expect. Market structure has changed radically in recent years. Margin debt on exchanges has increased rapidly (Exhibit 19) and passive fund flows have dramatically outstripped active flows in recent years. As Exhibit 21 shows, flows into ETFs were roughly five times the size of flows into active funds in 2017. It is not clear what would happen to demand in passive funds during a drawdown. For example, any losses in bond ETF funds could be more painful than an equivalent loss in underlying bonds held by investors, as the funds do not provide investors with a coupon to maturity. If investors faced losses and wanted liquidity, this could well spill over into other markets such as equities.

Exhibit 19: Margin debt on exchanges has increased rapidly
NYSE Margin debt / GDP



Source: New York Stock Exchange, BEA, Haver Analytics, Goldman Sachs Global Investment Research

Exhibit 20: In 2017 flows into ETFs were 5x the size of flows into active funds
12-month flows into ETF and active funds since 2008

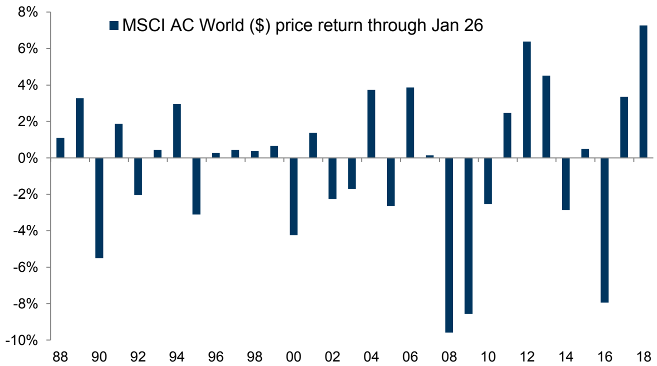


Source: Morningstar, Goldman Sachs Global Investment Research

7) The 'melt-up' in equities has already happened despite sharp bond losses

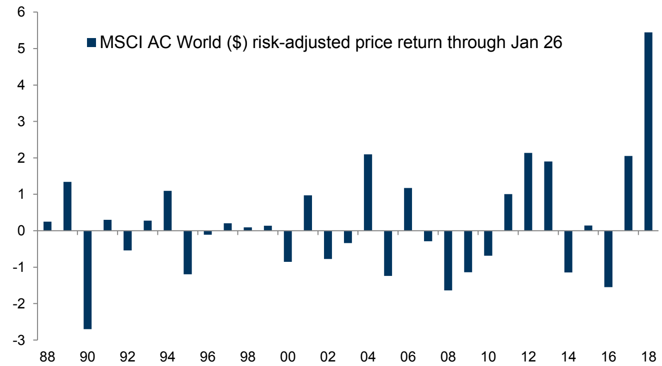
As Exhibit 21 shows, **this has been the strongest start for global equity markets in any year for at least 30 years.** The returns so far this year look even more extreme on a risk-adjusted basis (Exhibit 22, see GOAL Kickstart: Extreme winners and losers and the signal from risk appetite, January 22, 2018). **But this needs to be viewed in perspective: 2017 was already a very strong year, with total returns for the S&P 500 in the 82nd percentile since 1973 and the second-best volatility-adjusted returns on record**. Asia experienced returns of over 30%.

Exhibit 21: Global equities have had their strongest start to a year on record ...
Price returns to MSCI All-country World ($) through January 26th each year



Source: Datastream, Goldman Sachs Global Investment Research

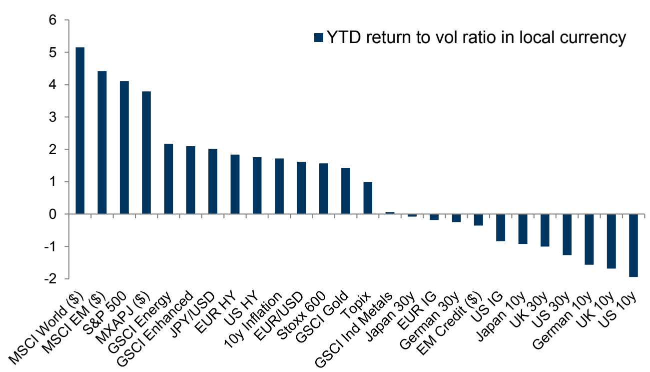
Exhibit 22: ...and this is even more impressive on a risk-adjusted basis
Risk-adjusted price returns to MSCI AC World ($) through January 26th each year



Source: Datastream, Goldman Sachs Global Investment Research

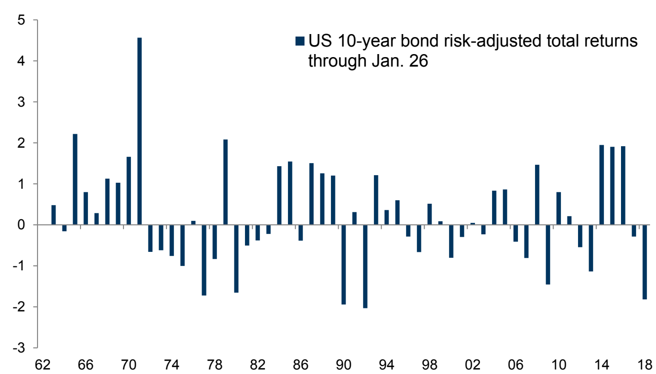
What has shifted recently is the relative performance of equities. For a long time all asset markets were performing well together, as lower interest rates boosted financial asset prices despite very low inflation in the real economy.

Exhibit 23: This year equities have had the highest risk-adjusted returns, while government bonds – particularly US Treasuries – have had the lowest
2018 year-to-date, local currency return to vol ratios



Source: Datastream, iBoxx, Goldman Sachs Global Investment Research

Exhibit 24: US 10-year Treasuries are seeing some of the lowest risk-adjusted returns to start a year in their history (since 1962)
Risk-adjusted total returns to US 10-year Treasuries through January 26th each year



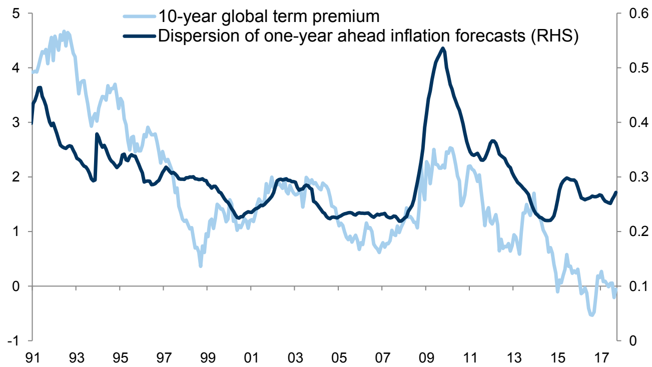
Source: Haver Analytics, Goldman Sachs Global Investment Research

So far this year the equity market has made significant gains, whereas bond markets have made losses (Exhibit 23 and 24). **Indeed, just as equities have enjoyed the highest-ever risk-adjusted returns at the start of the year, US 10-year bonds are on track to post some of their most negative (risk-adjusted) returns for the month of January since 1962** (see GOAL Kickstart: Extreme winners and losers and the signal from risk appetite, January 22, 2018).

The ability of the equity market to absorb higher bond yields is critical. So far, it has been able to do so as growth expectations have continued to rise. But there are risks that the bond markets adjust too rapidly from current levels. Interestingly, as our Rates strategists point out, the bond 'term premium' (or risk premium) has moved down as inflation forecasts have become more narrowly dispersed and as inflation has fallen

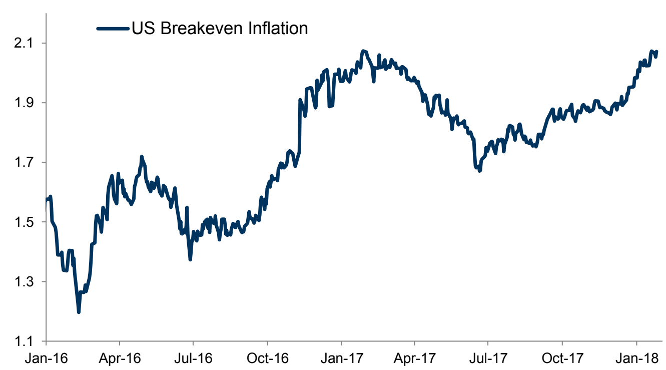
(Exhibit 25). But recently break-even inflation expectations have increased (Exhibit 26), suggesting there are **risks that the bond term premium still has to increase.**

Exhibit 25: Low uncertainty around future inflation has helped drive the term premium down
Dispersion of survey forecasts of 1-year-ahead inflation (avg. Euro area, Japan, UK, US and avg. of 10-year term premium



Source: Bloomberg, Consensus Economics, National Central Banks, Goldman Sachs Global Investment Research

Exhibit 26: Breakeven inflation has moved up more recently
US 10-year breakeven inflation



Source: Bloomberg, Goldman Sachs Global Investment Research

Whatever the trigger, a correction of some kind seems a high probability in the coming months. We do not believe that this would be prolonged or morph into a bear market, and so would see it as a buying opportunity. That said, technical factors and positioning could make it rather painful. We would buy the equity market on a correction and, while we recommend being fully invested, would look to hedge downside risks. **Our options strategists have suggested doing this through various structures, including SPX put spreads, which we think could be a good hedge across many markets.**

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Disclosure Appendix

Reg AC

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