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GLOBAL MACRO OUTLOOK • JULY 2017

# Learning to live with low vol



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Low financial market volatility (vol) is often debated with overtones of dread. Some argue that the lack of fear is so striking that we should be feeling ... fearful. Digging into US equity volatility patterns dating back more than a century, we find low market volatility can last for years and tends to overlap with subdued macroeconomic volatility. Our [analysis of US cycles](#) suggests the current expansion is durable and has room to run. This aligns with low market volatility and helps foster risk-taking. Highlights of our *Global macro outlook* include:

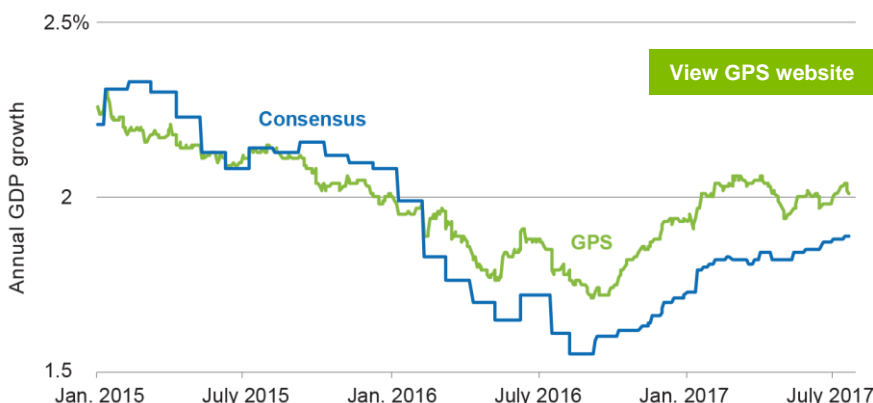
- Realised US equity volatility has historically stayed low for remarkably long periods of time. Importantly, volatility does not follow a normal bell curve distribution. Instead of volatility having a single 'equilibrium' level, we believe it is better viewed as operating in different regimes: often low, sometimes high.
- We find US GDP data form similar realised vol patterns to those of the equity market – and both regimes tend to be long-lasting. High equity vol regimes can be fleeting, with no echoes in the economy. It is the overlapping market and macro shocks that are the most fraught with potential systemic danger.
- We are vigilant on potential vulnerabilities in the financial system but believe post-crisis regulation and periodic bursts of anxiety (eurozone woes, China scares, commodity slides) have kept asset froth in check. We do not see systemic risk as high but are on watch for any stealth leverage build-up.

## GPS: Sustained expansion

Our [BlackRock GPS](#), which gives a steer on the near-term economic outlook, suggests G7 growth is cruising along at an above-trend pace around 2%. We see consensus growth views as overly cautious. Investors are still coming to grips with better global growth. This is one reason why we believe risk assets are likely to remain buoyant. Europe's acceleration – led by Germany and France – has helped underpin the mild G7 GPS rise so far this year as US growth steadied.

## Economic snapshot

BlackRock GPS vs. G7 consensus, 2015-2017



Sources: BlackRock Investment Institute, with data from Bloomberg and Consensus Economics, July 2017. Notes: The GPS in green shows where the 12-month consensus GDP forecast may stand in three months' time for G7 economies. The blue line shows the current 12-month economic consensus forecast as measured by Consensus Economics.

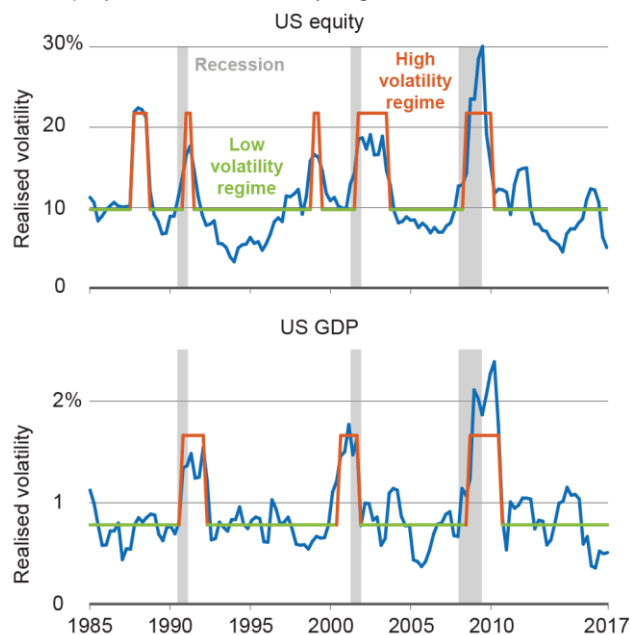
## Low vol is the norm

Market volatility comes with a vocabulary of anxiety. It is bad when it is rising or high – usually coinciding with equity market selloffs – but it is also bad when it is ‘unnaturally’ low. So low volatility appears an ominous signal, no matter the circumstances. The widely followed VIX Index on S&P 500 volatility, dubbed the ‘fear gauge,’ notched some of the lowest readings in its 24-year history this year. We believe more nuance is needed to understand market volatility. We find that realised US equity vol – the severity of monthly swings in the broad stock market – has historically stayed low for remarkably long periods, in an analysis of more than a century of US equity data. Volatility does not follow a normal bell curve distribution but has a fat tail. This implies we should not expect volatility to revert to a single equilibrium, or mean. It also tells us that equity vol has regime-switching behaviour: often low, sometimes high.

Low-vol regimes, when US equity volatility averages 10%, can last for years. Sporadic spikes happen, but they are temporary and do not cause a change to a high-vol regime (22% volatility). See the chart below. Running a regime-switching analysis on data since 1985, we find a 90% chance that any low-vol regime will persist from the current month over the next 12 months. What triggers a switch? The economy is key. Jumps to high-vol market regimes coincide with rising US economic volatility. US equity and macro vol regimes tend to overlap, apart from the 1987 equity plunge and 1998 market seizures. Those episodes were short-lived and did not feature high macro vol.

## Regime change

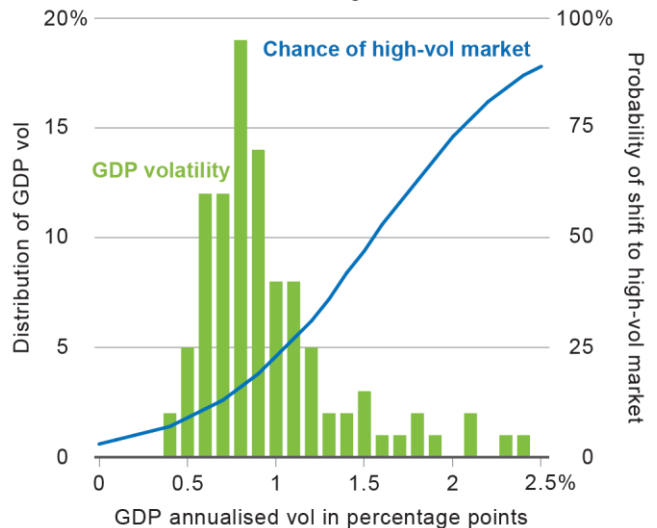
US equity and GDP volatility regimes, 1985-2017



Sources: BlackRock Investment Institute and BlackRock’s RQA team, with data from Robert Shiller and the US BEA, July 2017. Notes: Realised volatility is calculated as the annualised standard deviation of monthly changes in US equities over a rolling 12-month period. Using a Markov-Switching regression model, we calculate two vol regimes: a high-vol regime (orange) and a low-vol regime (green). The orange and green lines plot the average vol level during each regime based on a broader sample from 1872 to 2017. We use the same regime methodology for US GDP based on annualised quarterly data.

## Transition switch

US GDP vol and chance of high-vol market, 1985-2017



Sources: BlackRock Investment Institute, with data from US BEA, July 2017. Notes: The green bars show the percentage of historical readings of US GDP realised vol at each vol level. Realised US GDP vol is measured as the annualised standard deviation of quarterly GDP readings over a rolling six-quarter period. The blue line shows an estimated probability of moving from an equity low-vol to high-vol regime for a given level of GDP vol based on a regression of the two.

## Macro matters

The data suggest that low-vol regimes are persistent, whether for GDP or equity market vol. The probability of staying in a low-vol regime is similarly high. When running transition probabilities – what it would take to move from a low-vol to high-vol regime – we find a very high chance that a low market volatility regime will persist if macro volatility also stays low. Our analysis finds current realised GDP vol is 0.5 percentage points, among the lowest levels since 1985, as the bars in the chart above show. The chance of shifting to a high-vol market regime (the blue line) rises as macro vol increases, we find. These probabilities make no statements about causality – a shock would likely spark the shift out of a macro or market low-vol regime, wherever that shock originates. Still, it reinforces a key conclusion: Low market vol is tied to the economic backdrop. Not all high market vol regimes are alike and some come and go quickly, with no echoes in the economy. It is the overlapping market and macro shocks that are the most fraught with potential systemic danger.

What drives GDP volatility? Being in an expansion matters a lot, with GDP vol surging around recessions. Financial asset risk premia are tied to the present value of future cash flows. A low GDP vol regime – overlapping with a low market vol regime – likely helps reduce uncertainty about these future cash flows. We see the current US-led expansion lasting years, not quarters. See our May 2017 [Global macro outlook: Benchmarking deflation](#).

We believe that credible and more predictable monetary policies – reinforced by inflation targets – have encouraged greater certainty about the path of short-term interest rates. Of course, these factors are intertwined: Reduced macro uncertainty implies reduced policy uncertainty. Structural market changes may have also helped dampen vol, including the impact of high frequency trading in equities.

## Not necessarily complacent

A low VIX is widely cited by market analysts as signalling complacency. The constant worry? The equity bull market is long in the tooth. It's only a matter of time for vol to spike anew and the inevitable market reversal to arrive. We have a different take.

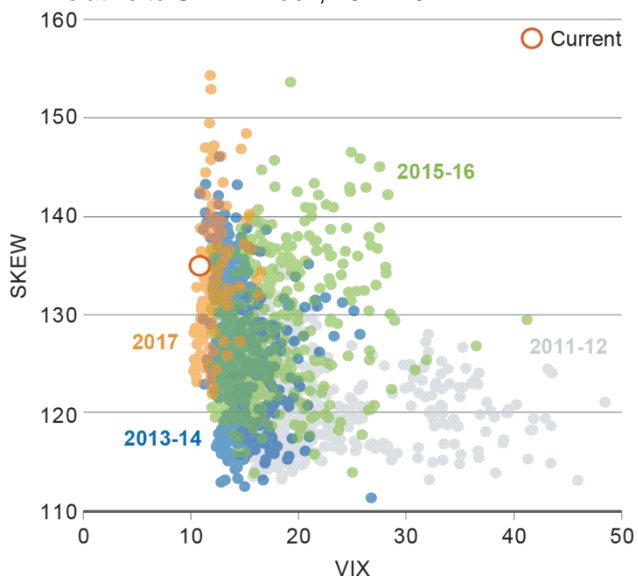
The Chicago Board Options Exchange's (CBOE) VIX measures 30-day implied, or expected, vol on the S&P 500 Index. It is a weighted average of the price of puts (options that tend to gain when the S&P falls) and calls (options that tend to gain when the S&P goes up) near current S&P levels. Implied vol is closely tied to realised vol – options pricing cannot diverge too far from actual volatility. There are other ways to gauge hedging demand from options pricing. One is to look at the relative price of options. CBOE's SKEW Index goes beyond the VIX to capture the 30-day options pricing across the broad spectrum of downside puts and upside calls relative to the S&P 500's latest level. We believe the SKEW better reflects investor perceptions of tail risk than the VIX alone. Downside puts almost always trade at a premium to upside calls because investors fret more about a sudden, sharp drop – a vestige of the scars suffered from 1987 to 2008. A rising SKEW suggests that investors are paying up for downside puts.

The chart below plots the SKEW in the post-crisis period relative to the VIX. In the past few years, the SKEW has reached new highs even as the VIX gradually fell near the all-time lows. Low vol appears to spur bigger demand for puts to limit downside risks. That is not a reaction that suggests complacency, at least in equity markets.

To be sure, the popularity of leveraged equity vol selling as a strategy to earn returns – essentially taking the other side – may help suppress the VIX and could lead to sharp unwinds. But a low VIX by and in itself is no sign of equity market complacency, in our view.

## Tail risk hedging

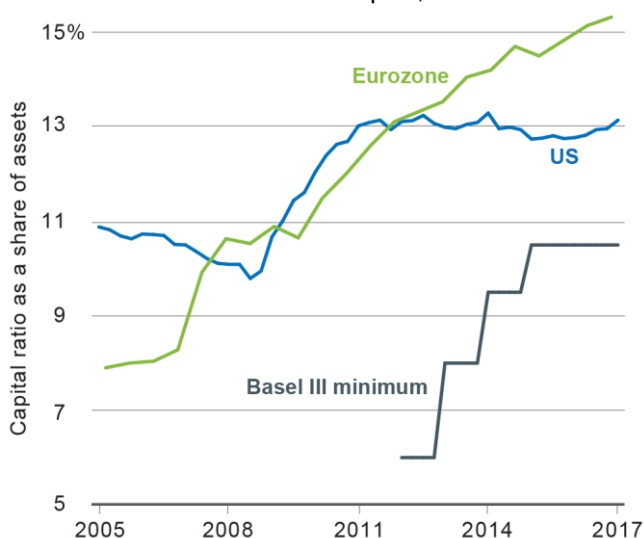
VIX relative to SKEW Index, 2011-2017



Sources: BlackRock Investment Institute, with data from CBOE, July 2017. Note: The chart shows the level of the VIX Index relative to the level of the CBOE's SKEW Index for each trading day since 2011.

## Fortified banks

US and eurozone tier 1 bank capital, 2005-2017



Sources: BlackRock Investment Institute, with data from US Federal Deposit Insurance Corp., European Central Bank, Bank for International Settlements, July 2017. Note: The chart shows asset-weighted tier 1 capital ratios for US and eurozone banks, as well as minimum tier 1 requirements under Basel III.

## Vulnerability spotting

Systemic economic imbalances and financial vulnerabilities are the culprits that bring expansions to an end. Often they become obvious only in hindsight. The 1990s tech and 2000s US housing bubbles may have been debated as looking bubble-esque at the time, but many policymakers and investors were not convinced and did not take action.

Are we better positioned to withstand similar shocks today? Banks, for one, are likely more able to weather losses thanks to heftier capital cushions. See the chart above. Post-crisis regulation and periodic mini-crises over the past decade so far have kept overall market froth in check, we believe. Small forest fires can help prevent bigger ones.

We do not see systemic risk as high – but have concerns. US corporate leverage is often cited, though we believe the motivation – low rates and share buybacks – makes this less worrying. Others include: US subprime auto loans, European corporate bond valuations, red-hot Canadian housing, commercial real estate and leveraged selling of US equity vol. In each case, it's hard to see how any one can morph into a broader systemic risk – so far. The risk is that low volatility breeds a stealth leverage build-up at the core of the financial system. In the mid-2000s, such behaviour helped sow the seeds of the global crisis.

We believe leverage in the financial system can turn into an economic threat if the eventual bust causes a chain reaction and impairs the flow of credit to the economy. On the flip side, asset bubbles can unravel without such consequences. The 2000 dot-com bust and the late-1980s savings and loan crisis contributed to recessions but were not systemic.

No two crises are alike, so vigilance is needed. Relaxed US banking regulation could revive appetite for taking on leverage, but we expect rules designed to prevent a financial crisis rerun to stay intact. The bigger risk may be that many investors are under-risked and under-invested in equities, as we argue in our [2017 Midyear outlook](#).

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