

# Global Macro Strategy

## Can one small hike cause a giant tightening?

### Global Macro Strategy

Global

#### Can we be sure the Fed has only tightened 25 basis points?

In our view, the 25bp of Fed hikes reveals little about how much the Fed has truly tightened. The "liftoff" from extraordinary, unconventional monetary easing to the start of tightening was an enormous leap. Several measures suggest the Fed's hawkish shift was even greater than in either the 1994 or 2004 rate hike cycles.

#### If the policy rate doesn't reflect policy tightening, then what does?

We consider a range of market metrics typically included in financial conditions indexes. From credit spreads to the dollar, it appears the Fed has gotten far more "bang for its buck" when it comes to tightening.

#### We attempt to capture tightening by converting market metrics into rate hikes

We aim to create a common language for interpreting tightening of "financial conditions" by translating changes in financial market variables into fed funds rate equivalents. We do this by gauging how shocks feed into future economic activity, and standardize the measures as if they had been fed fund rate increases.

#### Financial conditions delivered more than 250bp of "hikes" through January...

We find that the most tightening was transmitted through wider credit spreads, the stronger dollar, and tighter credit standards, while falling 10-year Treasury yields were equivalent to rate cuts. We estimate that the combined tightening from September 2014 to January 2016 was equivalent to 273bp of tightening.

#### Market rebound since early-2016 did not offset past stress with "cuts"

The tightening of financial conditions motivated the Fed's dovish turn in March, and conditions have eased since: credit spreads narrowed, equities rose, the dollar weakened, and Treasury yields fell further. We estimate easing since January provided a combined 134bp "cut" offset, leaving a high degree of net tightening (~139bp).

#### Why does this matter? Greater sensitivity and less space for hikes

Fed tightening may not be properly understood. The Fed likely has a shorter distance to go with rate hikes this cycle, and may have already delivered a significant chunk of tightening indirectly – via financial conditions. Future hikes may have less of an impact than the first; nonetheless, if hikes continue to have substantial market consequences, the risk the Fed runs is unintended cooling of the economy with fewer-than-intended hikes. This is obviously a risk for equities and a driver for flatter curves in fixed income.

#### How to position if the Fed underestimates tightening risks?

Against this backdrop, we stay short EM, where we would expect to see USD strength vs. EM currencies, as well as assets and currencies exposed to EM, such as the AUD. We also recommend hedges for long DM equities, such as long EUR/SEK with in G10 FX. In corporate credit, we prefer longer duration US high grade bonds vs. high yield, since the Fed may put further pressure on firms with weaker credit fundamentals.

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## Does 25bp really tell us how much the Fed has tightened?

Viewed narrowly through the policy rate, Fed "liftoff" has been minimal. The fed funds rate was hiked just once. The increase is barely distinguishable from the 0-25bp range where it stayed from December 2007 to 2015. Indeed, the current policy rate is still below the 1% *floor* from which tightening started in 2004. One hike clearly pales in comparison to the 17 consecutive hikes between June 2004 and 2007 or the rapid hiking to 6% between February 1994 and 1995 (Figure 1).

The overnight interest rate is the standard tool for adjusting monetary policy, but the *degree* of tightening (or loosening) should not be viewed myopically. Broad *financial conditions* are the medium through which monetary policy is transmitted to the economy.<sup>1</sup> Looser financial conditions improve the outlook and tighter financial conditions weaken it. Expectations about the future course of policy are what impact financial markets and ultimately economic activity. Changes in policy expectations can prompt significant market moves without changes in the price of overnight money or in monetary aggregates.

The effects of Fed policy must be considered in this much broader context. If Fed policy expectations result in higher equity prices, lower borrowing rates, narrower credit spreads, and a weaker dollar, then these looser financial conditions are equivalent to easing – regardless of specific policy changes. On the flipside, if Fed expectations lead to lower stock prices, wider spreads, and a stronger dollar, the Fed has tightened. Since markets reflect changes in expectations immediately, tightening in financial conditions can occur long before policy is ever realized.

The shadow fed funds rate is one way to gauge changes in the Fed's policy stance. The measure is constructed so that it is not bounded by zero and shows ongoing easing of Fed policy after rates fell to zero. By this measure, the trough in Fed easing was in mid-2014 at nearly -3% in fed funds terms, suggesting the recent rate rise was not from 0-25bp but much lower. Based on the shadow rate, the hawkish shift since late-2014 was equivalent to a 300bp+ tighter stance, exceeding the shift in 1994 and 2004 hiking cycles (Figure 2). Financial markets have clearly responded as if more than 25bp of tightening has been delivered.

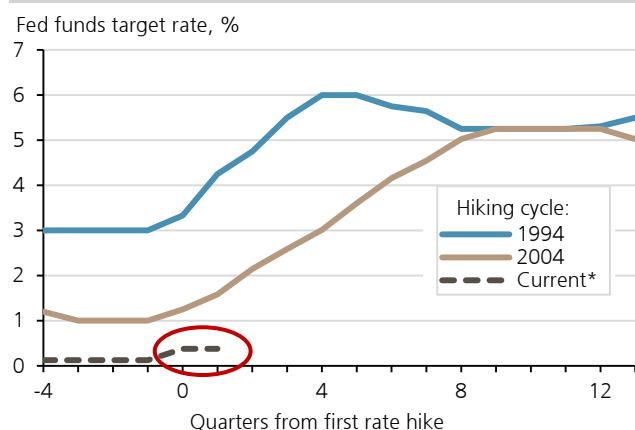
**The Fed may have only lifted its policy rate by 25 basis points...**

**...but that's not the only way policy is transmitted...**

**...and the shift from extraordinary easing...**

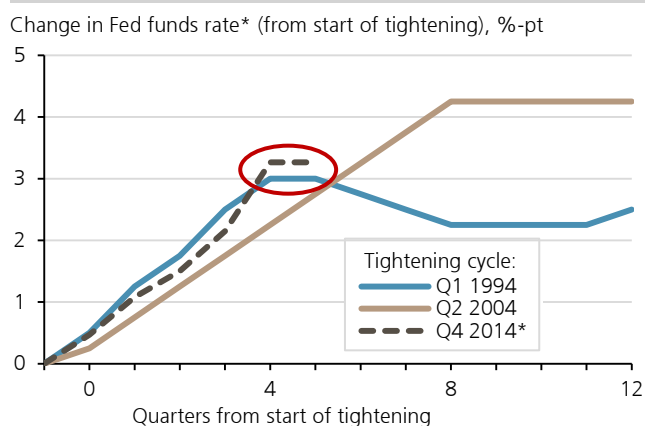
**...to tightening is equivalent to far more than one hike.**

**Figure 1: Level of fed funds says "not much tightening"**



Source: Bloomberg, Haver Analytics, UBS calculations. \*t=0; Q4 2015.

**Figure 2: Increase in Fed shadow rate says "much tighter"**



Source: Bloomberg, Haver Analytics, UBS. \*Based on shadow fed funds rate.

<sup>1</sup> Fed Chair Yellen said in Dec 2015: "what matters for the economic outlook are the public's expectations concerning the path of the federal funds rate over time: It is those expectations that affect *financial conditions* and thereby influence spending and investment decisions."

## How does this tightening compare with the past?

It is common to hear that "financial conditions" have tightened or loosened, but there is no widely agreed upon metric or index.<sup>2</sup> By nature, the structure of financial conditions continually evolves, but what investors have in mind are variables that are both influenced by and *influence economic outcomes*. For this reason, financial conditions indexes include measures of the following:

- (1) Interest rates, which influence future borrowing costs
- (2) Exchange rates, since a weaker currency should boost exports and output
- (3) Equities and other asset prices that contribute to "wealth effects"
- (4) Credit spreads to gauge marginal borrowing costs for corporates
- (5) Credit standards, since changes influence the future supply of credit
- (6) Oil prices, where a rise reduces disposable income (and vice versa).

Considered in the context of Fed hikes, fluctuations in these measures can either amplify or offset the tightening of monetary policy. For example, the dollar weakened throughout the 2004 hiking cycle, providing an easing offset to hikes. The dollar did appreciate during the 1994 cycle, and has appreciated even more rapidly in the current cycle (Figure 3). The strengthening of the dollar that began in late-2014 is one of the clearest ways that Fed policy expectations tightened financial conditions well in advance of policy action.<sup>3</sup>

In past hiking cycles, credit standards eased as the fed funds rate rose. Even if the cost of borrowing was rising, increasing availability of credit reduced the impact. In the past, it was not until 2-3 years into hiking that credit standards tightened. By contrast, credit standards for business loans are already tightening (Figure 4).

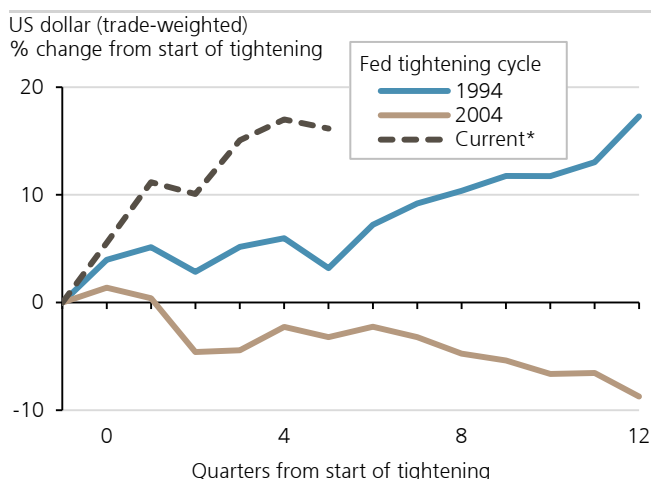
It's not just banks where credit is getting tighter. Our credit strategy team's proxy for non-bank credit standards, comparable to the Senior Loan Officer Survey measure, first shifted to tightening in early-2015 (Figure 5). This is especially important as the bond market has become the marginal provider of liquidity, and the tightening seen here has exceeded that through bank channels (see ["Bank vs. nonbank lending signals: the plot thickens"](#)).

**Financial conditions are what really influence the economy...**

**...and they can tighten long before any change in policy.**

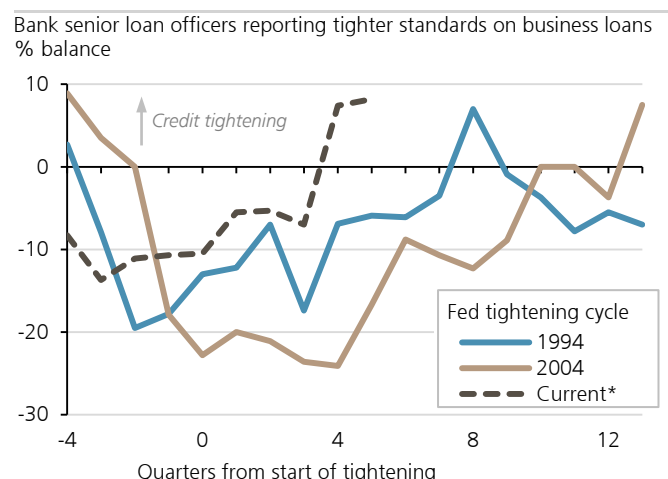
**Credit standards have tightened much sooner than in past cycles**

**Figure 3: The dollar has done a lot of tightening work**



Source: Bloomberg, Haver Analytics, UBS calculations. \*Note: \*t=0; Q4 2014.

**Figure 4: Tighter standards are restraining credit supply**

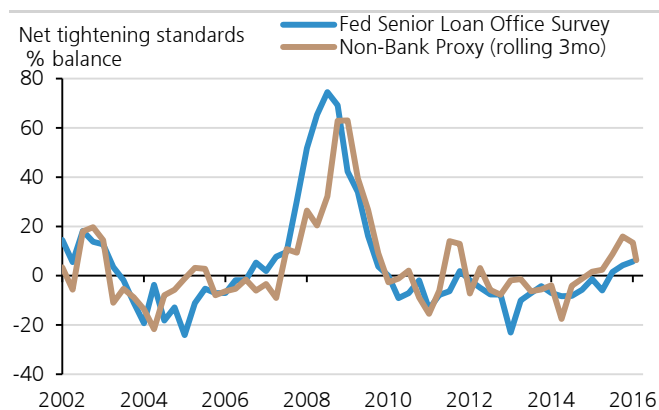


Source: Bloomberg, Haver Analytics, UBS calculations. Note: \*t=0; Q4 2014.

<sup>2</sup> See for instance Sirio Aramonte, Samuel Rosen, and John W. Schindler "Assessing and Combining Financial Conditions Indexes," Federal Reserve Working Paper, 2013-39.

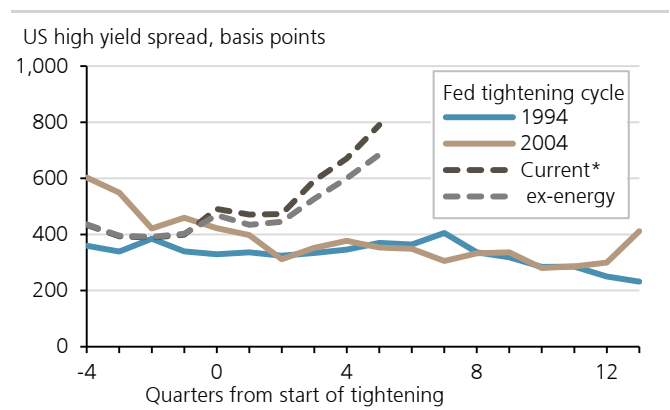
<sup>3</sup> We mark the "tightening cycle" start in Q4 2014, given the notable Fed shifts at this time.

**Figure 5: Our non-bank proxy shows tightening, too**



Source: Bloomberg, Haver Analytics, UBS calculations.

**Figure 6: Borrowing costs are rising faster than fed funds**



Source: Bloomberg, Haver Analytics, UBS calculations.

Credit spreads are another way funding has become more challenging and expensive for firms. This stands in stark contrast with prior hiking cycles, where spreads narrowed. High yield spreads were consistent with past cycles, but have widened by roughly 300bp. Prior compression had been driven by Fed-induced "reach-for-yield", and, while some widening since 2014 is attributable to oil, ex-energy spreads widened, too (Figure 6).

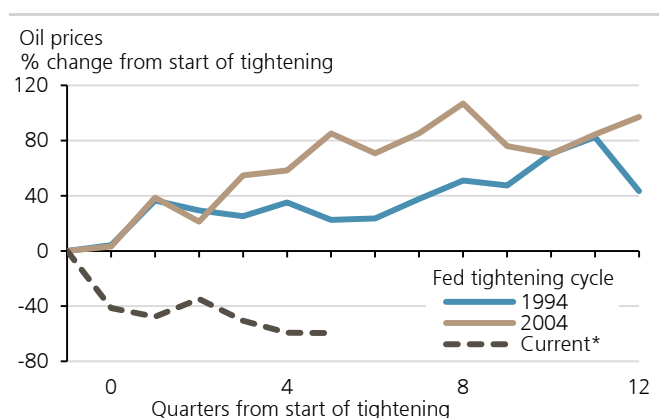
Oil prices are a clear outlier compared with past cycles, having fallen close to 60% from mid-2014. Oil prices rose in prior tightening cycles (Figure 7), and these are a form of tightening. Viewed symmetrically, cheaper oil count as easing, although recent experience of falling oil prices calls this into question. The benefits from lower energy prices have been [more challenging to identify](#) than the costs, especially with rising importance for the US economy (US oil production nearly doubled from 2010-2014, following 25 years of declining output).

**The fall in oil prices has provided limited easing...**

Equity prices have not provided the same boost as in prior cycles (Figure 8). While the S&P 500 initially sold off in response to the surprise Feb 1994 hike, it more than made up for the drop in following quarters. Unconventional Fed easing provided an enormous boost to asset prices (see [Big Macro 3](#)). The Fed helped to "pull forward" returns as it eased, but lacklustre equity returns have followed as the Fed turned to tightening mode – and our equity strategists see more signs of ["late innings"](#). Global equities have fared even worse, as the MSCI all-world index (ex-US) has declined since Fed tightening commenced in late-2014 (Figure 9).

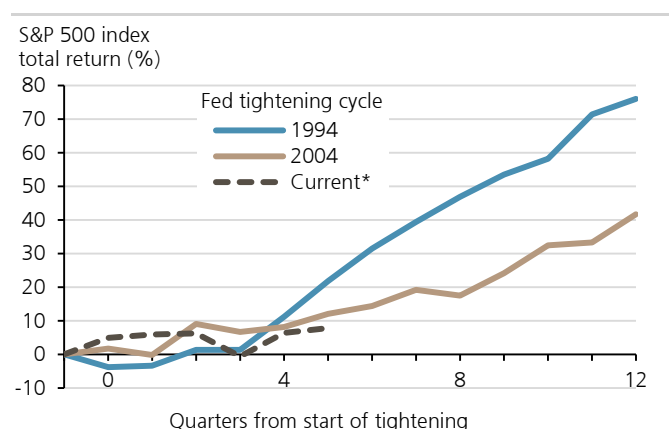
**...and equity prices have not been so supportive either.**

**Figure 7: Cheaper oil has been less supportive than hoped**



Source: Bloomberg, Haver Analytics, UBS calculations. Note: \*t=0; Q4 2014.

**Figure 8: US equities have rallied less than in prior cycles**



Source: Bloomberg, Haver Analytics, UBS calculations. \*t=0; Q4 2014.

## With markets like these, who needs to hike?

Across a number of metrics the tightening of financial conditions in the current cycle has exceeded that in past hiking cycles. In prior cycles, financial conditions effectively eased and partially mitigated rate hikes. That financial conditions continued to ease as the Fed hiked may reflect a stronger domestic and global growth backdrop than in the current period, as well as financial markets that were less sensitive to the unwind of prior easing.

In past hiking cycles, a consequence of financial conditions easing amid rising policy rates is that the Fed ultimately made up the difference by hiking more than originally anticipated. In Figure 10, we show (1) how much the FOMC projected it would increase rates in the six quarters after tightening started; (2) how much the market priced just after hiking started; (3) the actual amount of hikes delivered over the following six quarters.<sup>4</sup> In 1994-1995, the Fed delivered more than twice the 100bp of hikes it initially projected. In the 2004 cycle, the Fed hiked 50bp more than planned in the six quarters after hiking commenced.

By contrast, the Fed has delivered far fewer hikes than projected in 2014 or priced by the market at that time. Instead of the 6 hikes anticipated by the end of Q2 2016, so far the Fed has only delivered one 25bp move, assuming they do not hike rates in June (Figure 10). The tightening of financial conditions since late-2014 effectively supplanted the need for rate hikes.

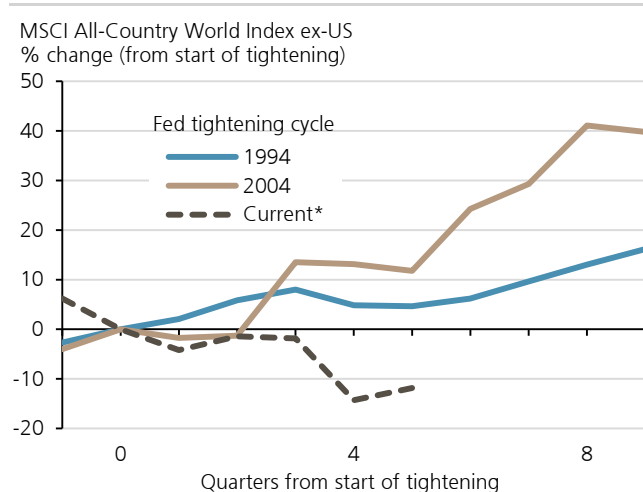
From the simple comparison shown in Figure 10, we can assess how easing or tightening of financial conditions may have added to or subtracted from Fed hikes. In 1994 and 2004, financial conditions effectively *eased* by the rate hike equivalents of 130bp and 50bp, respectively, in the first 6 quarters of hiking. We base this on the FOMC decision to hike more than originally projected. In the current cycle, where we consider tightening to have started in late-2014, financial conditions delivered (at least) 125bp of tightening in lieu of Fed hikes. But, as we show later, this may understate the degree of tightening.

**In the past, the Fed hiked more than originally planned...**

**...as financial conditions were more supportive...**

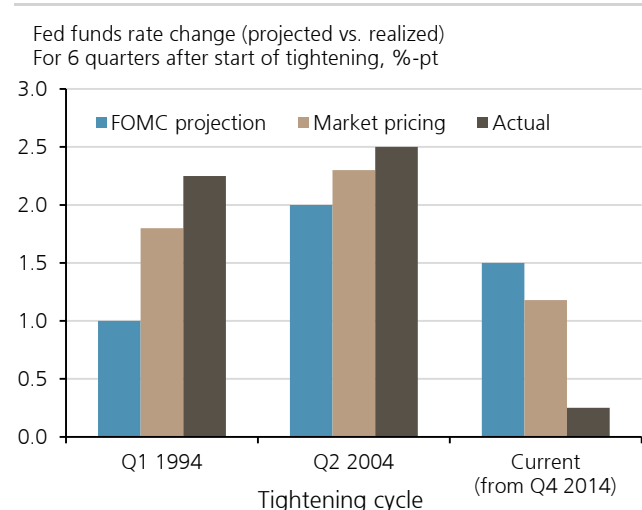
**...but this cycle, markets are doing the tightening, not the Fed.**

**Figure 9 : Global equities have fallen during this cycle**



Source: Bloomberg, Haver Analytics, UBS calculations. \*t=0; Q4 2014.

**Figure 10: Prior cycles saw *more* hikes than projected**



Source: Bloomberg, Haver Analytics, Philly Fed, UBS calculations.

<sup>4</sup> These projections are derived from historical Greenbook forecasts from the Federal Reserve Bank of Philadelphia's archives.

## Plenty of tightening so far: limited rate hikes required

It's our view that financial variables can impact the economy in much the same way as policy rate increases. We set out to translate the tightening of financial conditions we have seen into their *equivalent* increases in fed funds rate. What we find is that far more than 25bp has been delivered via this channel.

Since we are interested in how financial conditions impact the economy, our approach is to estimate the GDP impact of changes in financial variables and then convert them into like-for-like terms, based on the fed funds rate impact on GDP.<sup>5</sup>

By using a vector autoregression (VAR), we can incorporate the feedback from our variables to each other. We follow an approach similar to the OECD and include measures of rates, the trade-weighted dollar, equities, oil prices, core inflation, GDP, credit spreads and credit standard variable.<sup>6</sup> We simulate shocks to each of the variables (using generalized impulse responses) and gauge the GDP

We use our equations to measure and standardize how much tightening we have seen in individual variables, before combining to an aggregate measure. We look at changes in our financial variables from September 2014 to January 2016. As we show in Figure 11, widening credit spreads translated to the most tightening. By our estimation, the expected impact from wider spreads in both investment grade and high yield is equivalent to fed funds increase of 271bp and 245bp, respectively. The tightening of credit standards also showed a significant impact, ~130bp of hikes. The tightening of credit standards also showed a significant impact, ~130bp of hikes.

The strength of the dollar, with the arrival of the "policy divergence" theme in late-2014, provided roughly 130bp of rate hike equivalents. This is within range of Fed estimates.<sup>7</sup> To a lesser extent, the decline in the S&P 500 also tightened, equivalent to one hike, over the sample, as did 2-year Treasury yields. The rise in 2-year yields was more than offset with falling 10-year yields. We include oil in our model as a control, but exclude as measure of easing, given its [changing linkages](#).

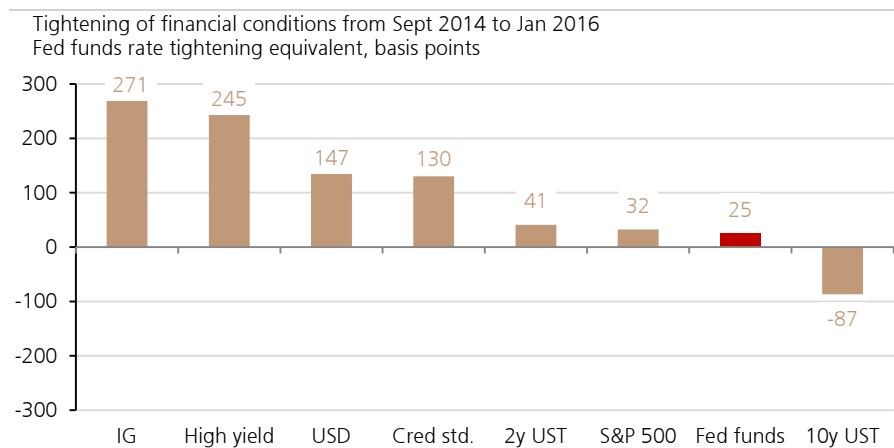
**We seek a common measure for comparing financial variables...**

**...and with our Fed focus, we aim for rate hike equivalents...**

**...and find credit spreads and USD strength provided many "hikes"...**

**...that were not offset by "cuts" in lower 10-year Treasury yields.**

**Figure 11: In fed funds terms, how have broad financial conditions tightened?**



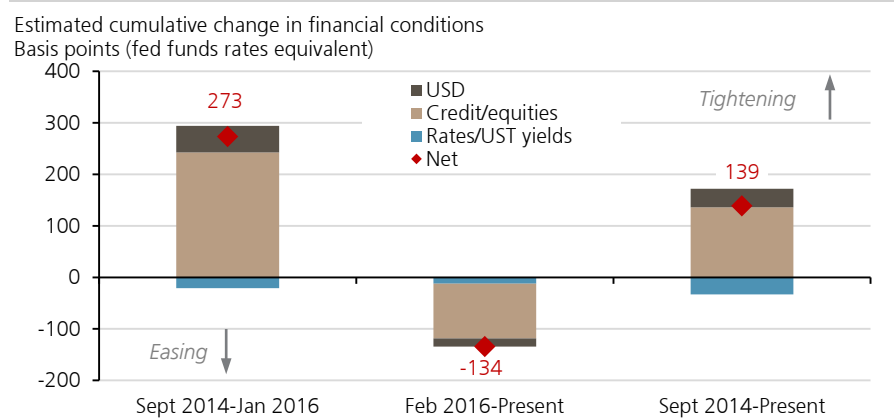
Source: Bloomberg, Haver Analytics, UBS calculations.

<sup>5</sup> Our conversion is that 100bp of policy rate increase leads to 0.4% GDP decline over 4 quarters following the shock, consistent with the FRB/US model.

<sup>6</sup> Guichard, Haugh, Turner, "Quantifying the impact of financial conditions in the Euro area, Japan, United Kingdom, and United States" OECD Working Papers No. 677 (March 2009).

<sup>7</sup> For instance, in a December 2015 speech, Fed Governor Brainard said it would take 100bp of rate cuts to offset the employment impact of USD strength since mid-2014.

**Figure 12: Tighter financial conditions have been worth nearly 150bp of "hikes"**



Source: Bloomberg, Haver, UBS calculations. Note: Weighted aggregate. "Credit/equities" includes credit spreads (HY and IG), credit standards, S&P 500. "Rates/UST yields" includes 2- and 10-year yields, fed funds.

By estimating our variables from September 2014 to January 2016, we capture the commencement of tightening and a month after the December 2015 hike. We then estimate the combined effect of tighter financial conditions to be equivalent to 273bp of Fed funds hikes (Figure 12).<sup>8</sup> Over a period with just 25bp of active hikes, financial conditions delivered tightening in excess, by a factor of 10.

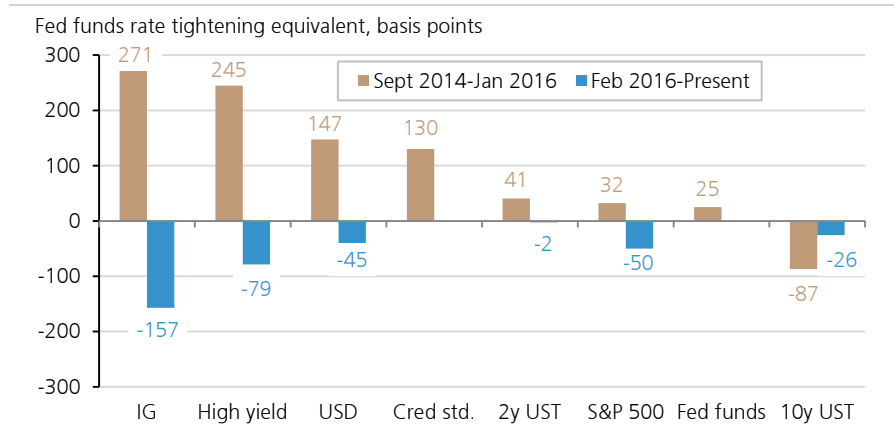
**Over a period with one hike, we estimate 273bp of tightening...**

### Has recent easing offset past tightening?

Markets have rebounded and financial conditions have eased since January, a development we largely attribute [to the Fed's response](#). We have not seen a full rebound though. By using the same coefficients as before, we show in Figure 13 that the rate cut equivalents since January have been material: the bounceback in the S&P500 erased prior tightening, spreads narrowed, Treasury yields fell further. The loosening equates to 134bp of cuts in our combined measure (Figure 12). Nonetheless, net tightening has been delivered since late-2014: on the order of 139bp by our estimate. This residual tightening may not be fully appreciated.

**...which was only offset by 134bp as the Fed provided policy relief.**

**Figure 13: Markets have "cut" since early 2016, but not offset prior "hikes"**



Source: Bloomberg, Haver Analytics, UBS calculations.

<sup>8</sup> Figure 12 reflects the additive nature of shocks. In our combined measure: Rates metric are weighted and summed to 1, as are credit variables, the dollar is given a weight of 0.35 and S&P 500 is 0.15. These weights sum to 2.5, such that a 100bp ffr-equivalent shock to all measures equates to a combined 250bp hike. The weighting scheme is our own and subject to wide confidence intervals. It is influenced by the FCLs in Guichard and Turner "Quantifying the effect of financial conditions on US activity," OECD Working Papers, No.635(Sept 2008).



## Less appreciation for tightening, greater risks for markets

Tighter financial conditions hit the economy with lags. Tighter credit prompted our US economics team to push their call for the next hike to September, which they recently [affirmed](#) (followed by another hike in December and four in 2017). Concern about financial conditions drove the Fed's dovish turn [in March](#), and in a speech two weeks later, Chair Yellen endorsed the steep reduction in the market's pricing of Fed hikes as an "automatic stabilizer" that helped markets rebound.

Chair Yellen's March directive broken the adverse feedback loop that markets had cycled through continually. As Figure 14 shows, S&P 500 rallies would induce more pricing of Fed hikes. This also tended to strengthen the dollar and push energy prices lower, ultimately rendering the rallies self-defeating. Another takeaway from Figure 14 is that similar S&P 500 levels were reached with fewer hikes priced, e.g., 2100 with 3 hikes priced in early-2015, 2 hikes in late-2015, and 0-1 hike in 2016.

In our view, the risk rally from March could extend in the absence of Fed fears. Treasury yields [became desensitized](#) to incoming US economic data, the dollar weakened, and oil prices rebounded. We [highlighted](#) there were limits to how far equities could run before inducing the Fed to return to its tightening course. Now, those limits seem to have been reached, and we're back in [Fed vs. markets](#) mode.

The FOMC acknowledged in the April minutes that the low level of rate hikes had been a key factor easing financial conditions. This has not stopped FOMC participants from becoming more eager to elevate market pricing and increase optionality for a June hike [in recent days](#).

It is a worrisome development when Fed officials feel their hike credibility is challenged. As a consequence, they may feel compelled to hike, in spite of weaker markets, with *credibility* as the goal. [Better Q2 data](#) and declining unemployment, which continues to track prior cycles, provide added confidence (Figure 15).

The inertia towards tightening is a threat to risky assets and may flatten curves in fixed income. The next hike may not cause the same degree of tightening as the first, but the distance the Fed has to travel is shorter than in past cycles. As such, the Fed may be further into its tightening cycle than perceived. Just 200-250bp of rate hikes in total should get the Fed through a full cycle, [as we estimated](#).

Against this backdrop, we recommend short positions in EM and EM-exposed assets and other hedges to long DM equities, such as short AUD and long EUR/SEK. In credit, we prefer longer duration US high grade bonds vs. high yield.

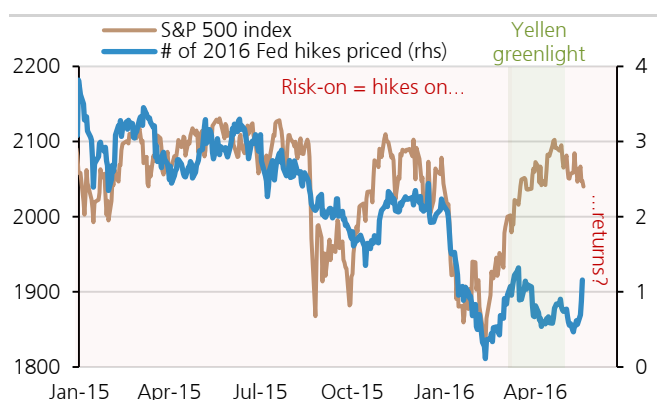
**Yellen allowed risk to rally without fear of the Fed...**

**...until the market rebounded, but pricing of Fed hikes did not...**

**...and so Fed speakers grew louder, as they felt doubted...**

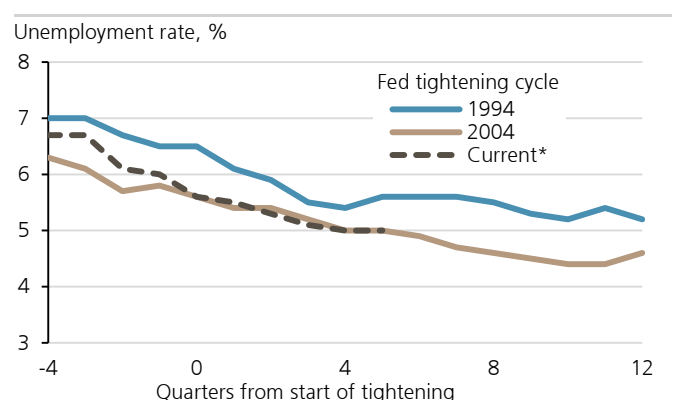
**...raising risk of policy errors and leading us to position as bears.**

**Figure 14: Yellen let S&P500 diverge; hawk talk undoes it**



Source: Bloomberg, Haver Analytics, UBS calculations.

**Figure 15: Falling unemployment lifts Fed tightening risk**



Source: Bloomberg, Haver Analytics, UBS calculations. \*t=0; Q4 2014.



### **Valuation Method and Risk Statement**

Risks of multi-asset investing include but are not limited to market risk, credit risk, interest rate risk, and foreign exchange risk. Correlations of returns among different asset classes may deviate from historical patterns. Geopolitical events and policy shocks pose risks that can reduce asset returns. Valuations may be adversely affected during times of high market volatility, thin liquidity, and economic dislocation.

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