

RED OCTOBER: EQUITIES MARKETS SELLOFF EXPLAINED



Bruno Syrmen
CIO Alternatif - Partner
bsyrmen@seven-cm.com
+33 1 42 33 75 22

Following what has been the worst month of the year for pretty much all the asset classes, USD Currency apart, the worst month for US equities, as a whole, since 2011, and the worst month for the NASDAQ since the GFC, we decided to take a deeper and more thorough look at what actually happened, in the US Equities markets.

This study will exhibit some facts which will help to explain why October 2018 which has been called “Red October” was one of the worst months for CTAs, Risk parity, volatility targeting and Hedge Funds since the great financial crisis (GFC).



- Introduction

Selloffs following record highs are usually fierce and should probably be viewed as some semblance of cathartic, but that's not the way it works in the post-GFC world. As the financial blogger The Heisenberg put it: "Drawdowns are generally seen as offensive these days". Selloffs are a sign that something went "wrong" in the "natural" order of things (i.e a very long equity bull market) and that the investing public deserves to know who was responsible.

- The hunt for more exposure leading to new highs.

On Monday 3rd of October, the Dow Jones Industrials index reached a new historic high at 26951.81, while the SP 500 Index fell short of just one point from equaling its end of September record print (2939.86 for a highest ever of 2940.91).

One of the main reasons behind this somewhat surprising rise can be seen in the following chart:

HFRXGL Index (Hedge Fund Research HFRX Global Hedge Fund Index)
SPX Index (S&P 500 Index)

Bloomberg



Source: Bloomberg

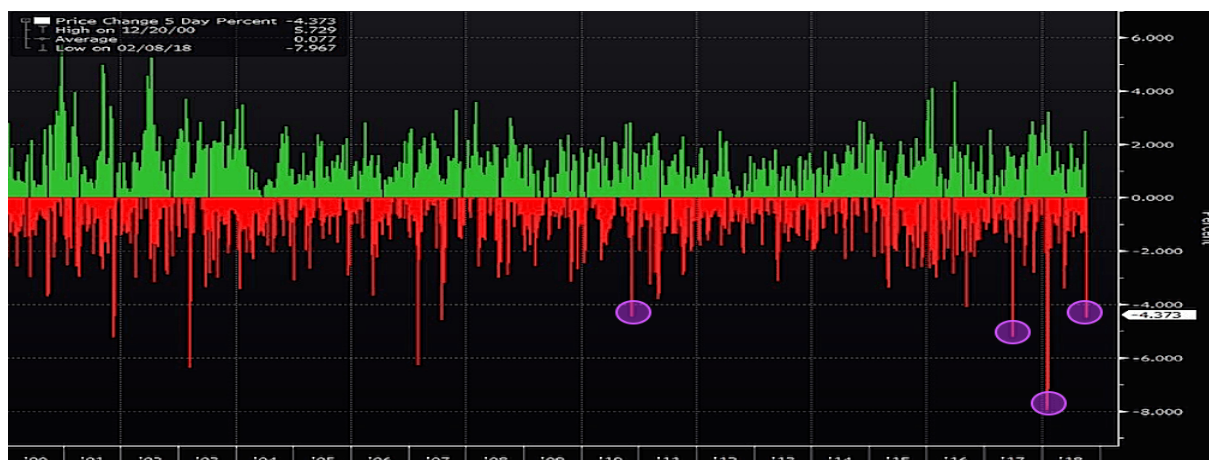
This is the chart comparing the prices evolutions of the HFRX Equity Hedge index (in white) and the S&P500 (yellow line) and what you want to note is that hedge funds started to massively underperform from July, following Facebook's post-earnings collapse, as being long the FAANG stocks was the most overcrowded trade on earth. Hedge funds were then underexposed as the market bounced back strongly in late August (EM relief due to a USD consolidation), leading to a frantic grab for exposure (i.e., they needed to catch up) which helped push benchmarks to new highs in late September. Tragically, this catch up left the Long/Short crowd with near-record exposure. It obviously came at just the worst possible time. As we will see below it did not take long for them to be forced to massively de-risk during the October shellacking.

- Beginning of October: from a new high to systematic selling in 10 days.

It is estimated that the technical selling which ensued in the first part of the month, so from the 4th to the 11th of October, amounted to roughly \$150bn. This technical selling came from two main sources: the CTAs and the Options negative gamma hedging strategies.

Options market makers who have to manage the gamma risk of their books are forced to sell when the market comes off to keep a balanced position. This is a well-known and well documented phenomenon on which we won't focus today.

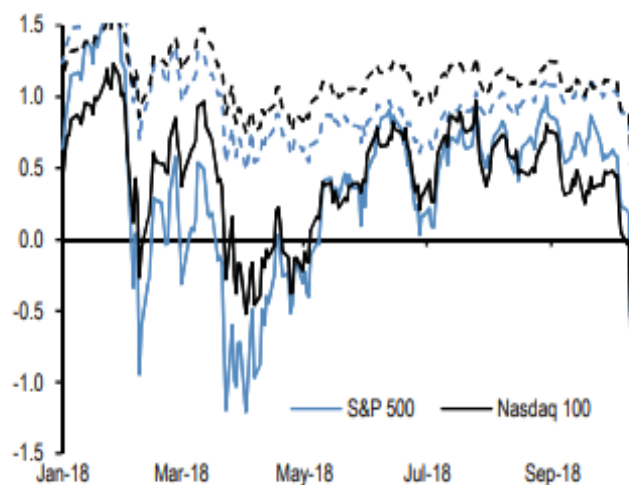
CTAs, i.e trend followers, took a lot of the blame for the early October sell off. The trend followers are the red-headed stepchildren of the quant community. A very easy scape goat you can blame without fearing any kind of backlash. As you can see on the graph below, it looks to me like the SG CTA index just had one of its four worst 5-day runs since the financial crisis:



Source: The Heisenberg

When you consider that in conjunction with the following chart from JPMorgan which shows short-term momentum signals abruptly turning short from the end of the first week of October, you come away feeling justified for pointing the finger at CTAs, as it does indeed look like they were forced into triggering then amplifying the rout:

Figure 11: Momentum signals for equity indices
z-score of the momentum signal in our Trend Following Strategy framework shown in Tables A5 and A6 in the Appendix. Solid lines show the short-term momentum signals and dashed lines show long-term momentum signals.

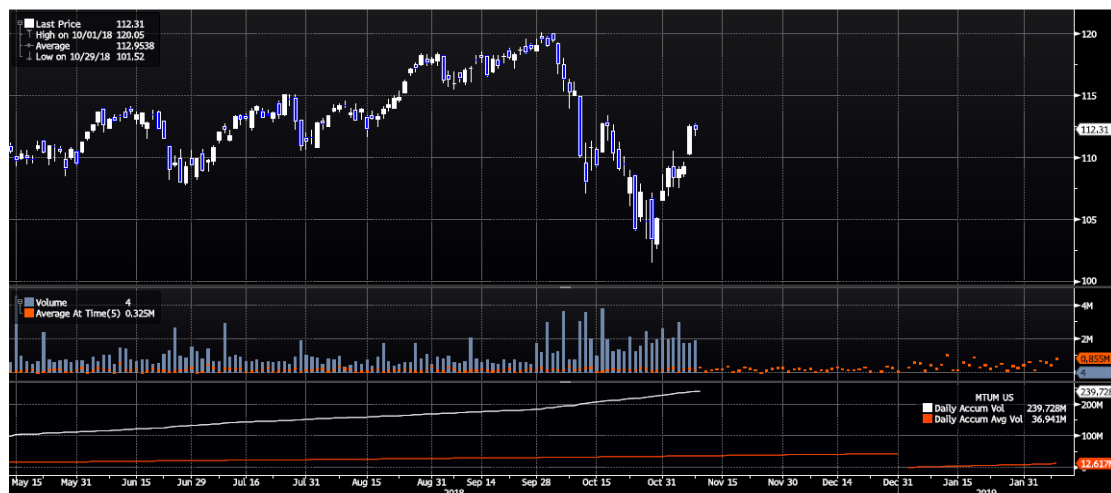


Source: Bloomberg, J.P. Morgan.

Source: JP Morgan

This collapse set the stage for the Momentum unwind that played out on October 10th and 11th, when the iShares Edge MSCI USA Momentum Factor ETF had its worst two days period on record and its second worst day ever on the 10th, after the so called “Volmageddon” explosion of February 2018. This ETF tracks the performance of an index measuring the performance of large and mid-cap US stocks exhibiting high momentum characteristics. Here is its chart with the total volumes traded.

MTUM US Equity (iShares Edge MSCI USA Momentum Factor ETF)
MTUM US Equity (iShares Edge MSCI USA Momentum Factor ETF)



Source : Bloomberg

Nevertheless, one of the usual suspects when it comes to technical selling was barely mentioned at that time, the Risk parity funds (You will find a definition of a risk parity strategy at the end). But don't be afraid to blame them just because they're the elephant in the room of the systematic strategies. Indeed, one of the main causes for market angst headed into the week of the 10th rout was a flip in the sign of the equity-rates correlation as shown below (The correlation between the SP500 and the 20+ years Treasuries is **positive** on 10th October), and that systematically spells trouble for risk parity and balanced funds.

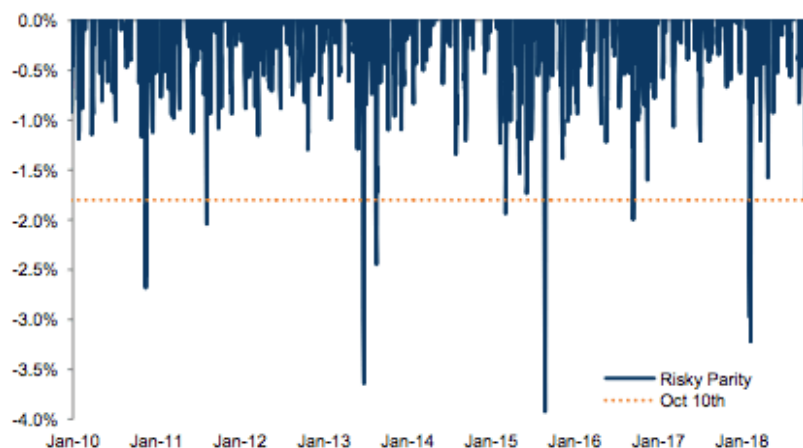
TLT US Equity (iShares 20+ Year Treasury Bond ETF)



Source: Bloomberg

According to Goldman Sachs: “A combined sell-off in equities and bonds has weighed on multi-asset portfolios, similar to February and at one point the initial sell-off in equities and bonds led to one of the worst periods for simple risk parity strategies since the GFC”. As evidence they provided us with the following chart:

Exhibit 3: Simple risk parity strategies had one of their worst weeks since the GFC
Weekly negative returns to SPX, US 10y portfolio weighted by inverse of volatility



Source: Goldman Sachs Global Investment Research

Source: Goldman Sachs

Furthermore, things were made even worse by the fact that following the long August/September rally, it seems that the allocation in some of these funds.... was 100% to equities..... With the sell-off the allocation has been reduced to ~65%, so very close to the standard split of 60/40.

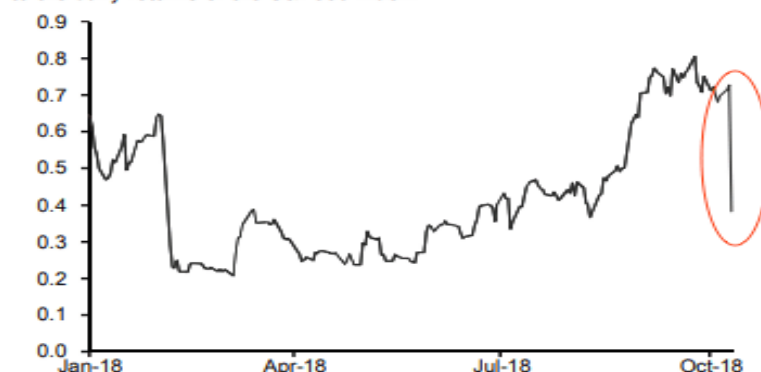
If you look at risk parity and balanced mutual fund beta to the S&P, it's pretty clear they de-risked last month, no doubt helping to accelerate the rout.

Still, could all the systematic selling described above amount to \$150Bn? According to some analysts the CTAs could have accounted for up to \$68Bn which seems already very high, if you add to that another \$40Bn to \$50Bn from the risk parity strategies first round of deleveraging, even including the gamma hedging, you are still short of 150Bn by a lot...

So maybe we should think of some discretionary market participants when we look for the culprits. Indeed, according to JP Morgan, the rolling equity beta of the Long/Short managers “collapsed over the week of the 10th of October from the historically high levels seen in September”.

Figure 3: Equity Beta of Equity Long/Short hedge funds using a univariate regression

To proxy Equity L/S hedge funds, a ~\$900bn universe, we use the HFRX Equity Hedge index. The chart shows the rolling 21-day equity beta based on a univariate regression of the daily returns of the HFRX Equity Hedge index to the daily returns of the S&P500 index.



Source: HFR, Bloomberg, J.P. Morgan.

Source: JP Morgan

Remember that catch-up attempt for exposure that found hedge funds re-risking in late August and September when a pause in the USD rise led to a bounce in battered EM? This spurred a bout of risk-on sentiment that allowed U.S. stocks to summit what, at the time, were fresh highs. Well, it looks like clearly that “grab” has left some funds overexposed.

According to JP Morgan: “The worst performing fund categories from the 1st of October to October 10th were Equity Long/Short hedge funds (-3.3%) followed by Risk Parity funds (-2.8%) and Balanced mutual funds (-2.8%)”.

Figure 1: Performance of various types of investors MTD (to Oct 10th) and on October 10th

	10th Oct	MTD
Non - Quant Funds		
Macro ex-CTAs	-0.63%	-0.31%
Equity L/S	-1.04%	-3.33%
Balanced MFs	-1.81%	-2.84%
Quant Funds		
Risk Parity Funds	-0.74%	-2.80%
HFRX Systematic Diversified	-1.19%	-1.44%
SG Trend Index	-0.46%	-0.35%
Relative Value Multi-Strategy	-0.03%	-0.36%
Equity Market Neutral	-0.73%	-0.58%

Source: HFR, SocGen, Bloomberg, J.P. Morgan

Source: JP Morgan

It's worth mentioning that according to Nomura, Global macro funds might have seen this rout coming and positioned accordingly....Which means a lot of Put options on the SP500 or any other index or ETF for that matter were purchased which forced bigger gamma hedging programs by options Market Makers when the indices started to tank. This was the situation on 12th October when the markets started to bounce.

- Middle of October: a brief but sharp 4 days bounce.

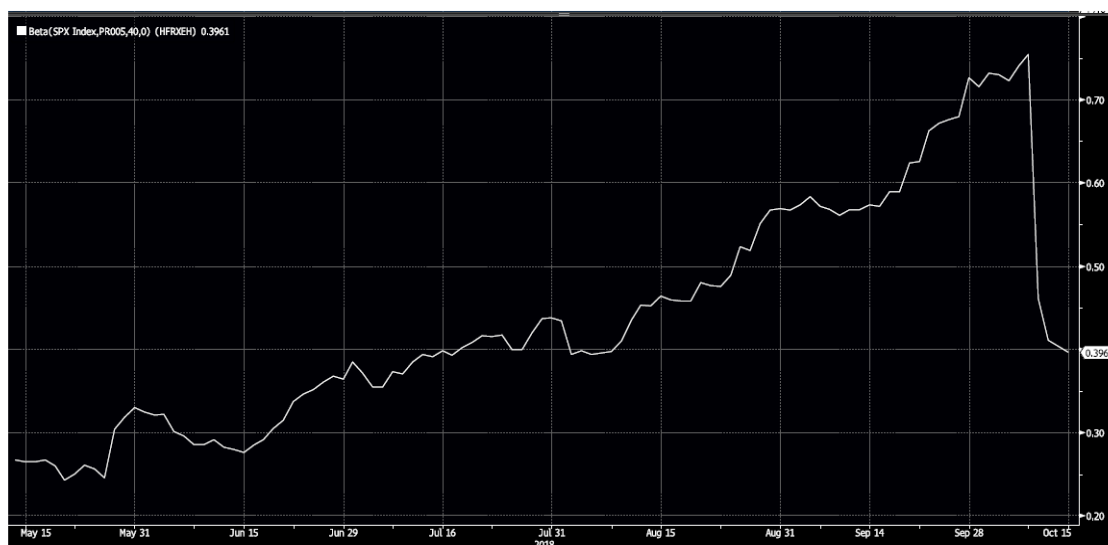
So, this first bout of selling abated, and gave way to a brief, albeit sharp rally triggered by bargain hunting and the deeply rooted habit now of "Buy the dip". This "dead cat bounce" took the SP500 from a low of 2710 (11th of Oct) to a high of 2815 on the 17th of Oct. That is slightly less than a 4% gain in 4 trading days.

This rally ran out of steam only to be replaced by hedge fund de-risking and therefore triggering a rout in Tech stocks. The global HF equity beta dropped sharply from its top reached on October the 9th in what was one of the largest and fastest declines on record.

Here is the picture:

HFRXEH Index (Hedge Fund Research HFRX Equity Hedge Index)

Bloomberg



Source: Bloomberg

- From 18th October to 29th October: things turn ugly.

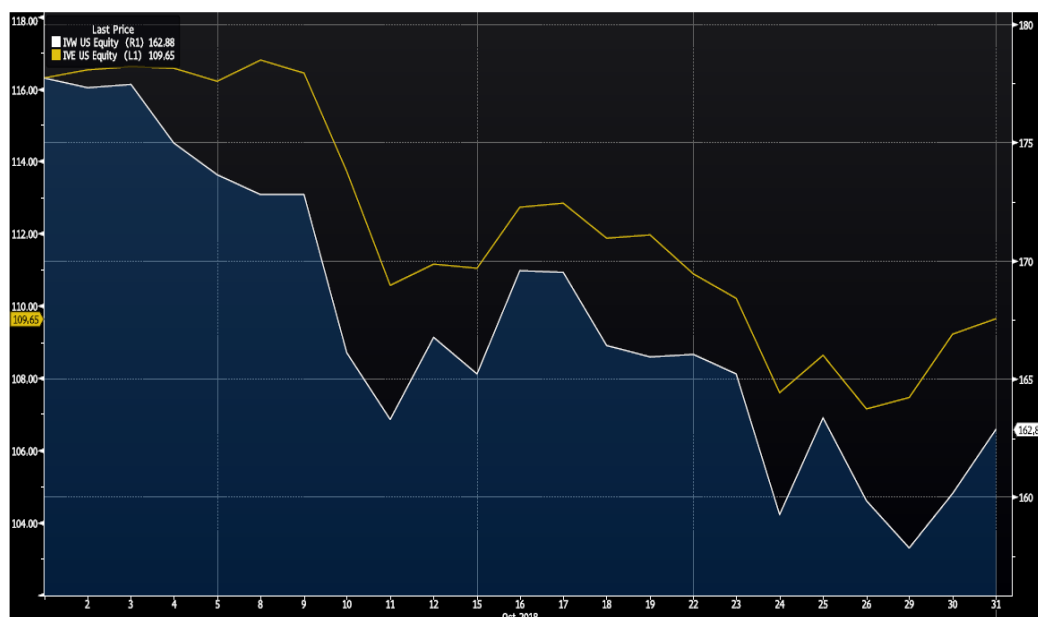
This period saw the conjunction of two waves of selling pressure. One due to the HF de-risking and the other due to the rear guard of the systematic funds, the volatility-targeting funds (of which you will find a definition at the end) starting to adjust their positions. Let's consider the HF massive de-risking actions first.

"Red October" was also characterized by wild swings for consensus hedge fund longs in Growth and Tech stocks, i.e the most overcrowded trades on the planet.

The Long/Short crowd's exposure started to plunge in the first couple of weeks of October as a steepening in the US Treasury Yield curve catalyzed a rotation from Growth into Value as shown by the chart below which compares the prices of the main US stocks Value ETF (yellow line) with the main Growth ETF (white line).

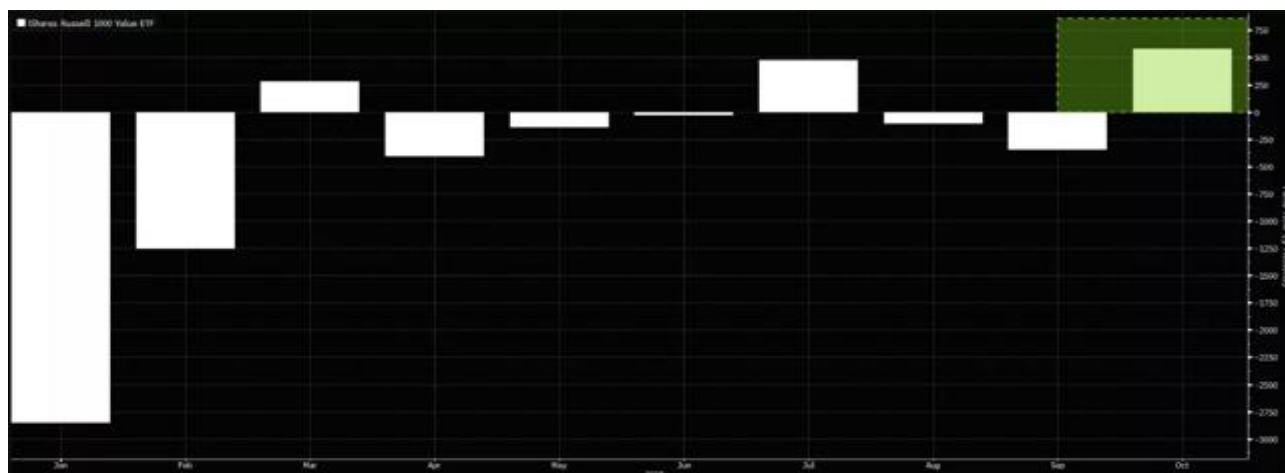
IVW US Equity (iShares S&P 500 Growth ETF)
IVE US Equity (iShares S&P 500 Value ETF)

Bloomberg



Source: Bloomberg

In a testament to the rotation, the iShares Russell 1000 Value ETF saw the largest monthly inflow of the year in October.



Source: Bloomberg

That ETF outperformed its Growth counterpart, the iShares Russell 1000 Growth ETF, by the widest monthly margin since January 2008 last month.



Source: The Heisenberg

Generally speaking, that kind of thing is bad news for hedge funds. But in 2018 with virtually ALL of them carrying massive long positions in Growth stocks (particularly Technology) the bloodbath became an almost certainty. And so from the 18th to Friday the 26th, the main Growth ETF, the iShares SP500 Growth ETF, got consistently hammered as shown in the next chart.

IVW US Equity (iShares S&P 500 Growth ETF)

Bloomberg



Source: Bloomberg

On Monday 29th October, things went from bad to worse following another negative tariff headlines. Specifically, Monday was the fifth worst one-day drawdown for the Long/Short crowd of the year, according to Nomura's analyst Charlie McElligott.

This Monday also proved to be the day of the largest underperformance in the top 10 'most crowded' longs vs the SP500 since 2010 on forced-deleveraging. Longs which were pretty much all in the technology or the semi-conductors sectors obviously. And somewhat surprisingly this relentless and massive de-risking and de-leveraging led to both the gross and the net exposure of HF to very low levels. In short, they were barely IN the market when the bounce started on Tuesday the 30th

And finally let us now consider the last piece of the jigsaw: the volatility targeting strategies.

The substantial spike in equity volatility which occurred in the first 11 days of October likely drove further systematic selling from Volatility targeting Funds. Barclays estimates that the AUM in the Volatility control/Targeting strategies is ~\$355Bn. These funds decrease/increase their overall leverage to maintain fixed portfolio volatility.

Since both the implied and realized volatility increases during market declines, these funds are by construction forced to sell risky assets to stick to their volatility target. This, in turn, exacerbates the selloff. According to JPMorgan analyst M Kolanovic, volatility targeting funds have likely been selling over the period from the 15th to the 26th of October depending on the model used. And Barclays analysts think that the systematic selling from these funds to reduce allocation to equities amounted to ~\$130Bn over the second fortnight of October.

- And a nice rally to finish the month.

As the financial blog The Heisenberg put it: "Well, when it rains it pours, because on Tuesday the 30th and Wednesday the 31st U.S. stocks staged their best two-day run since February."

The CTA and Trend followers were ready to re-risk following the October selloff and on top of that, macro funds were sitting on some dry powder after going into last month on the right side of the trade. And so, CTAs jumped on the move higher, with Nomura's Trend CTA model showing S&P positioning rising to +60% Long by Thursday from just +31% Long two days previously. As for macro funds, Nomura analyst C McElligott wrote that "the surge higher for equities developed after the macro crowd took profits on downside hedges which meant yards of equities delta to buy over 48 hours."

Here is a chart of the S&P futures from the Monday lows through the Friday highs:



Source: The Heisenberg

That, clearly, was an absolute disaster for the Long/Short hedge funds. They were pretty much the only notable sellers on Monday 29th! As we say in the financial jargon, they literally “low-ticked” their exposure! And, as often, at the worst possible time.

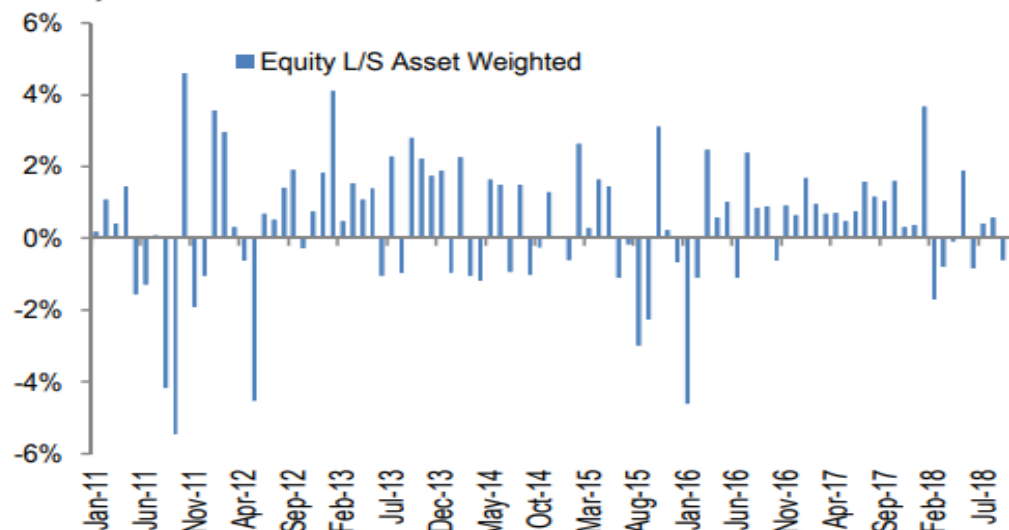
- Conclusion

Overall, hedge funds losses were nearly 3% in October, which was the steepest decline since May 2010. And as we have seen above, the Long/Short funds suffered particularly badly.

In a note released on Friday the 9th of November, JPM analyst Panigirtzoglou sums things up for the Equities HF: “The HFRI Asset weighted Equity Hedge Index, mainly the L/S equities funds, lost more than 4% in October, the worst monthly performance since January 2016”

Here is a graph provided by JPM:

Figure 2: HFRI Asset Weighted Equity Hedge Index
Monthly returns in %. Last obs is Oct'18.



Source: HFRI, Bloomberg, J.P. Morgan.

Source: JP Morgan

As we have shown in this article, the fierce October selloff was not only coming from the CTAs or the systematic crowd. It was much more widespread and diverse than that, and for many of these funds it was amplified by the massive rotation from Growth to Value which accompanied it. This significant correction certainly left systematic strategies near the bottom of their exposure – according to JPM: “volatility targeting strategies’ equity holdings are similar to February lows, and many CTAs are outright short or out of equities”.

The main conclusion we can draw from all that is that October's selloff was actually more "fundamental" in nature than February's which was primarily quant-based.

The point is, systematic funds were not the only sellers in October, and they certainly did not profit from the selloff! They actually suffered a lot and generally exhibited poor performances. The Risk Parity funds experienced in October the second occurrence of a very rare and unfavorable event: the conjunction of significant selloffs on BOTH Equities indices AND Treasuries, with the Long T-Bonds down 2.9% and the SP500 down 6.9%. The last time something similar happened was 20 years ago in Sept 1998 (LTCM....)!

But remember, if you want to flag systematic deleveraging on the way down and blame them for any correction, you also need to account for its impact on the way back up and give them a partial credit when the markets rise.

Definitions and references

Risk parity

Risk parity is a quantitative style of portfolio asset allocation that adjusts the proportion of different asset classes in the portfolio based on their riskiness, usually defined by volatility, and the investor's risk appetite.

The aim of risk parity funds is to achieve better diversification than traditional 60/40 allocation strategies, by earning the best return for the given volatility and riskiness of fixed income, equities, currency and commodities securities. If stocks become more volatile relative to other assets such as bonds, the weighting to stocks in the portfolio will be reduced. If they become less, volatile the weighting increases, and so on.

An investor with a larger appetite for risk will most likely have a risk parity portfolio that is more weighted towards stocks, whereas an investor with a smaller risk appetite will be more heavily weighted towards capital-preserving assets like bonds.

Risk parity is an advanced portfolio technique that typically has been the domain of active managers and hedge funds although many passive indexes also take a similar approach to allocation. Bridgewater Associates pioneered the risk parity approach to investing in 1996 with the launch of the All Weather hedge fund.

Volatility targeting Funds

Managed volatility strategies [*strategies based on volatility targeting*] adjust exposures in inverse relation to a risk estimate, aiming to stabilize realized portfolio volatility through time.

“At the heart of *volatility targeting* lies a well-established and tantalizingly robust feature of financial markets: risk (as measured by volatility) is a time-variant feature of the return distribution, and unlike the expected return, a meaningful share of its time-variation is forecastable by surprisingly simple extrapolation of recently experienced volatility.”

“The most immediate application of this ability to forecast risk is to stabilize realized portfolio volatility. Portfolio volatility stabilization can be accomplished by frequently recalibrating equity market exposure such that the expected portfolio volatility under the forecast aims at a constant target.”