AMAREOS

THE MARKET SENTIMENTALIST: SELECTED RESEARCH

The following publication is a collection of Market Insights published over the past three years.

The research pieces, presented in chronological order, have been chosen on the basis that they outline the theoretical foundations and real-world applications of sentiment analytics to illustrate how they can be incorporated as an additional complementary input into an investment/research process.

The crowd-sourced sentiment indicators contained in this publication are one of the new alt-data sources available to finance professionals. They are derived from algorithmic processing of over a million mainstream and social media posts every day on over 6,000 underlying assets and macroeconomic topics. It allows investors to integrate emotional and psychological factors, long-known to influence financial decision, but which have been historically difficult to capture in a systematic manner.

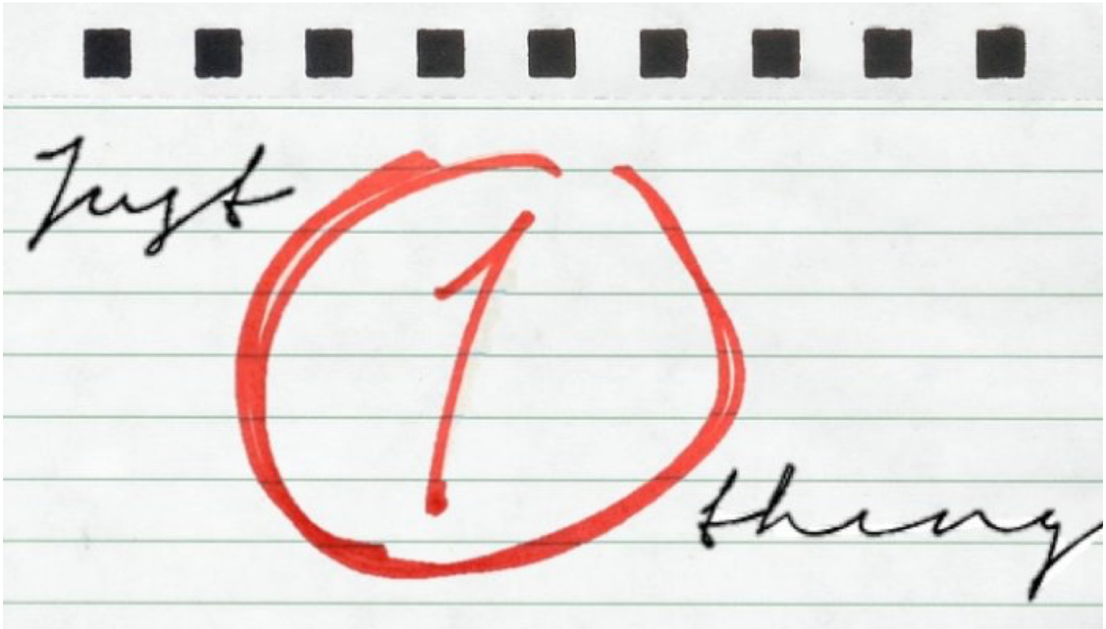
For those interested in finding out more information about the crowd-sourced sentiment indicators and their investment applications please contact us via: info@amareos.com

Kind regards,

Ryan Shea (Partner and Head of Research)

THE MARKET SENTIMENTALIST: JUST ONE THING

WEDNESDAY, JANUARY 20, 2016



Howard Marks is a perceptive market observer and his numerous memos to Oaktree clients over the years are a treasure trove of market insights. His latest musings focus on the important role psychology plays in driving investor behaviour and the need to acknowledge and understand this in order to achieve investment success; something that we fully subscribe to at Amareos[1].

In fact, after succinctly outlining his thoughts in relation to investor psychology and how it has impacted global financial markets over recent years, he states that:

"If I could know only one thing about an investment I'm contemplating, it might be how much optimism is embodied in the price."

Howard Marks, *"On the Couch",* Memo to Oaktree clients, January 14, 2016[2]

Given the turmoil that has impacted global asset markets over the past couple of weeks (it has been widely reported that US equity markets have witnessed the worst start to a year on record with the S&P500 having shed more around USD 1.4tr in value[3]), Marks concludes that investor sentiment has deflated and asset prices marked down by a sufficient degree that it is appropriate to modify the company's investment mantra to *"move forward, with a little less caution"[4].*

This may not be the snappiest, or most media-friendly, description of a company's investment approach but it is sensible; it acknowledges a more constructive assessment while allowing for the fact that asset markets may have not yet bottomed[5].

The good news for the rest of us not endowed with Marks's ability to read the market tea-leaves is that we can illustrate this point quantitatively via the sentiment indicators published on the Amareos website. The chart below shows the US equity current sentiment indicator (the orange line) versus the S&P 500 price index (the black line).

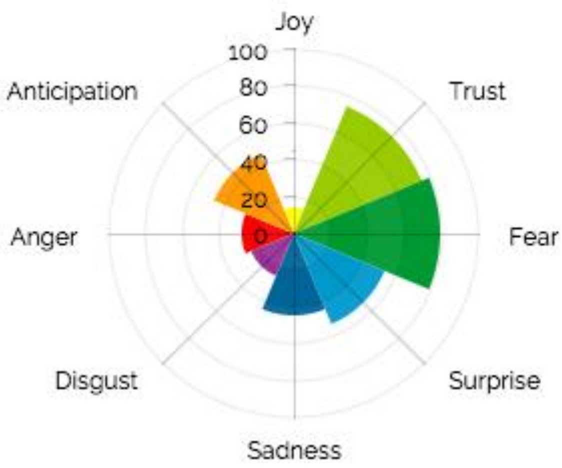
Exhibit 1: Crowd-Sourced Sentiment Vs. Price – S&P500

Source: www.amareos.com

What is notable is that over the past 18 months there have been three significant stock market corrections and in each case US equity market sentiment ratcheted down (in advance of the price decline in the first two episodes and contemporaneously in the most recent) to stand at historically low levels[6].

Yet, while US equity market sentiment is weak on aggregate the associated emotional polar map (see chart below) shows the predominant emotions at present to be: Fear, Trust and Surprise. Compare this with the stylized cycle of investor psychology where that the predominant emotions at the bottom of an asset price cycle are: Sadness, Disgust and Anger (the lower left quadrant of the emotional polar map).

Exhibit 2: Emotions Polar Map – US Equities



Source: www.amareos.com

In light of this divergence, one cannot be confident enough to rule out further near-term US equity market weakness including a retest of the two previous correction lows. In fact, for short-term orientated investors these levels are a rather obvious focal point, especially because if breached many will expect there to be a demand “air pocket” below for technical reasons.

However, for medium to long-term investors what is of greater importance than the short-term market direction is determining whether equity market weakness is attributable to deteriorating underlying fundamentals or simply a reflection of depressed sentiment. This distinction matters because if it is the latter, additional weakness on Wall Street will simply be viewed as an opportunity to buy equities - in anticipation of higher future prices when investors begin to realize that things are not as dire as feared – but with an even greater margin of safety[7].

As just mentioned we know that equity market sentiment in the US is low, so the question therefore is whether underlying US fundamentals are deteriorating. If one is to believe the media the latest reason for concern about economic growth comes from the continued fall in the price of crude oil, which this week fell below USD 30 p/b on news that with the lifting of economic sanctions Iran is slated to increase exports by 500,000 barrels per day (we covered crude oil in last week's post). This is a rather bizarre conclusion in our opinion and says a great deal about the inability of commentators to distinguish between demand and supply shocks[8].

When the crude oil price fall reflects a negative demand shock it is perfectly reasonable to expect equity market weakness. However, when the price decline comes in response to a positive supply shock, which is what the Iranian decision constitutes, this should have the opposite effect, unless one assumes that this price decline will trigger widespread bankruptcies in the oil sector with contagion spreading to the rest of the economy. This is because its effect is analogous to a stimulative tax cut for oil consuming nations [9] [10].

Such twisting of economic logic in order to fit a market narrative is often another sign that sentiment is predominant – in the case of the dotcom boom it was positive, this time it is negative – something worth bearing in mind when you hear pundits state that we are on the cusp of replaying the Great Recession, or worse[11].

Amareos sentiment analytics incorporate Thomson Reuters MarketPsych indices.

FOOTNOTES:

[1] This will hardly constitute a surprise to our subscribers.

[2] See: https://www.oaktreecapital.com/docs/default-source/memos/on-the-couch.pdf?sfvrsn=4

[3] See: http://www.ft.com/cms/s/0/9e642f0a-bdc4-11e5-9fdb-87b8d15baec2.html#axzz3xh0AEJu1

[4] In the memo Marks states that since the middle of 2011 the investment mantra was *"move forward, but with caution"*.

[5] Buying at the market bottom is, in our experience, simply a reflection of pure luck rather than sound judgement and anyone who thinks otherwise is delusional.

[6] The data are presented as Z scores such that the current reading implies sentiment is approximately one standard deviation below its long-run average.

[7] This concept is associated with Benjamin Graham as we outlined in a previous blog "Value And Risk", 17 November 2015. See: http://www.blackswaneconomics.com/in-the-news/market-sentimentalist-value-risk-1251.html#more-1251

[8] Not to mention the difference between causation and correlation.

[9] At the global level it also has a net positive effect because the boost to oil consuming nations tends to exceed the negative growth impact upon oil producing nations.

[10] Obviously, as global economic growth strengthens - absent a further negative supply shock – crude oil demand eventually picks up helping to bolster its future price.

[11] For the avoidance of doubt, it is our long-held view that the global economy is not in great shape structurally. Indeed, on some grounds it can be considered worse than preceded the Great Depression (for example, total global debt -public plus private –is considerably higher even when normalized by nominal GDP). However, as one asset allocator told us back in early 2009 with prescient timing, *"I'm so bearish, I'm bullish!"* by which he meant that the situation eventually forces an aggressive policy response that would prove a powerful driver for asset markets. As we have detailed in earlier BSEC research notes – available to Amareos subscribers on request - this assessment is even more valid today.

THE MARKET SENTIMENTALIST: OUTSMARTING THE CROWD

THURSDAY, JULY 28, 2016

Who is smarter – the individual or the crowd? This is a fundamental question in finance because free market forces are nothing if not the aggregation of the financial interactions of the more than 7 billion people presently inhabiting the planet and it is this "crowd" that individual investors are seeking to outsmart with every trade or investment.

When asked to choose between the two, in keeping with the old adage that "two heads are better than one" most people pick the crowd[1]. In support of this notion James Surowiecki's 2004 book *The Wisdom of Crowds*[2] used the famous (at least in some circles) anecdote where people attending a country fair were asked to guess the weight of an ox. It turned out that the simple average of all the individual estimates generated a far superior prediction relative to almost all the individuals who participated in the competition– a result that has been replicated on subsequent occasions[3].

The underlying rationale is that each individual is likely to make an estimation error: some will overestimate the animal's weight while others will underestimate it. But, when aggregated over a large enough sample, these errors cancel out such that the crowd estimate constitutes the most accurate prediction, i.e. the crowd is smartest.

However, the correct answer to the question is that it depends.

Although Surowiecki's book contains many examples highlighting the smartness of the crowd over the individual, he acknowledges this predictive outperformance – the ability to tap the collective wisdom if you like - requires the following four conditions be met:

- Decentralization
- Aggregation
- Independence
- Cognitive diversity

Failure to satisfy these four criteria jeopardises the crowd's ability to generate the best estimate or devise the best solution to a problem; often resulting in spectacular fails. As evidenced by numerous asset price bubbles observed over the centuries[4], a great deal of these fails have occurred in finance, so it is hard not to concur with Surowiecki's conclusion that financial markets are not well suited to exploiting the wisdom of crowds.

But why is that the case?

Going down the list, it is readily apparent that finance satisfies the first two conditions with relative ease: it is a highly globalized industry and the price discovery mechanism itself constitutes the aggregation process. The problem arises with the last two conditions.

Independence and cognitive diversity requires that for the crowd to be smarter not only are the opinions held by individuals in the crowd unaffected by the opinions held by those around them, but that there is a high degree of heterogeneity in how information is processed such that whatever private information is at an investor's disposal (even if it subsequently proves to be faulty) gets incorporated into the market price[5].

In theory there is scope to increase the smartness of a financial crowd by encouraging greater cognitive diversity amongst investors. That said, our sense (one shared by many others) is that we are heading in the wrong direction given the increasing standardization of financial education and the focus on shorter and shorter investment time horizons, both of which encourage more, not less, investor homogeneity.

The insurmountable problem, however, is that it is simply impossible for investors to be fully independent of each other for reasons we have outlined in previous blog posts. In the ox anecdote, for example, the answer or outcome is not influenced by the guesses of the individual members of the crowd – the ox will weigh 1,198lb regardless of what the crowd thinks. The same does not hold true in finance because investment success depends not only upon the outcome, but on how much it differs from what was originally expected or anticipated[6]. That is to say, investors must necessarily take on board the opinions of other investors in order to be successful[7].

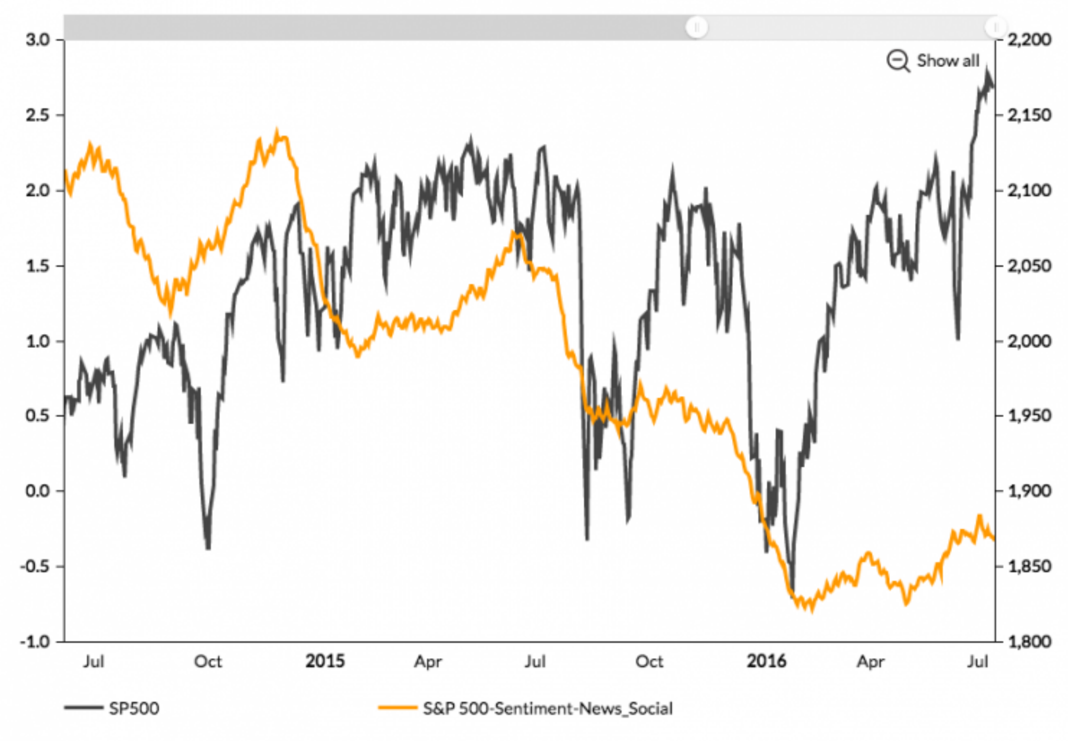
The invalidation of the conditions required for crowds to outperform individuals in finance should be welcomed by investors because it allows for the possibility to outperform the market, even in the long-run[8]. The question then becomes how best to exploit the failure of crowds in finance.

One approach is to try and make crowds smarter by identifying key influencers, or individuals with superior track records, and to focus attention on them[9]. The premise being that such individuals have more valuable insights – for example, Albert Einstein and Stephen Hawking without doubt were/are more knowledgeable about theoretical physics than a random collection of people plucked from a shopping mall and hence should be better placed to give superior answers on the subject. This certainly an interesting approach but it requires these individuals be correctly identified - not so easy especially as expertise can be quite topic specific - and remain at the top of their game; both potentially big asks.

A more robust approach, in our view, is simply to accept that crowd failures in finance happen and to seek to exploit those occasions when the probability of such failure is high. To identify potential opportunities we look for occasions when the heterogeneity of investor views is low, which is another way of saying that the correlation of views is high. This is something that can be ascertained from the sentiment indicators we track at Amareos.

By way of an example consider the following exhibit, which plots crowd sentiment towards the S&P500 index over the past two years. During the sharp sell-off witnessed at the start of the year sentiment towards US equities fell to its lowest level in the post Great Recession period. Investors were all strongly in agreement that the outlook was bearish; a distinct lack of diversity, which flagged a potential crowd fail and hence by extension the prospect of a market rebound[10]. Interestingly, despite the strength of the subsequent rally, crowd sentiment towards US stocks still remains below its long-run average; an interesting observation that we discussed in last week's blog post[11].

Exhibit 1: S&P500 – Price vs, Sentiment



Source: www.amareos.com

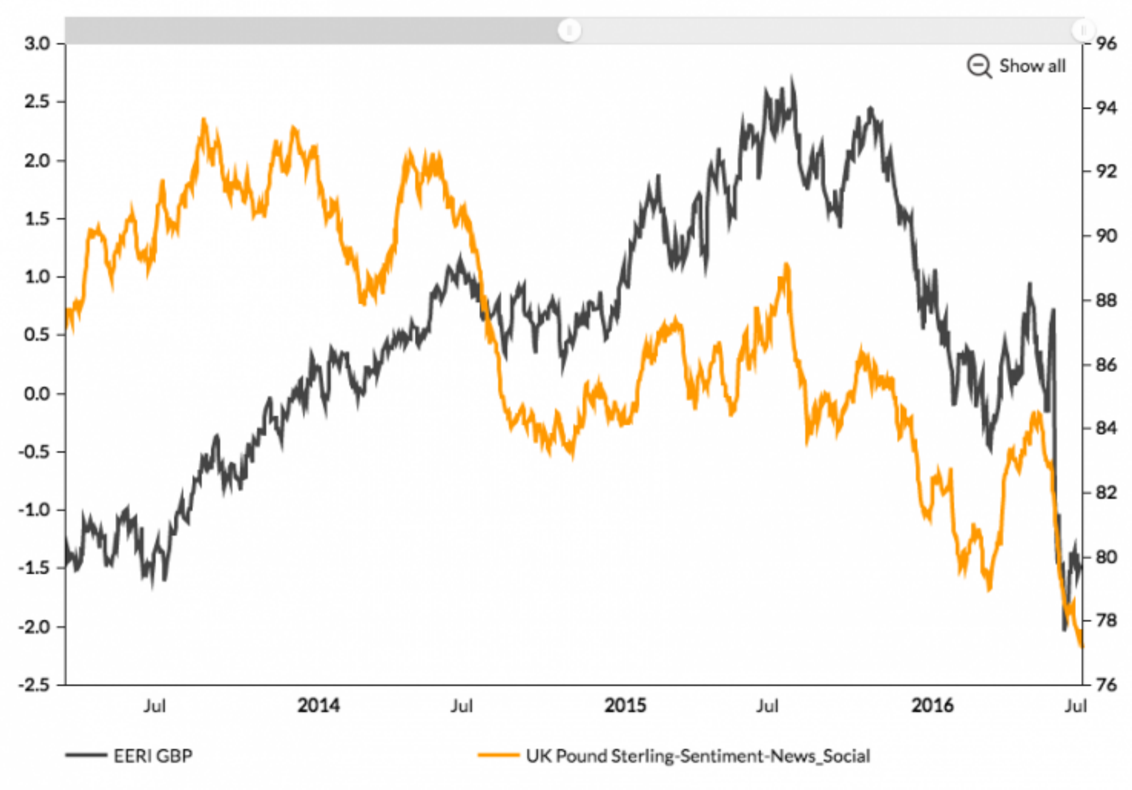
Similarly, last December we observed that sentiment towards Brazil plummeted to all-time lows as the country was engulfed in a political scandal that has resulted in President Dilma facing trial for impeachment[12]. Despite the continuation of negative news flow, Brazilian equity markets are up more than 30% year-to-date: one of the strongest gainers in 2016. Again highlighting that when sentiment is strongly skewed – in this example also negatively – it provides a very useful contrarian market signal.

Exhibit 2: IBOV – Price vs. Sentiment

Source: www.amareos.com

Looking at the sentiment indicators today, the financial asset with one of the most extreme readings is GBP. Like its value on the foreign exchange market, crowd sentiment towards the British currency has slumped in the wake of the Brexit vote (see exhibit below)[13].

Exhibit 3: Sterling: Price vs. Sentiment



Source: www.amareos.com

Only by knowing what the crowd is thinking in relation to a given asset, and hence being able to monitor the type of conditions where failure is likely to occur, can investors hope to outsmart the crowd - a necessary condition for alpha-generation[14]. Indeed, in our experience the most profitable trades turned out to be the ones with the least initial buy-in (low popularity). Right now, GBP longs fit right in that camp.

Amareos sentiment analytics incorporate Thomson Reuters MarketPsych indices.

FOOTNOTES:

[1] Excluding themselves as the individual, of course, to remove the overconfidence bias well-documented in behavioural finance.

[2] See: https://www.amazon.co.uk/Wisdom-Crowds-Many-Smarter-Than/dp/0349116059?ie=UTF8&ref_=asap_bc

[3] Guessing the number of sweets in a jar is sometimes used instead of the ox example but the implication is the same.

[4] See: Edward Chancellor's excellent book *Devil Take The Hindmost* for a comprehensive review of asset price bubbles see: https://www.amazon.co.uk/Devil-Take-Hindmost-Financial-Speculation/dp/0452281806

[5] The wisdom of crowds theory and the efficient market hypothesis, which states that asset markets incorporate all relevant (including private) information, share some degree of connectedness as they both generate the same conclusion; namely, the impossibility of individuals beating the market over the long-run.

[6] See: https://amareos.com/blog/reality-minus-expectation/

[7] This was the very point Keynes was making with his famous beauty contest. He pointed out that success required competition entrants not to choose the contestant they considered most likely to win, but to choose the one who they considered others would consider as most likely to win – something he labelled second-degree thinking. Keynes considered the possibility that even second-degree thinking would prove inadequate, as there would seem to be an advantage in engaging in even higher order thinking to outsmart the second-degree thinkers; a process that can be extended ad infinitum resulting in indeterminacy. Fortunately, it transpires that second-degree thinking is more than sufficient because there is evidence from behavioural finance that most investors engage in 1.3-degrees of thinking, meaning that knowing how others (the crowd) are thinking is sufficient information to give investors an edge. The experiment that gave rise to this result can be found in Montier (2007) *Behavioural Finance: A Practitioners Guide to Applying Behavioural Finance* - see: https://www.amazon.com/Behavioural-Investing-Practitioners-Applying-Finance/dp/0470516704

[8] Conversely it is a bad news for policymakers because it implies that it is impossible to avoid the periodic booms and busts witnessed in financial markets as their underlying source is deeply woven into the fabric of the investment process; they simply cannot be regulated out of existence.

[9] As detailed in the following essay these approaches are seeking to exploit "metaknowledge" - see: https://aeon.co/essays/a-mathematical-bs-detector-can-boost-the-wisdom-of-crowds

[10] To avoid suspicion of only being wise after the fact we articulated this view in a blog post published on January 20 – see: https://amareos.com/blog/just-one-thing-you-need-to-know/

[11] See: https://amareos.com/blog/crossing-the-rubicon/

[12] Again, we discussed this in a blog post at the time – see: https://amareos.com/blog/time-to-buy-beleaguered-brazil/

[13] The price shown is the BoE calculated nominal trade-weighted exchange rate not a traded rate.

[14] It is also is important for risk mitigation because understanding the crowd not helps with market timing but also position sizing – a much overlooked, but critical, element in any investment process.

THE MARKET SENTIMENTALIST:
PAIN TRADES

THURSDAY, SEPTEMBER 8, 2016

Recently we outlined why understanding how the rest of the world thinks about a potential investment is a key element of any robust investment process. After all, how can one hope to beat the crowd – the goal of alpha-generation - if one has no idea what the crowd view is?

Moreover, we specified when the odds of beating the crowd are highest; namely, when there is a strong sentiment skew because this is when the conditions required for the prediction outperformance of “the many over the few” are most likely to be invalidated.

In essence, we are seeking to identify pain trades.

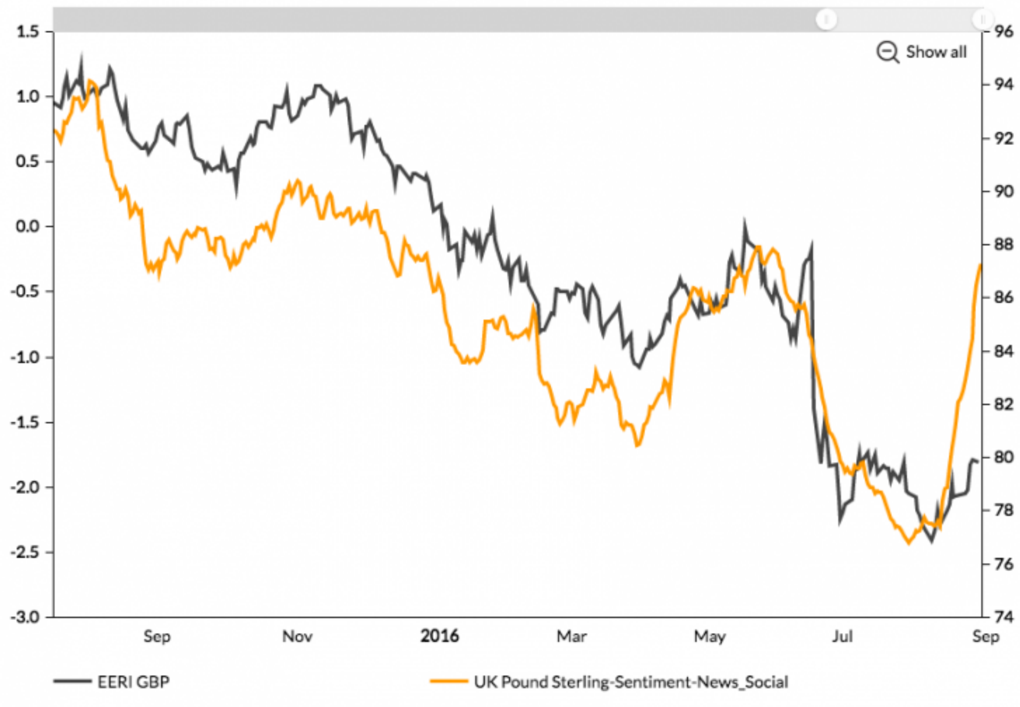
What do we mean by pain trades? Investments where investors' collective emotional attachment is unusually high, such that a market price move in the opposite direction causes considerable mental anguish (pain). And where, as a result, eventual capitulation is likely to be a powerful driver pushing asset prices even further away from the prevailing crowd view.

This negative mental response occurs because, as psychologists have long observed, we humans are inherently wired to try and make sense of the world around us (even if, in many cases, it is spurious) and when incoming information jars with our mental model we feel uncomfortable. In fact, this is one of the reasons for the existence of confirmation bias, where investors only seek out, or focus on, information that validates their prior beliefs or, in investment terms, existing positions[1].

Turning theory into practice, we noted in the aforementioned comment[2] that,

"in our experience the most profitable trades turned out to be the ones with the least initial buy-in (low popularity). Right now, GBP longs fit right in that camp."

Exhibit 1: Crowd-sourced Sentiment vs. Trade-weighted GBP



Source: www.amareos.com

As the exhibit above confirms in the few weeks since we wrote this there has been a significant shift in crowd-sourced sentiment towards GBP and the UK economy more generally, (the two obviously being closely intertwined) as immediate post-Brexit fears have subsided.

In the first few weeks after the Brexit vote, there was a scarcity of “hard” macro data by which investors could assess the damage inflicted on the UK economy by the Brexit vote. Indeed, the most-timely data on economic activity in the UK – and for most major economies – is the monthly purchasing managers index (PMI) business surveys. In early August they were at levels consistent with imminent recession.

On August 1, the July manufacturing PMI survey was published and it showed a drop of almost a point relative to the already weak flash estimate published a month after the EU referendum (compared with the June reading the final July PMI at 48.2 was 3.9 points lower – a big m/m drop). While the final services PMI, published two days later, came out in line with the flash estimate at 47.4 it was 4.9 points lower than the June reading (an even larger m/m drop). In other words, the first “hard” data pertaining to the post-Brexit period[3] was consistent with pre-vote fears. It was not until the release of much better-than-expected July UK retail sales data on August 18 that investors began to seriously question whether the British economy had been so badly affected.

Compare this timeline with the behaviour of crowd-sourced GBP sentiment included in the above chart. The low in sentiment occurred on August 5, when the sharp downtrend observed since the June 23 vote shock began to reverse. Similarly, UK economic growth sentiment bottomed a couple of days later[4] – just days after the July PMIs were published and well before the release of the strong July retail sales report[5].

Hence, the UK sentiment data we track at Amareos provided investors with an extremely useful early warning signal that the economic hit to the British economy from Brexit was not as severe as feared.

Even more importantly, what the chart also illustrates is that when the better “hard” economic data were subsequently released[6], because sentiment was still weak (albeit improving) market conditions were ripe for a solid rebound in GBP. In fact, over the past few weeks the UK currency has rallied more than 5% versus the USD and 3% in trade-weighted terms.

This is important as we are often asked if the sentiment data we track always leads market prices: be they currencies, as in this case, equity indices, single stocks or commodities.

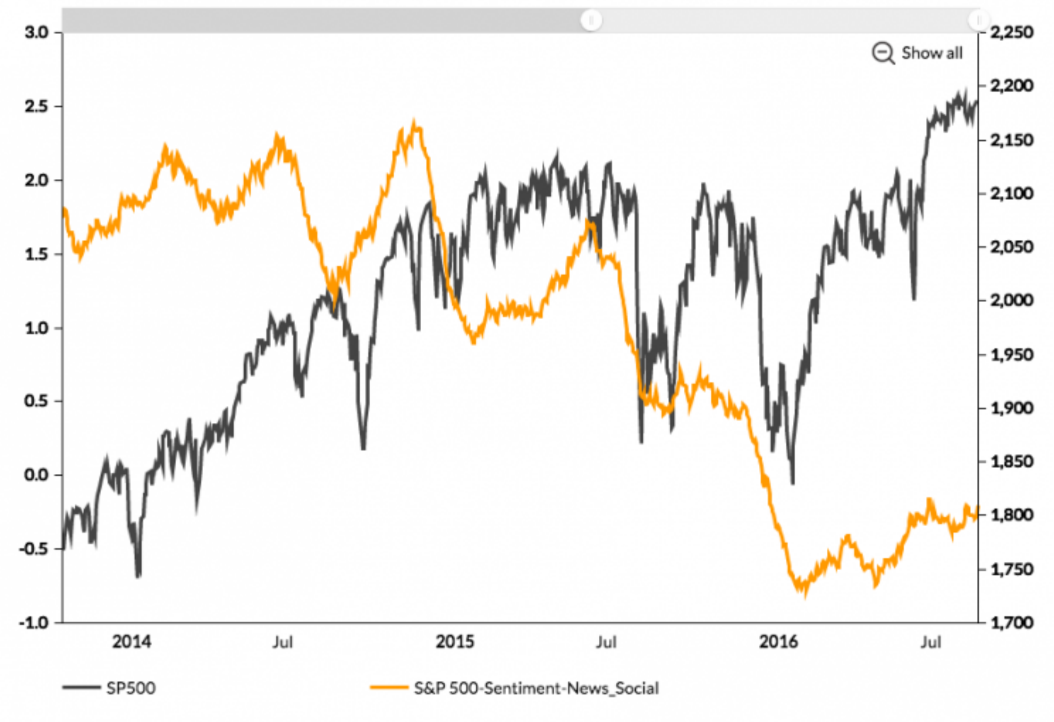
As we have shown in an earlier comment[7], examining equity sentiment data over the past decade we found a positive correlation between short-term future equity price trends and sentiment and negative correlations between long-term future equity price trends and sentiment. This is consistent with the standard hypothesis that in periods of high optimism/pessimism equities become over/undervalued, a fundamental mis-pricing which is corrected over time ie. there is a positive relationship with price, but a negative relationship with future returns.

However, there is no investing holy grail, which is what sentiment data would constitute if it consistently led market prices. That said, shifting lead-lags between sentiment and market prices is much less of an issue for investors than it may first appear. When, as in the latest GBP example, sentiment has fallen to historically low levels (indicative of extreme pessimism) a countertrend price rally triggered for whatever reason[8] constitutes a pain trade. This suggests a higher probability of capitulation as investors are forced to revise their mental models. Hence, on those occasions when price leads sentiment, knowing the skew of crowd sentiment is still informative about an asset's expected future returns and therefore a useful input in an investment/research process.

Scanning across the 9,000+ assets for which we have daily sentiment data, one standout at present is the US equity market. Not because this is an asset where crowd sentiment is most skewed (others are higher/lower[9]) but because of the importance of the asset class to the global economy and in light of the closeness of the US Presidential race which has only 60 days left to run.

As the exhibit below shows, the 20% rebound in the S&P500 from the February lows has been very unloved by the crowd; sentiment towards the stock index is still in negative territory unlike the first time the S&P500 breached the 2,000 (mid-2014) when sentiment was elevated.

Exhibit 2: Crowd-sourced US Equity Sentiment vs. SP500



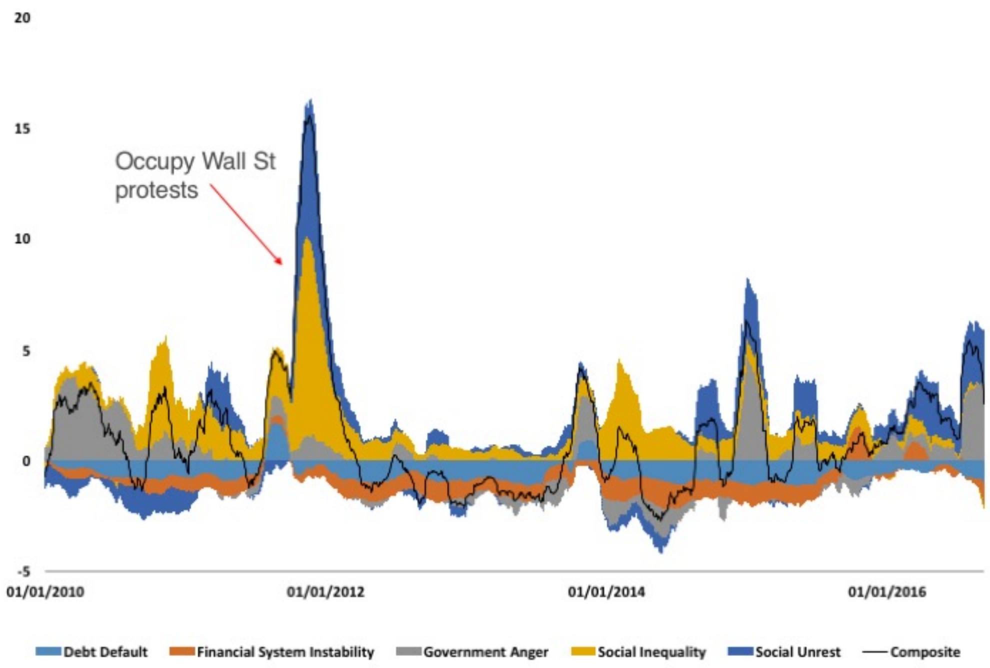
Source: www.amareos.com

Many factors likely explain this divergence. Two popular candidates are the stock market's perceived reliance[10] on an accommodative Fed[11] to sustain the uptrend and uncertainty over the outcome of the Presidential election, particularly given many commentators view a Trump victory to be an even bigger downside macro risk than Brexit was ever considered to be; an outcome that cannot be ruled out given the closeness of the opinion polls.

As shown in the exhibit below, the Amareos Political Risk Indicator (PRI) remains relatively moderate. However, recent shifts in the five sentiment indicators[12] upon which the PRI is based, suggests a tilt in favour of Trump.

Of those sentiments, the rise in government anger is particularly pertinent. By virtue of her position as Secretary of State in the first Obama administration, not to mention her political heritage, Hillary Clinton is widely seen as an establishment figure. By contrast, Trump, is viewed as anti-establishment despite being a billionaire (a highly unusual mix). Given this, the shift in social mood to one more negative towards the government, favours Trump over Clinton.

Exhibit 3: Sentiment-based Political Risk Indicator – US



Source: www.amareos.com

Similarly, lower public fears over debt default and financial instability also favour of Trump. Earlier this year the self-proclaimed "King of Debt" made some – let's be polite – unclear statements regards US debt policy, leading some to conclude that Trump favoured defaulting on existing government liabilities.

Even though Trump qualified his comments, by making it clear there is no chance of a US government default as the Fed can always step-in and buy Treasuries with printed money[13], that the sentiment data show a lack of concern amongst the public on this issue (and financial instability) is also a positive development for him[14].

So what about the implications for US equities?

Worries about Trump becoming the 45th US President, not to mention a possible follow-up rate hike to last December's Fed Liftoff, stand to keep equity investors wary over the coming weeks and months. However, that

US stock market sentiment is low indicates that for US equities, it is a continuation of the bull market that constitutes the real pain trade[15].

Amareos sentiment analytics incorporate Thomson Reuters MarketPsych indices.

FOOTNOTES:

[1] Confirmation bias, combined with a deep-rooted herding instinct, are the primary forces that generate extreme sentiment skews. For those who think they are immune to such forces we suggest reading a book deliberately chosen because it has a viewpoint you fundamentally disagree with while waiting at the gate so you are the last one to board a flight. You will be surprised how emotionally uncomfortable this situation makes you feel. Try it, and let us know how you get on! For a recent study on conformation bias as applied to financial markets – see: Cipriano and Gruca (2014) *"The Power of Priors: How Confirmation Bias Impacts Market Prices"* (http://ubplj.org/index.php/jpm/article/view/974)

[2] See: https://amareos.com/blog/outsmarting-the-crowd/

[3] That is to say, data published relating to July onwards.

[4] UK growth sentiment is not shown in the chart but it is available to view on our web portal.

[5] UK real estate, particularly commercial, is also witnessing a very significant sentiment rebound - something we highlighted in an earlier comment see: https://amareos.com/blog/pride-and-prejudice/

[6] The August manufacturing and services PMIs rebounded sharply and by more than expected by economists.

[7] See: https://amareos.com/blog/emotions-and-markets/

[8] Positive macroeconomic news surprises in this example but it could be caused by any number of things; policy announcement, corporate action etc.

[9] Including UK commercial real estate (see footnote 4 above).

[10] Hence, vulnerability.

[11] We touched on this subject in a prior post – see: https://amareos.com/blog/a-more-beta-than-data-dependent-fed/

[11] See: https://amareos.com/blog/crossing-the-rubicon/

[12] Again, we discussed this in a blog post at the time – see: https://amareos.com/blog/time-to-buy-beleaguered-brazil/

[13] The price shown is the BoE calculated nominal trade-weighted exchange rate not a traded rate.

[14] It is also is important for risk mitigation because understanding the crowd not helps with market timing but also position sizing – a much overlooked, but critical, element in any investment process.

THE MARKET SENTIMENTALIST: SHOULDA, COULDA, WOULDA

THURSDAY, MARCH 9, 2017

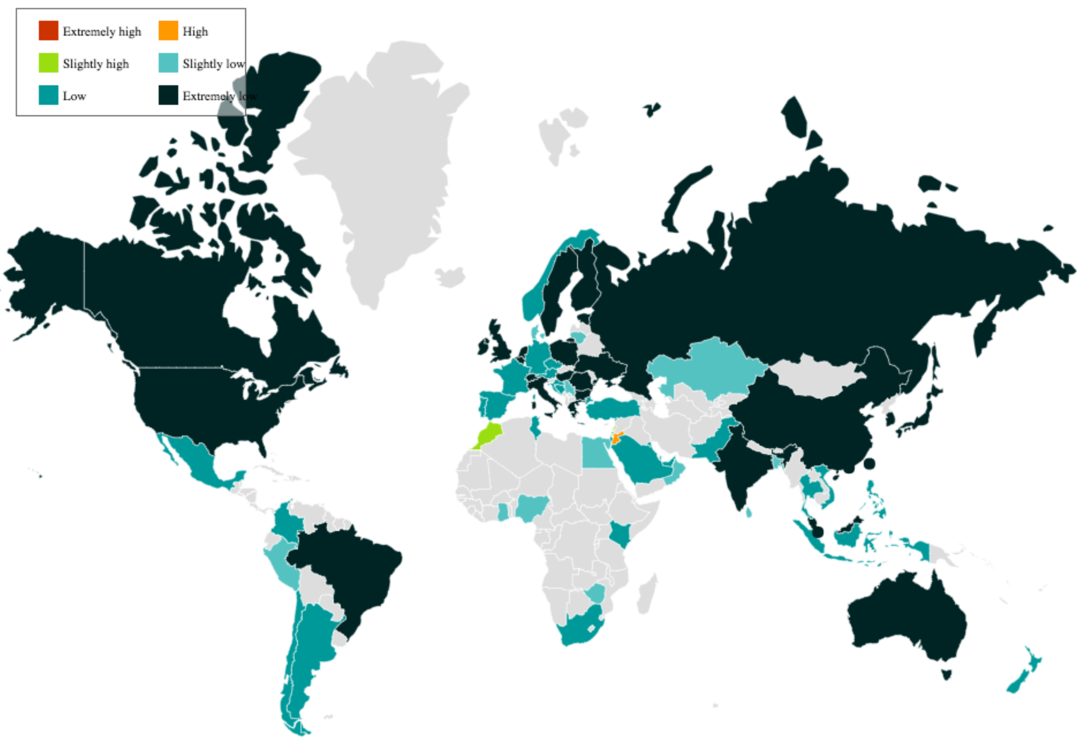
Eight years ago almost to the day the S&P500 hit a low of 666. A number, no doubt, many numerologists, especially those at the wackier end of the spectrum, attach a great deal of significance too (and apparently FT journalists[1]). However, for those of us with less esoteric leanings, the significant of the number is that it marked the bottom of the last major bear market in equities and signalled the beginning of the end of the Great Recession (spooky – just kidding!).

Indeed, just a week or so later (March 15, 2009 to be exact) in a televised interview[2] Bernanke publicly stated that, *"And I think as those green shoots begin to appear in different markets — and as some confidence begins to come back — that will begin the positive dynamic that brings our economy back."*

At the time we were sceptical of his assessment given the still dreadful tone of US economic data releases, which pointed to ongoing contraction albeit at a slightly reduced pace. With the benefit of hindsight, we should have known better.

As any gardener will tell you, in addition to sunlight – which is invariably delivered every single day[3] – for green shoots to appear two additional things are required: "liquidity" and "BS". Via its orthodox and unorthodox monetary policy tools the Fed had already delivered the former, and with this comment Bernanke provided the final - until then missing - ingredient.

Exhibit 1: Economic Growth Sentiment – Global Heat Map (March 2009)



Source: www.amareos.com

Even though Bernanke's comment was largely subjective (the polite term for BS), by virtue of his position they were influential. Moreover, in challenging the prevailing view of the crowd at the time, which was uniformly and profoundly bearish – our global economic growth heat map closely resembled an oil slick (see exhibit above) – it laid the foundations for the equity bull market[4] that is still ongoing. It was, in our lexicon, a great example of crowd fail; possibly the greatest since the bursting of the dotcom bubble[5].

Despite the strong rise in asset markets over the past eight years (the S&P500 is up more than 250% since the March 2009 low), one enduring mystery of the post Great Recession period - one that continues to perplex the economics profession – is the interconnected triad of lacklustre economic growth, the sustained disinflationary undercurrent and, as a consequence, the continued reliance on very accommodative policy settings (most visibly monetary policy)[6].

In a recent interview, Olivier Blanchard –co-author of one of the leading post-grad economics textbooks, former IMF Chief economist and now senior fellow at the Peterson Institute - posits that the tepid nature of the post Great Recession recovery is attributable to persistent weakness in private sector animal spirits. In essence, he proposes a self-fulfilling prophesy where people, worried that the future will be worse, spend less, reducing domestic demand and crimping present economic growth, further damping animal spirits[7].

Such sentiments – no pun intended – sound plausible. They are also very much in keeping with Keynes's original analysis of the Great Depression, where he concluded that depressed animal spirits were one impediment to the economy recovering back towards the full-employment equilibrium, a process that was previously considered to be the natural course of events[8].

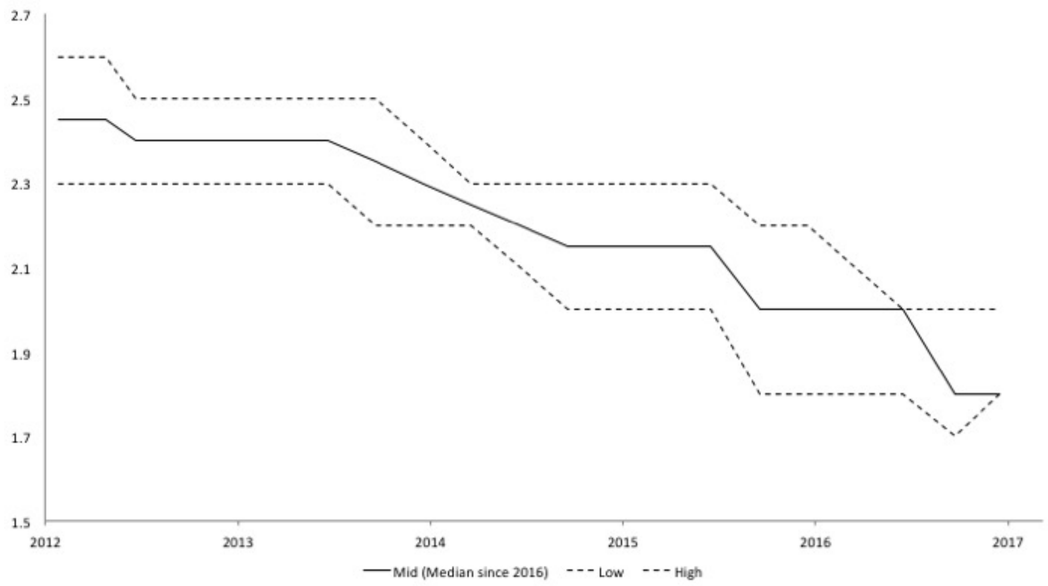
To validate his theory, Blanchard examined the relationship between revisions in forecasts of long-run potential economic growth rates – his proxy for animal spirits – and unexpected decreases in consumption or investment. He found a positive correlation between negative consumption and investment "surprises" and the persistent decline in potential economic growth rates estimates; an outcome consistent with his theory.

Even though this might sound a rather dry and academic exercise, it is manifestly not. It should be of considerable interest to investors, because if Blanchard's theory is correct it implies the Fed is about to make a (potentially grave) policy error.

As part of its more transparent approach, concomitant with its quarterly press conference the Fed publishes aggregated macroeconomic projections of the individual FOMC members. Because of the way the forecast exercise is structured, their long-run economic growth forecasts correspond to their estimates of the US economy's potential growth rate.

As shown in the exhibit below, US central bankers have been consistently lowering their estimates of the US economy's potential growth rate, which as of December stood at just 1.8%; its lowest level in the post Great Recession period. Under Blanchard's framework such a persistent decline constitutes *prima facie* evidence of a growth-impinging fall in US animal spirits, one that would seem therefore to warrant more not less monetary policy support[9].

Exhibit 2: FOMC – Long-run Potential Economic Growth Projections



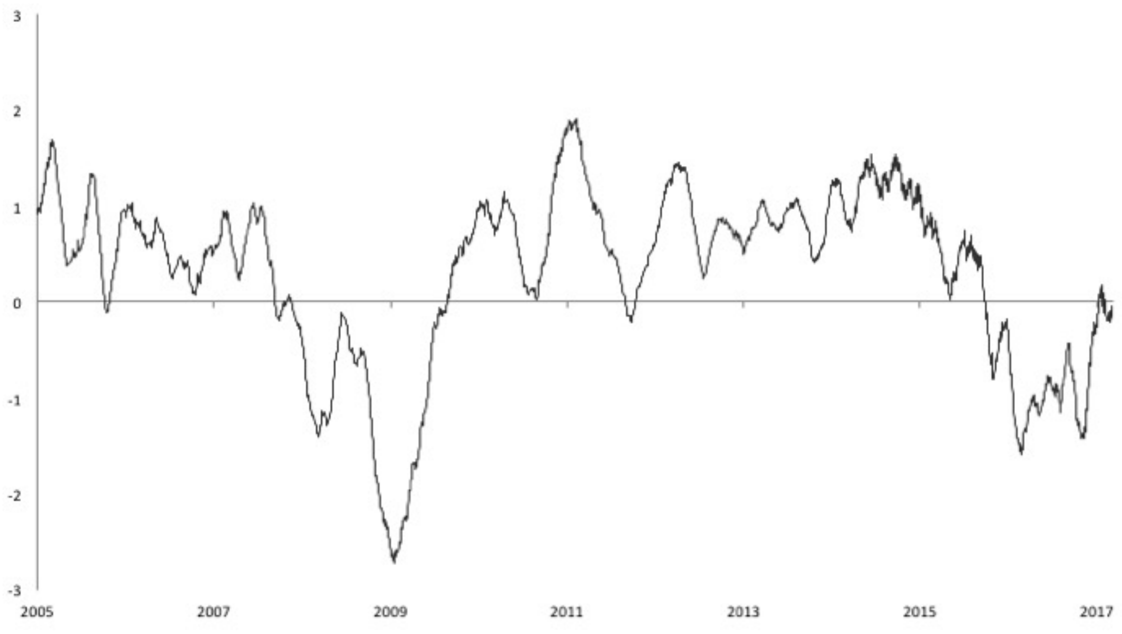
Source: www.federalreserve.gov

Yet, over the past couple of weeks, the Fed has signalled its intention to go in the opposite direction. In fact, given the rather heavy-handed hints by leading members of the FOMC, including Chair Yellen, that it intends to accelerate the pace by which monetary policy accommodation is removed[10] US interest rate futures markets have aggressively raised the implied odds of a 25bp hike at the March 15 policy meeting[11].

That said, there are solid reasons for doubting the validity of Blanchard's theory. The use of long-run potential economic growth forecasts to proxy animal spirits is certainly a neat workaround, but like all workarounds it is imperfect. Importantly, it is not a clean measure of economic "animal spirits" because potential growth rates are impacted by changes to capital and labour inputs[12] as well as shifts in productivity. Moreover, because potential growth rates are unobservable they have to be estimated and hence are subject to error.

One useful crosscheck is to compare the persistent downward revision in US potential economic growth estimates with our crowd-sourced US economic growth sentiment indicator derived from the analysis of millions of mainstream and social media posts published online every day. The exhibit below shows the evolution of this sentiment indicator in the year's preceding the Great Recession to the present day. One can clearly see the extreme negativity eight years ago, indicative of very low private-sector animal spirits that turned our global heatmap into a veritable oil slick[13].

Exhibit 3: Crowd-sourced Economic Growth Sentiment – US



Source: www.amareos.com

Subsequent to the aforementioned “green shoots incident” US economic growth sentiment rebounded fairly robustly. Although this improvement was somewhat uneven at first, by 2013 and 2014 public perceptions towards US growth were consistently positive, matching levels seen prior to the Great Recession.

If Blanchard’s hypothesis that subdued animal spirits were acting as a significant drag on economic growth is correct this should have marked a key turning point because, to borrow former PIMCO CIO Mohamed El-Erian’s phrasebook, the US economic recovery *should* have achieved “escape velocity”. Growth rates thereafter *could* have been more robust and - importantly - self-sustaining, providing global policymakers with scope to dial back on demand-side stimulus because the vicious circle of low animal spirits and weak economic growth *would* have been broken.

Shoulda, coulda, woulda.

Yet, as we know, this virtuous circle never materialized. The improvement in animal spirits proved transitory and central banks were forced, once more, to step in and provide fresh monetary support. For the Fed, which, envisaging a more durable recovery had slowed then ceased altogether its asset purchase programme in 2013/14, this meant delaying the start of its long-anticipated tightening cycle.

This failure means either Blanchard’s potential GDP growth estimate is a better proxy for capturing animal spirits than our crowd-sourced sentiment indicators or his theory for the “new normal” is incorrect. Unfortunately for him, but fortunately for us, of the two the most plausible is that it is his theory and not our sentiment indicators that are faulty.

After all, consider what has happened in the past few months following Trump’s election victory. Anticipating the incoming administration would inject more fiscal stimulus, as Trump pledged during the campaign, our crowd-sourced US economic growth sentiment indicator rebounded[14]. This move is entirely consistent with the sharp rally seen on Wall Street and the subsequent publication of better US so-called soft “survey” data. All three trends point to a clear improvement in animal spirits, something which is completely at odds with the US potential GDP growth estimate (recalling exhibit 2 above) staying at post Great Recession lows.

That said, even though Blanchard's animal spirits proxy may be flawed, and his theory incorrect, the implied view on the Fed making a policy error may not be. To see why we need to consider a different explanation for the tepid post Great Recession recovery.

For us, and many other market participants, the most obvious candidate for the unexpectedly soft economic growth performance since 2009 is elevated global indebtedness[15]. Despite all of the focus on deleveraging and consolidation over the past eight years, total debt – that is public and private – have increased in almost every major economy without exception[16].

Given debt represents the inter-temporal substitution of consumption (the single largest expenditure component of GDP) it is hardly surprising that at elevated levels debt serves as a disinflationary growth-impinging drag, one that can also account for the steady decline in potential economic growth rates for reasons unconnected with animal spirits[17]. This is something that most mainstream economists, like Blanchard, fail to appreciate or recognize fully[18].

Moreover, elevated debt also explains why the global economy did not achieve "escape velocity" in 2014 when private sector animal spirits were, as we have shown, at least as high as in the pre Great Recession period. Improving animal spirits can provide a temporary fillip to an economy (or financial asset price), but they cannot do so indefinitely absent a fundamental improvement[19]. The best analogy we can think of is the interaction of the elastic rope and gravity during a bungee jump. The elastic may be able to overcome the force of gravity briefly, but it is gravity that wins in the end.

The fiscal policies promised by Trump may well be able to achieve this outcome over time, but it remains unclear to what extent these get enacted. With the debt ceiling[20] suspension due to end on March 15 (the same day as the FOMC meeting[21]) it should not be long before investors get some sense of the degree of opposition to Trump's fiscal plans from the GOP; a crucial element given they control both the House and the Senate.

Until there is greater clarity on this front, the wiser course of action for the Fed would be to refrain from accelerating the speed by which monetary accommodation is removed. Hence, even though from entirely different reasons than Blanchard, we also suspect that a Fed hike next week would constitute a policy error, but one they seem intent on making.

FOOTNOTES:

[1] https://www.ft.com/content/3cb7838e-a547-11e3-8988-00144feab7de

[2] See: http://www.cbsnews.com/news/ben-bernankes-greatest-challenge/6/

[3] Obviously this does not apply for "End-of-the-Worlders", of which there were more than a few at the time.

[4] We outlined this mechanism in a previous Market Insight – see: https://amareos.com/blog/uncommon-knowledge/

[5] See: https://amareos.com/blog/outsmarting-the-crowd/

[6] AKA "new normal".

[7] See: http://voxeu.org/content/self-fulfilling-pessimism

[8] That is to say, prior to the Great Depression the prevailing view of macroeconomists was that high unemployment was only a temporary phenomenon that would eventually be corrected via the standard market clearing mechanisms.

[9] Towards the end of video Blanchard comments about the Fed being able to choose higher interest rates in the future but only after animal spirits have improved, a situation incongruent with the present given the continued lowering in the FOMC's estimates of US potential economic growth rate estimates.

[10] That is to say relative to what it has achieved not what that was implied via forward rate guidance i.e., from 25bp per annum to 25bp per quarter.

[11] At the time of writing the market-implied odds of a March hike are over 85%.

[12] Especially important in light of the profound demographic trends that are well-known.

[13] See Exhibit 1 above.

[14] As we noted previously, the rise in animal spirits in the US is no longer evenly distributed. There is a marked bifurcation between the mainstream and social media. The latter, which we consider to be more indicative of the mind set of retail versus more professional investors, is much more constructive - see: https://amareos.com/blog/market-sentimentalist-riding-wave/.

[15] In this sense Marx, who understood the workings of the capitalist system better than many pro-capitalist economists, was wrong. Religion is not the opium of the people, it is debt. This is what alleviates the pain associated with a decline in the workers share of national output that his theory predicts.

[16] For the exceptions – see: http://www.mckinsey.com/global-themes/employment-and-growth/debt-and-not-much-deleveraging

[17] Please ask if you are interested to understand this mechanism.

[18] Why this is the case raises some profound questions about how economics is taught.

[19] It is for this reason that we make clear that our crowd-sourced sentiment indicators are a complementary input into an investment or research process and not a substitute.

[20] A ridiculous self-imposed, and therefore inherently masochistic piece of legislation, if ever there was.

[21] The Dutch election takes place on the same day so next Wednesday looks to be shaping up to be a busy day. (To see our latest thoughts on the election given the recent moves in Dutch crowd sentiment check out our twitter feed @Amareos_info.)

THE MARKET SENTIMENTALIST:
New-FANG-led Technology

THURSDAY, MAY 18, 2017

Often one hears the phrases “dumb” money and “smart” money when commentators are discussing financial market participants. Such classifications are not only arbitrary they are also meaningless. More than twenty years toiling away both on the sell-side and the buy-side side has taught us that asset markets are great levellers.

There are countless instances where “smart” money suffers traumatic P&L underperformance (one prominent, and unquestionably smart, UK hedge fund manager has had a rather torrid time of it over the past 18 months) while “dumb” money has shined[1][2]. Additionally, even those investors with proven strong investment track records are far from infallible. Take Warren Buffett, someone we mentioned in last week’s Market Insight[3].

Buffett's investment career is without doubt impressive. He, and his Berkshire Hathaway colleagues have generated consistent market-beating returns such that one wonders if some academic economists, intellectually beholden to the efficient market hypothesis, consider him nothing more than a ukulele-playing, cherry-cola-drinking figment of their imagination. Despite that, he has one notable blind spot - technology - one he acknowledged in his recent shareholder meeting as per his *"We missed it"* comment in relation to Amazon and *"I blew it"* in relation to Google.

Technology and humankind have a long and chequered history. Without it our lives would be infinitely poorer - we would be inhabiting a pre-stone age world. Aside from a few extreme Ecowarriors who dream of return to a simpler (simplest?) life, who would argue against the merits of fire, the wheel, the internal combustion engine, electricity or the internet[4]. And yet, at the same time, we seem to fear every step down the technology path.

Present public concern centres on the impact of technology on employment, especially from robotics and artificial intelligence, amid worries it will lead to mass job losses – employment extinction if you like[5].

The historical record suggests such fears are largely unfounded. Two centuries ago in England, similar concerns gave rise to the Luddite movement[6], but what happened then – and indeed has happened in other industries since – is that employees displaced by technological innovation were simply reabsorbed into the labour market and engaged in different activities to earn a living. This transition is neatly mapped by the loss of agricultural jobs, first to manufacturing and then, in turn, to services, where the vast majority of people - in developed economies at least - are now employed.

Despite such experience, the foundation for arriving at this pessimistic assessment is that unlike previous episodes of technological innovation it is not just blue collar workers involved in manual activities who are at risk. It is any job that has a standardized pattern or routine and hence is amendable to automation. A well-known study published in 2013 by Carl Benedikt Frey and Michael Osborne concluded that almost half of US workers had jobs that were at risk[7].

We are by no means experts in the field of robotics, but just take a look at the following recently uploaded footage showing a very capable[8] robot developed by Boston Dynamics:

(Please click here to watch the video: https://www.youtube.com/watch?v=-7xvqQeoA8c)

Worse, there is now a robot capable of flipping hamburgers – the ultimate downside employment hedge[9]!

Even more concerning, as Bill Gates noted in a recent interview where he proposed taxing robots[10], is the likely speed of the substitution of technology for labour.

"You cross the threshold of job-replacement of certain activities all sort of at once."

A fast transition of the sort Gates seems to be anticipating will make it much harder to absorb displaced workers, so it is easy to see why there is concern about the likely profound socioeconomic impacts upon the global economy. Nevertheless, technology is, and will continue to, play an ever-increasing role in our lives.

In light of such trends, and unlike in the late 1990s when Buffett's aversion to technology stocks served him well – it helped him deftly sidestep the dot.com bubble in the late 1990s – it has cost him and his shareholders by missing opportunities such as Alphabet. This is something he appears to be trying to make up for by increasing his stake in Apple.

Yet, while Buffett appears to be latterly – and narrowly – learning from his past mistakes (the most effective way to become smarter) and overcoming his aversion to leading technology stocks there is still much, supposedly “smart”, money firmly in the bearish camp when it comes to this sector.

For example, short interest in FANG stocks, the bell-weather tech stocks comprising Facebook, Amazon, Netflix and Google (subsequently renamed the mnemonic-destroying Alphabet) has risen sharply over recent months to more than USD17bn (up just over 30% year-to-date). Without doubt, this has been a painful trade for supposedly “smart” hedge funds as these stocks have done remarkably well, handsomely beating the overall market having risen by an average of 25% year-to-date.

What’s more, despite the well-recognized dangers of doubling down on a losing trade that is exactly what the shorts have been doing, with aggregated positions having increased every month since the start of the year.

Clearly, hedge fund managers shorting FANG stocks are not motivated by Ludditeian (we just made that word up) thinking[11]. Rather, their bearish view reflects their belief that investors are overpaying for future earnings, even though those earnings streams will almost certainly be rising as technology companies take an increasing slice of the expanding global economic pie.

In last week’s Market Insight we discussed the historically elevated valuation of the S&P500, which on Shiller’s CAPE has reached 29.5. Given such levels have only been exceeded twice before in over 130 years, it sounds stretched, but compare that with the PE ratios for the FANG stocks. Only Apple, with a PE ratio of 18 is below the market average. Google’s PE stands at 31, Facebook at 38, and Amazon and Netflix’s having eye-watering ratios of 180 and 205 respectively. To even remotely justify such valuations, the future earnings pie of Amazon and Netflix in particular are going to have to grow…. a lot!

In short, hedge fund managers are betting on the fact that these stocks are in a bubble where rationality has been replaced by hype. It is not hard to see why they might think that given such strong price momentum and in the case of Netflix and Amazon very lofty valuations.

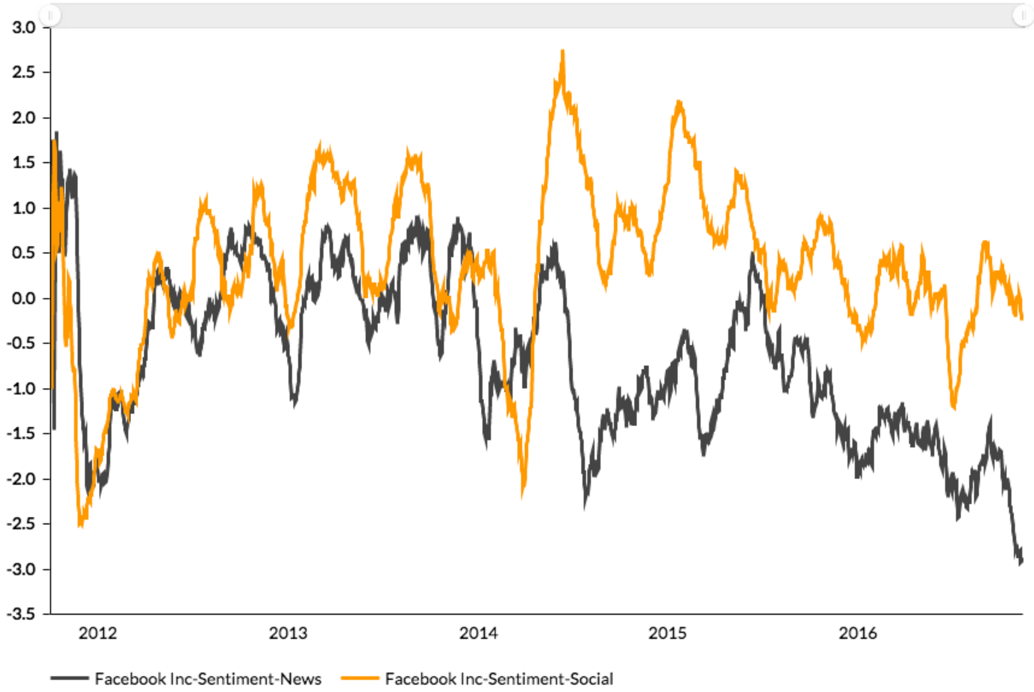
As regular readers will appreciate, our crowd-sourced sentiment indicators are uniquely placed to pick-up "bubble behaviour" because asset price bubbles are typically characterized by extreme sentiment skews (very high indicator readings). By invalidating one of the prerequisites for the predictive power of "the many over the few", this sets-up the condition we denote "crowd fail", or as Benjamin Franklin more eloquently put it,

"If everyone is thinking alike, then no one is thinking"

So, if the "smart money" hedge funds are correct and the FANG stocks are in a bubble, one that they will successfully exploit when it bursts, as all bubbles must do at some stage, then we should expect to see strongly positive sentiment readings for the four constituent stocks.

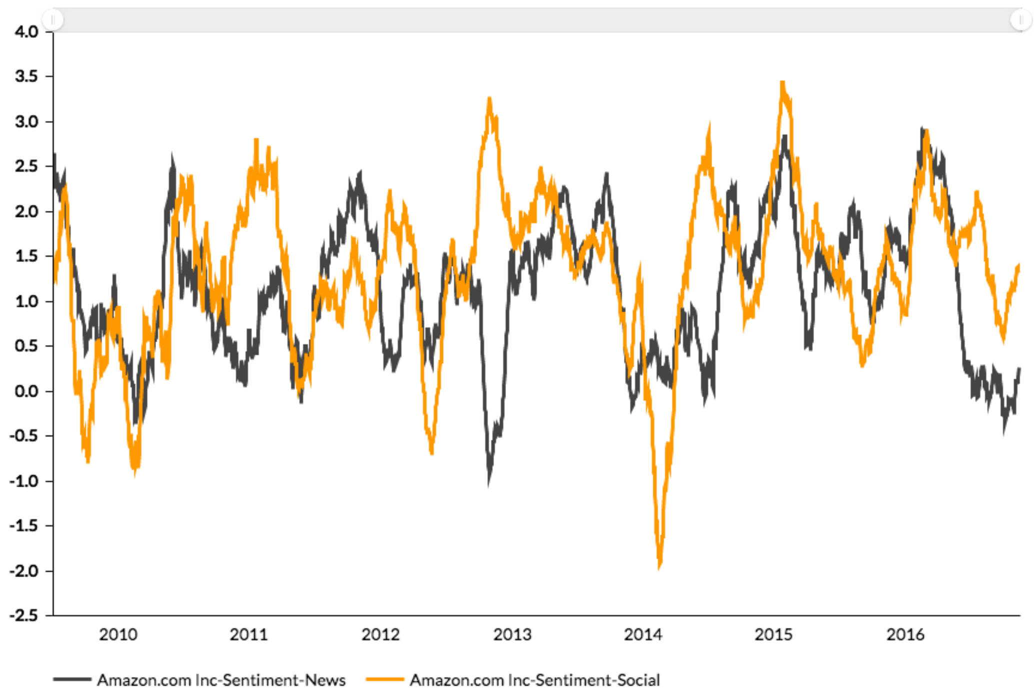
What do we observe? Take a look at the following exhibits.

Exhibit 1: Crowd-sourced Sentiment By Media Type – Facebook



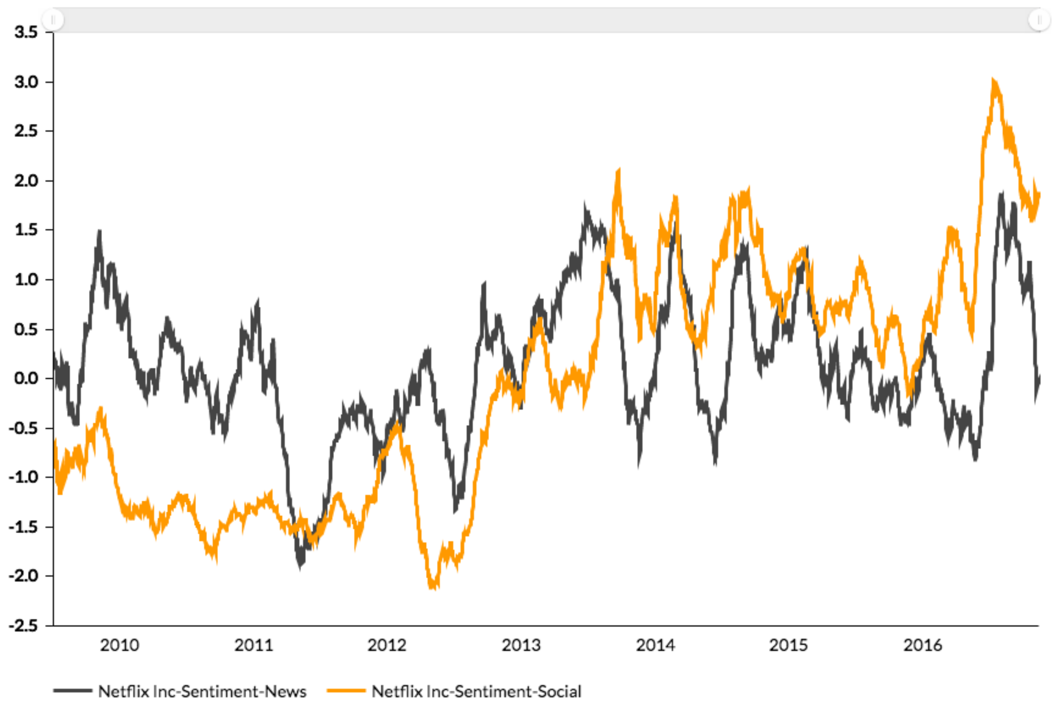
Source: www.amareos.com

Exhibit 2: Crowd-sourced Sentiment By Media Type – Amazon



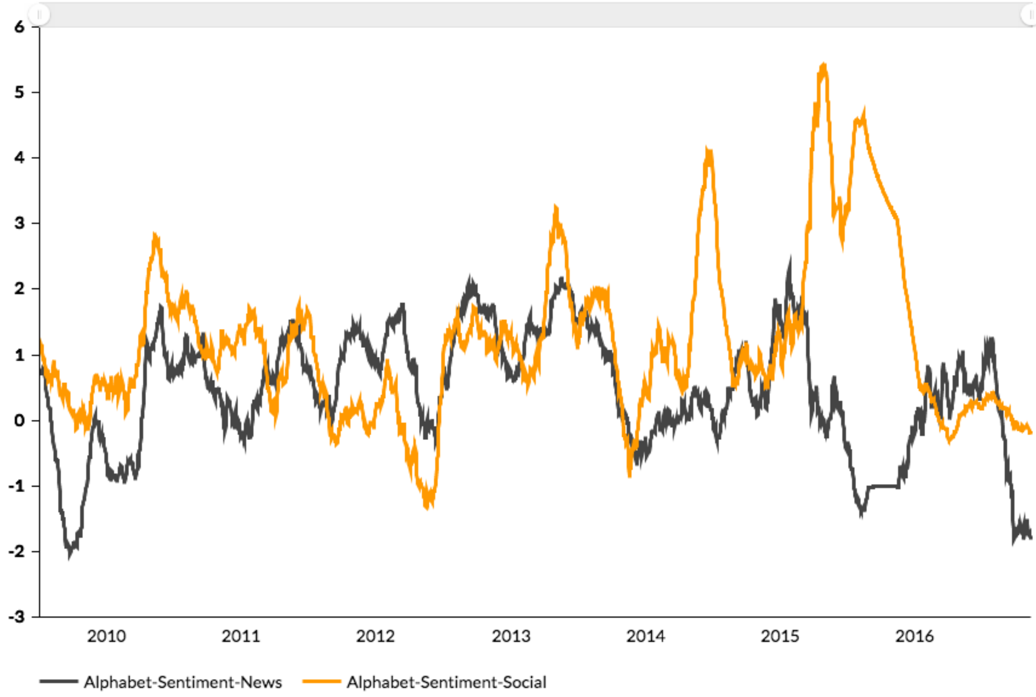
Source: www.amareos.com

Exhibit 3: Crowd-sourced Sentiment By Media Type – Netflix



Source: www.amareos.com

Exhibit 4: Crowd-sourced Sentiment By Media Type – Google (Alphabet)



Source: www.amareos.com

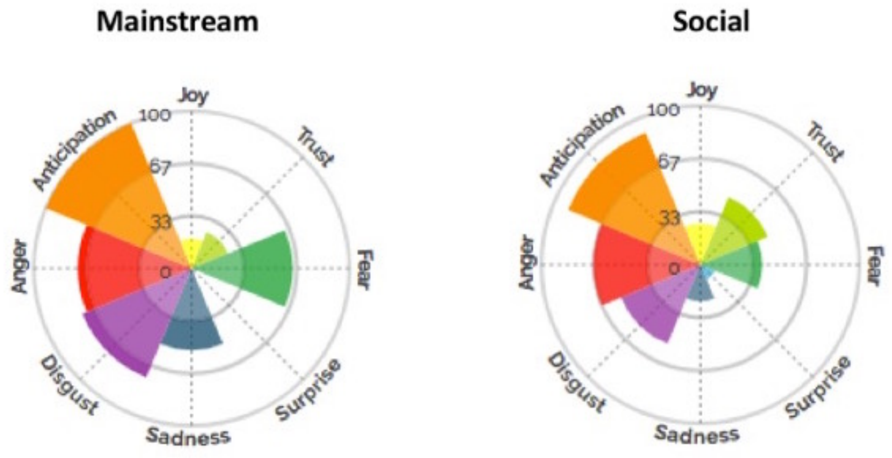
We have distinguished between media types, reflecting our judgement that the tone of the mainstream media is more reflective of a professional investor audience – the "smart" money using the language introduced at the start of this note, whereas social media is more reflective of a retail investor audience – the "dumb" money.

The common thread in our sentiment indicators is that for each of the four tech companies social media sentiment is higher than mainstream media. This strongly suggest that that these stocks are more favourably viewed by joe public compared with investment professionals.

However, when we look at the overall level of sentiment, that is to say the skew in the crowd's thinking only Netflix's, and to a lesser extent Amazon, can be considered elevated. Indeed, for Google and especially Facebook, social media sentiment is close to zero, indicating no strongly held views, while mainstream media sentiment is strongly negative.

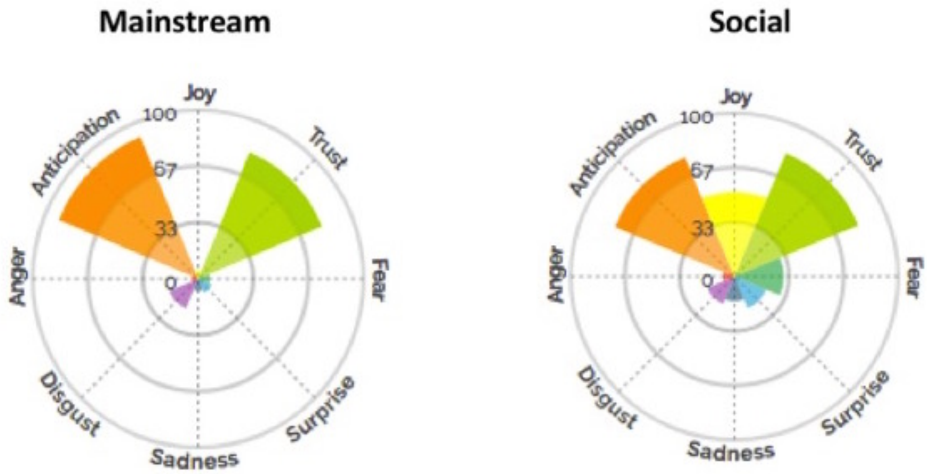
Drilling down into tone of the online posts in relation to the four companies, we also observe notable differences in the intensity of crowd feelings towards the four companies at the individual emotion level. Again, to capture potential differences between the two media types we plot both separately rather than in the usual aggregated form – see exhibits below.

Exhibit 5: Emotions Polar Map – Facebook



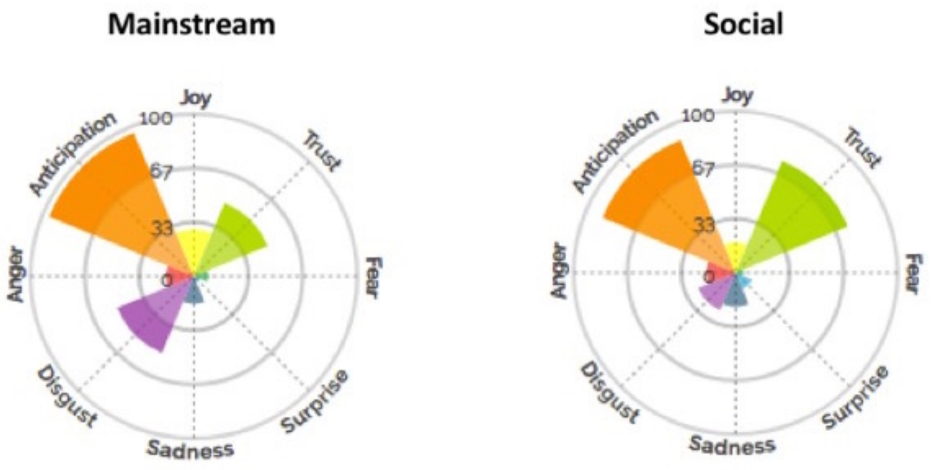
Source: www.amazon.com

Exhibit 6: Emotions Polar Map – Amazon



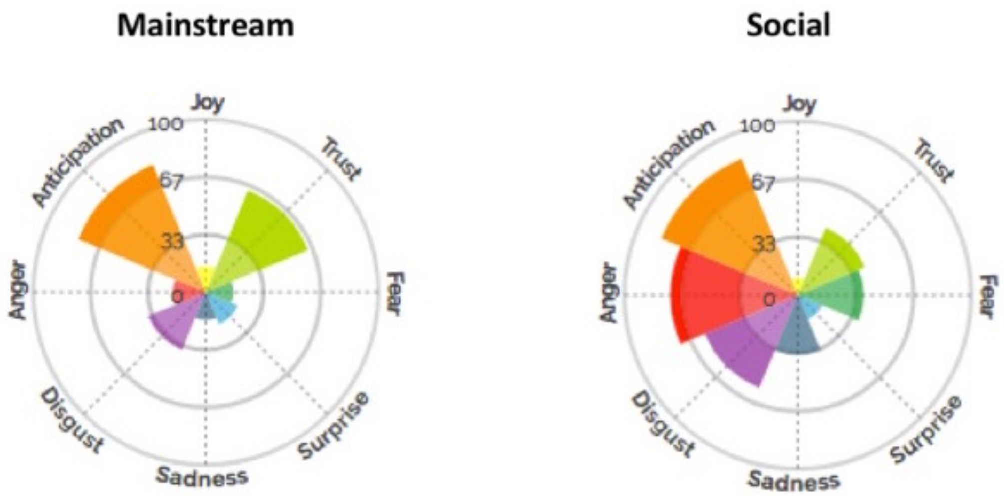
Source: www.amazon.com

Exhibit 7: Emotions Polar Map – Netflix



Source: www.amazon.com

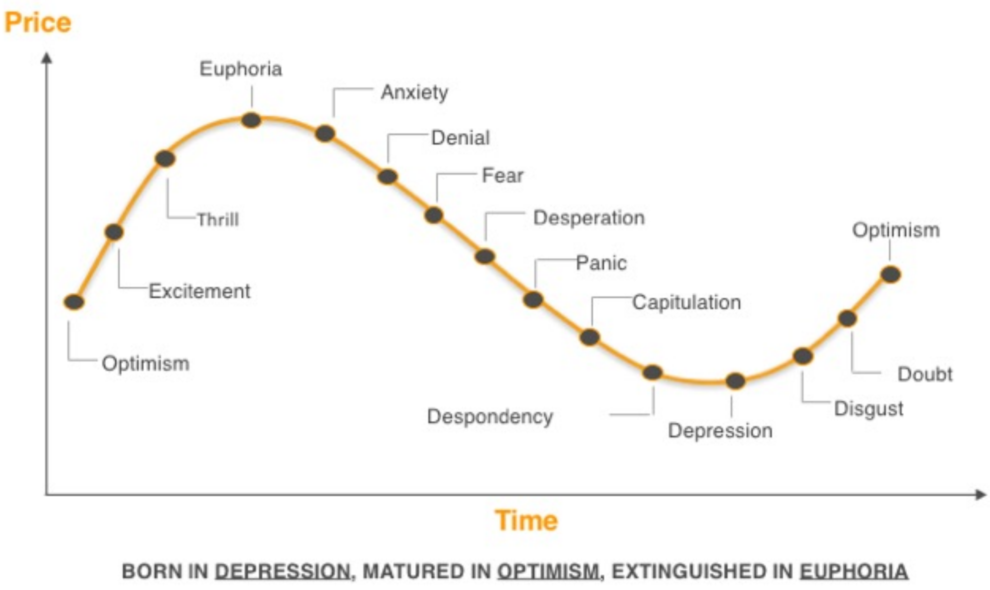
Exhibit 8: Emotions Polar Map – Google (Alphabet)



Source: www.amazon.com

While the crowd has high levels of anticipation regards all four companies, as one would naturally expect for leading technology companies, posts about Facebook in both media types and in Google on social media have notable readings for Anger and Disgust - two negative emotions that actually are positive price signals because they are usually observed towards the end of a stylized market psychology cycle – see exhibit below.

Exhibit 9: Stylized Investment Psychological Cycle



Source: www.amareos.com

Such strong negative emotional readings, which are absent for Amazon and Netflix, are not the sort one expects to see during a bubble. Combined with the relatively low overall sentiment reads, this suggests that, if anything, the risk is that in these two companies' share price remains on the upside given the potential for position capitulation ie a short squeeze is tangible.

That said, if one simply cannot resist the temptation to join the bearish side of the trade in these technology leaders, with overall sentiment positive but losing momentum and given the near absence of negative emotional reads of the four companies it is Netflix that appears to most vulnerable.

FOOTNOTES:

[1] Think: the repeated surveys showing more than 50% of drivers consider themselves to be above-average despite its logical impossibility.

[2] Were it not for some well-entrenched cognitive biases that serve to override logic when assessing past performance, investors would be amongst the most humble people on the planet.

[3] See: https://amareos.com/financialresearch/the-market-sentimentalist-are-the-stars-aligned/

[4] This is obviously an abbreviated list. Although we are fans of Apple products we would not go as far as to add the iPhone, or their other sleekly designed products to that list, although we are sure many would.

[5] Or, even more extreme - outright extinction.

[6] The Luddites smashed machinery in textile factories in the belief that this would protect their jobs.

[7] See: http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf

[8] Capable of what is clearly the question. We doubt that the video will do anything to assuage concerns held by some as to our longevity on this planet.

[9] See: https://www.youtube.com/watch?v=FaZseAwIdlY

[10] Gates's view is that robots should be taxed in much the same way as labour presently because otherwise the government would potentially lose a massive amount of revenue (through lost income tax receipts not to mention increases in unemployment benefits to be paid). While accepting that taxing robots may, by introducing an inefficiency, stifle innovation which is detrimental, we see merit in Bill Gate's proposal, but not just because of the impact on government finances. At hand is a much more fundamental problem.

Just as light displays duality – it behaves as both a wave or a particle – so too do humans. We are both wage earners and consumers. Absent such a redistribution mechanism the value-add generated by robots doing the work formerly done by humans will accrue to their owners. This has serious social and economic implications. It will further exacerbate economic inequality which, in our opinion, has been a significant contributing factor to the nationalist-populist backlash observed in many developed countries. Moreover, if even close to 50% of jobs are lost to technology – estimates vary depending on the employment characteristics of individual countries, but the lower limit for estimates is in the mid-30% range – over a relatively short period of time, then the impact upon aggregate demand will be catastrophic. Indeed, it would be almost the perfect Marxian scenario which implies the global economic system collapses due to the impoverishment of labour to capital. In comparison with such a possibility, the idea of a tax being applied to robots is perhaps not as negative as some would have us believe.

[11] At least we assume not.

THE MARKET SENTIMENTALIST: ANATOMY OF A BUBBLE

WEDNESDAY, DECEMBER 13, 2017

As 2017 draws to a close (this will be the last Market Insight of the year so Happy Holidays everyone!) it is fair to say that the past 12 months weren't especially kind to the bears. Global equities, despite looking expensive on standard valuation metrics, generated double digit gains in developed markets (EAFE Index +19%) while emerging market equities recorded even stronger gains (EEM Index +27%). Adding to the misery for the bears, the sell-off in bonds witnessed in the final weeks of 2016 failed to evolve into the multi-decade trend reversal many investors anticipated it would[1].

Thankfully, we were on the right side of these market moves (our currency calls were less successful - the JPY and GBP both displayed resilience we did not anticipate given the profound change to BoJ monetary policy operations in the case of the former[2], and extremely messy Brexit negotiations in the latter[3]). However, our stellar call of the year was undoubtedly, Bitcoin. It's not often an analyst can attach their name to favourable market move which in percentage point terms has three zeros in front of the decimal place.

After contemplating this year's market moves what is clear to us is that many investors and financial market commentators do not fully understand speculative asset price bubbles or their associated components. After all, market prices seemed blissfully unaware of the plethora of articles in the financial media over the past 12 months containing bubble warnings for stocks, bonds and especially (and more recently) Bitcoin.

Former Fed Chairman Greenspan famously argued that it was difficult to identify asset price bubbles *ex ante*, which was part of his justification for pursuing a "clean versus lean" approach to monetary policy[4]. However, this is far from obvious when one considers a standard definition of a speculative asset price bubble (courtesy of Investopedia).

"A speculative bubble is usually caused by exaggerated expectations of future growth, price appreciation, or other events that could cause an increase in asset values. This drives trading volumes higher, and as more investors rally around the heightened expectation, buyers outnumber sellers, pushing prices beyond what an objective analysis of intrinsic value would suggest."

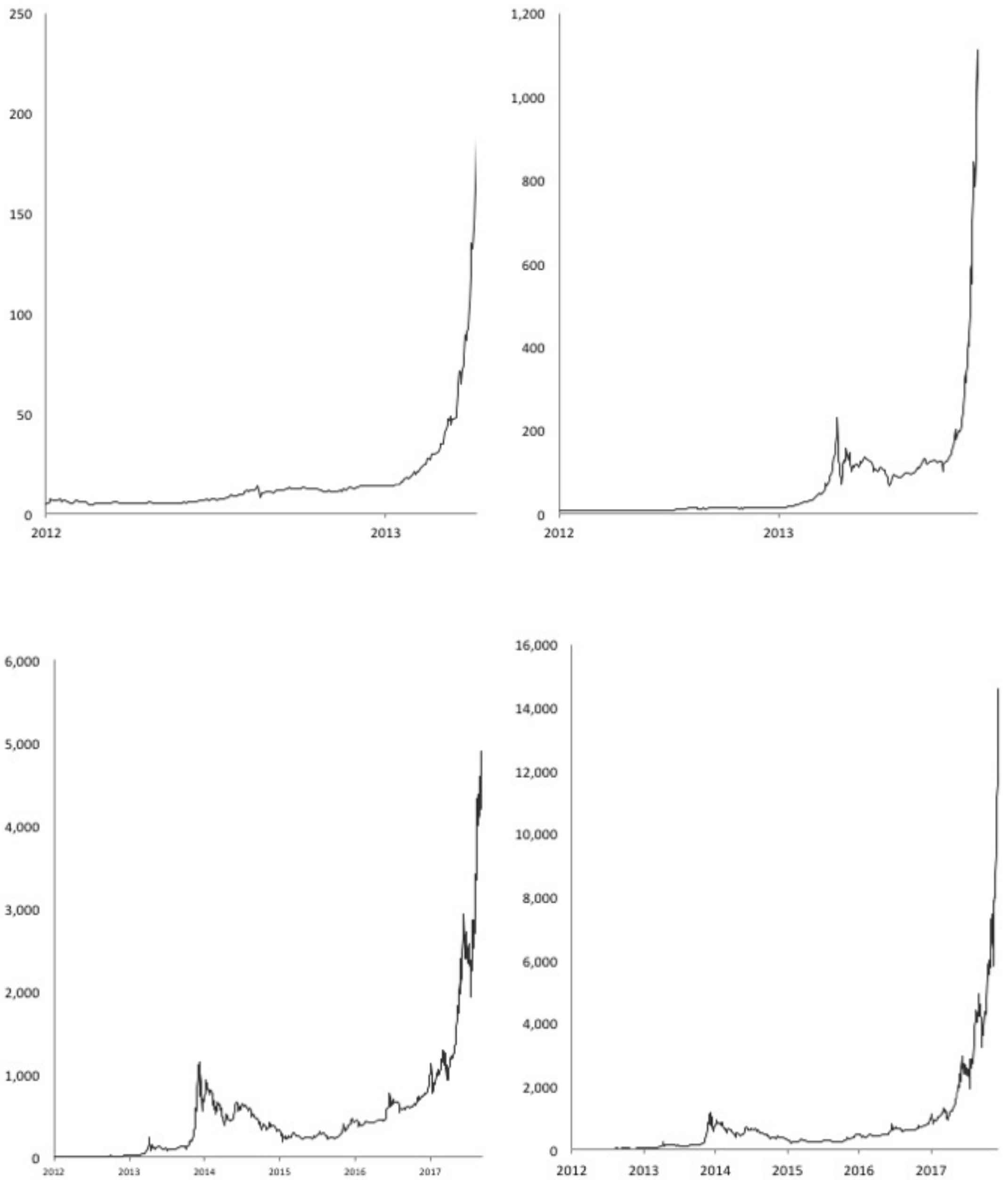
Based on this definition there are three key ingredients for a speculative asset price bubble:

- strong positive price momentum (price appreciation)
- high sentiment (exaggerated expectations)
- fundamental overvaluation (beyond intrinsic value)

Of the three, strong price momentum[5] is the most visible and, as a result, it tends to be the one that most financial market participants focus on when deciding whether an asset price is in a speculative bubble or not.

However, as Bitcoin has repeatedly demonstrated, this is a flawed approach. In a Market Insight published earlier in the year[6], we included a series of charts plotting the evolution of Bitcoin's price since 2012. It showed that over this period there were three occasions when its price rose exponentially (incorporating the latest move there are now four occasions). In each of the three previous occasions, there were fairly significant corrections but the underlying trend remained firmly upwards – for our view on this latest move keep reading).

Exhibit 1: A Bitcoin Bubble …Now …Now …Now …Or Now?



Source: www.quandl.com

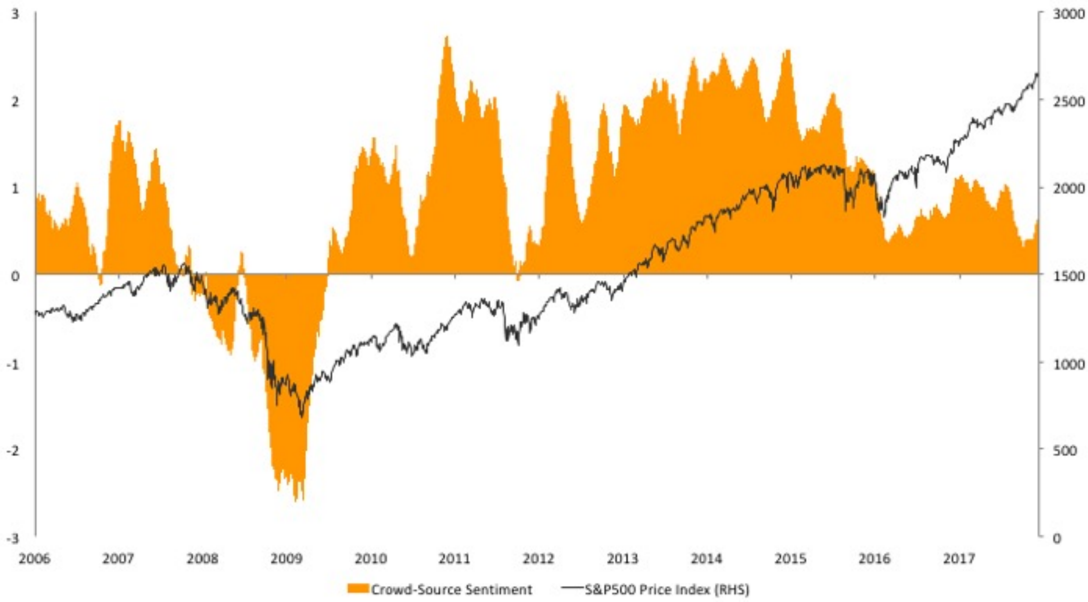
Using the Bitcoin example shown in the exhibit above, the salutary lesson for investors is that exponential price dynamics are an incredibly inexact tool by which to assess whether there is an asset price bubble and, more importantly, whether the bubble on the cusp of bursting.

It has to be considered along with the other ingredients, that is to say, sentiment and fundamental valuations. Of these two additional elements, we are well-positioned to assess the former using our crowd-sourced sentiment indicators. Indeed, it was instrumental in keeping us bullish earlier in the year. As we noted in the aforementioned Market Insight (referenced in footnote 6),

"when we look at crowd-sourced sentiment towards Bitcoin it has been rising recently (positive sentiment momentum) but is far from extreme when compared with previous sentiment peaks. The absence of a strongly positive sentiment reading is important as it strengthens our conviction that Bitcoin is not in bubble-territory."

Our crowd-sourced sentiment indicators were also critical in keeping us bullish towards equities[7], especially in the US. Equities may well have been overvalued, and hence ticked one of the boxes in the bubble list, but crowd sentiment was generally subdued – see exhibit below[8].

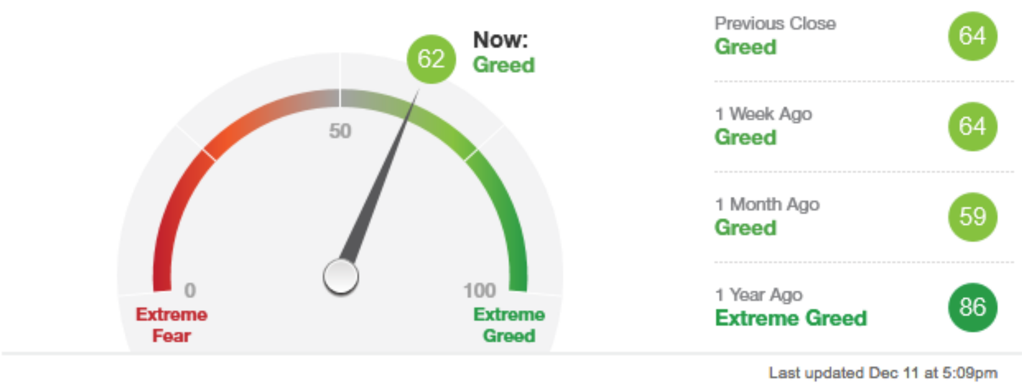
Exhibit 2: Crowd Sentiment vs. Price – US Equities



Source: www.amareos.com

Simply put, there was not a sense of, to borrow Greenspan's phrase, "irrational exuberance". This was a perception not readily apparent to investors who use market prices, such as the VIX implied volatility index, as a proxy for sentiment. Indeed, consider CNN's composite price-based US equity sentiment indicator, which as shown in the exhibit below has been in "Greed" territory for much of the year - (more fake news perhaps!).

Exhibit 3: CNN's Fear And Greed Index

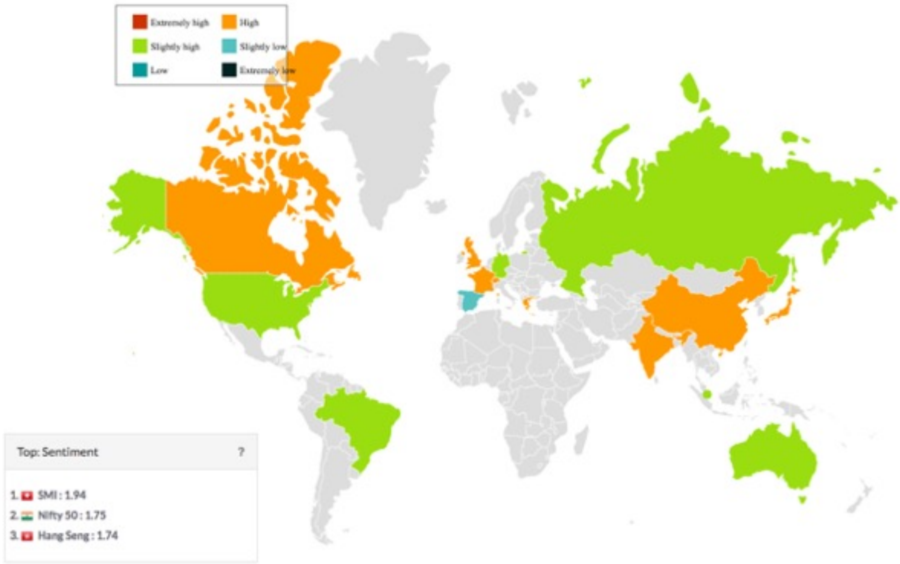


Source: http://money.cnn.com/data/fear-and-greed/

The key takeaway from these two examples is that to conclude that an asset price is in a bubble, one whose imminent bursting will create exploitable shorting opportunities, requires all three ingredients to be present.

Looking at the latest sentiment readings for global equities – see exhibit below – what is apparent is that the double digit gains witnessed over the past year has generated a more positive hue to our sentiment heatmap. However, across the major indices sentiment is far from extreme, suggesting that the bull market still has legs. (NB: Swiss, Indian and Hong Kong stocks have historically elevated crowd sentiment readings indicating a less constructive assessment).

Exhibit 4: Global Heatmap – Equity Indices

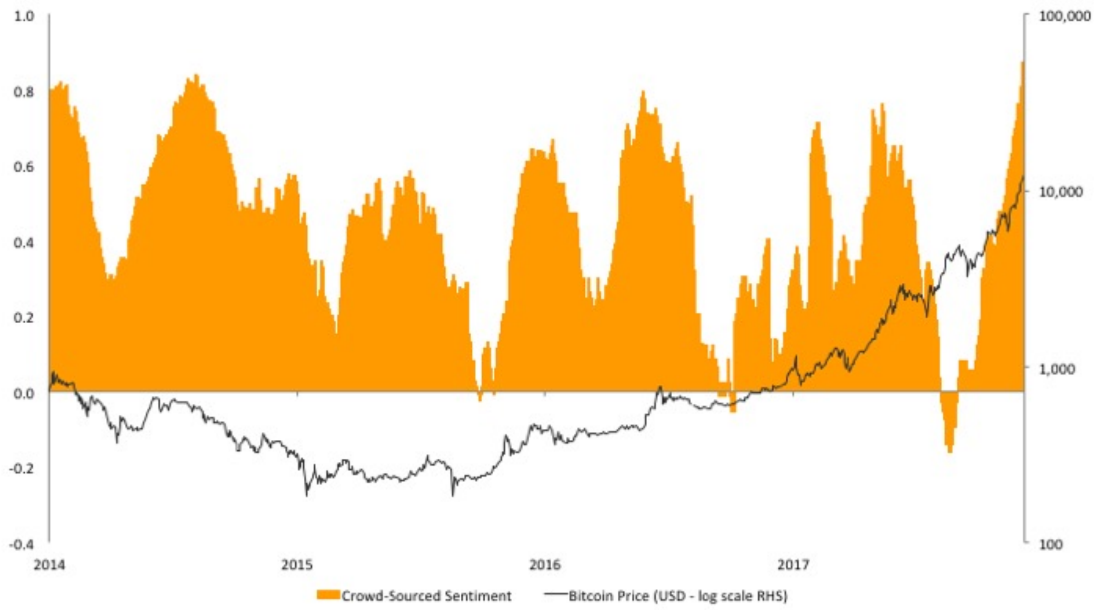


Source: www.amareos.com

What about Bitcoin, the financial asset (a label many would quibble about as proof of the fact that Bitcoin really is digital gold and like its naturally occurring equivalent is financial marmite - you either love or hate) where bubble speculation is at its greatest?

Some 60 days and USD 10,000 higher than when we last published on Bitcoin[9] signs of over exuberance are much clearer. As shown in the exhibit below, crowd sourced sentiment towards Bitcoin has risen to its highest levels seen since the cryptocurrency began to receive mentions beyond the geek world.

Exhibit 5: Crowd Sentiment vs. Price – Bitcoin



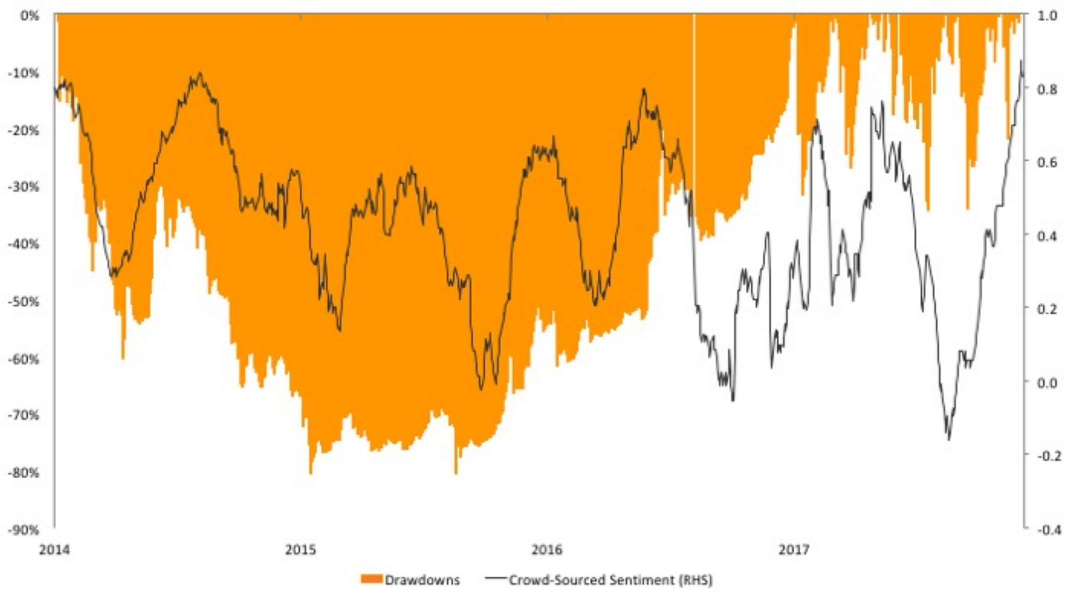
Source: www.amareos.com and www.infrotrie.com

On this basis, and unlike earlier in the year, there is considerable frothiness of optimism on the part of the crowd which has, unquestionably in our view, been a key factor driving the price of Bitcoin higher. In that sense, RBS Chairman Howard Davies, who deployed Greenspan's phrase "irrational exuberance" when describing recent price moves in Bitcoin is fully justified.

Given this, we expect there to be a fairly significant downward correction as, or more probably when, crowd sentiment momentum starts to fade. Looking at previous episodes, a pullback of around 30% would not be an unreasonable expectation – an eye watering magnitude for those on the wrong side of it.

Certainly, now is clearly not the time to be jumping on the Bitcoin bandwagon.

Exhibit 6: Crowd Sentiment vs. Price Drawdowns – Bitcoin



Source: www.amareos.com and www.infrotrie.com

Does this also mean Bitcoin is unquestionably in a bubble? As mentioned we have two of the three ingredients for a bubble - excessive optimism (exuberance) and strong positive price momentum. The third ingredient – fundamental overvaluation - is much a much trickier proposition to assess.

For those who think that Bitcoin is nothing more than a hi-tech Ponzi scheme that relies upon the *greater fool theory* (presumably given its recent price dynamics there are a lot of them around) any value above zero is fundamentally overvalued. On this basis, Bitcoin is the shorting opportunity of a lifetime. That said, with price momentum so strongly positive, timing is everything. (This is a truism in investment, but the dangers of getting it wrong in Bitcoin's case would be extremely toxic to one's financial health.)

We find such arguments less convincing. In the Market Insight referenced in footnote 6 above we outlined our approach to generating a fundamental valuation for Bitcoin[10]. We deployed a technique Tetlock and Gardner in their book Superforecasting[11] called Fermi-izing[12], which breaks down a complex question into its component parts. This approach, they found, often generates superior predictions, especially when information is either unknown or missing. The same technique underpins the Drake equation that seeks to provide a framework for encapsulating all of the relevant information to calculate the number of intelligent civilizations that existed in the galaxy (a bitcoin valuation seems positively tame compared to that).

In the case of bitcoin the equation looks like this:

BIT_fv = (S . 1/N . R . C) / B

BIT_fv = Fundamental value of bitcoin

S = Stock of global fiat money

N = Total number of cryptocurrencies

R = Ratio of bitcoin's market share to average cryptocurrency market share

C = Ratio of cryptocurrencies/fiat money

B = Total supply of Bitcoin

The outstanding stock of fiat money and the finite number of Bitcoins are both known numbers and serve to provide a crucial valuation anchor. The other three variables upon which the valuation relies need to be estimated and they are:

- how much money will the public hold in virtual form?

- how many cryptocurrencies will there be?

- what will Bitcoin's market share be?

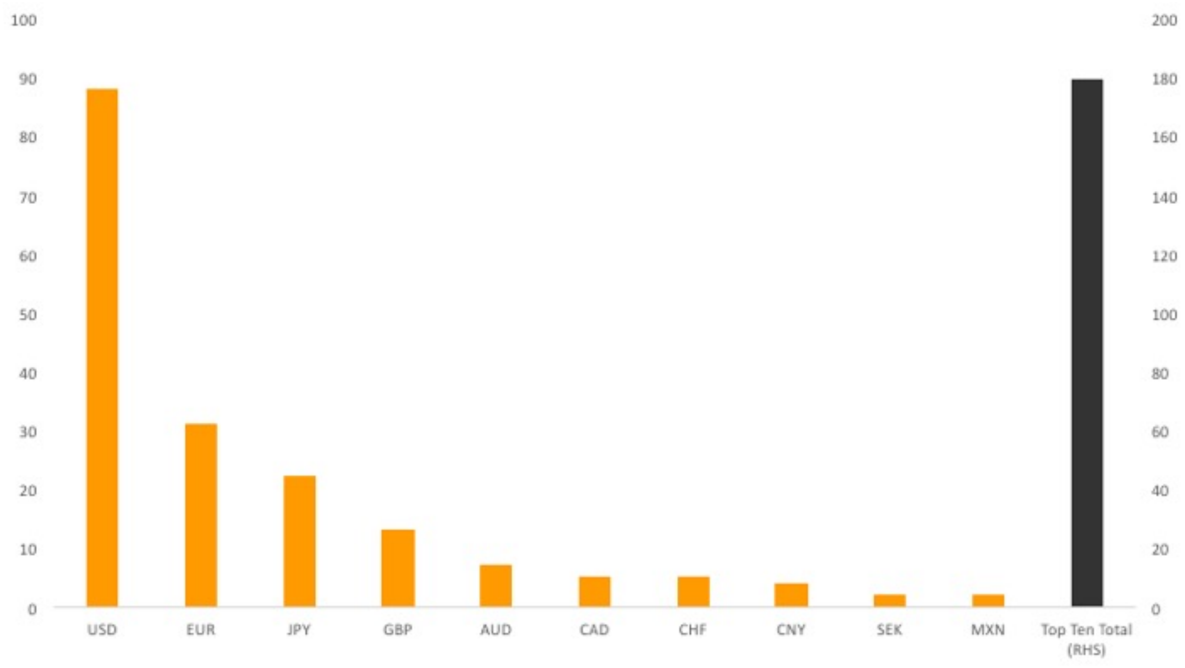
Assuming 10% of money will, eventually, be held in virtual form and that there would be 10 virtual currencies each having an equal share, we estimated the fundamental value for Bitcoin at USD 29,000. However, using the latest estimate for the stock of global fiat money (USD 83.6tr) and also taking into account that a recent study by Chainalysis[13] that between 2-4 million Bitcoins have effectively been lost[14], the fundamental estimate for Bitcoin using the same assumptions rises to USD 46,000. Either way this is substantially higher than the current market price of Bitcoin – and hence suggests that short-term froth aside Bitcoin is not a bubble.

Obviously this approach relies on some fairly heroic assumptions, but how plausible are they?

The ratio we are most confident about is that there will be no more than around 10 globally traded cryptocurrencies. Given there are currently close to 1,000 in existence this seems like a big call. However, when one looks at trading activity of the 180 fiat currencies in the world today, what stands out is the very uneven distribution.

The latest data on OTC annual turnover from the BiS triannual FX survey (2016)[15] show four currencies – USD, EUR, JPY and GBP – dominate (see exhibit below). Collectively they occur in more than 150% of all transactions (the data reports whether the currency was included in either leg of the transaction and hence the aggregates sum to 200% not 100%).

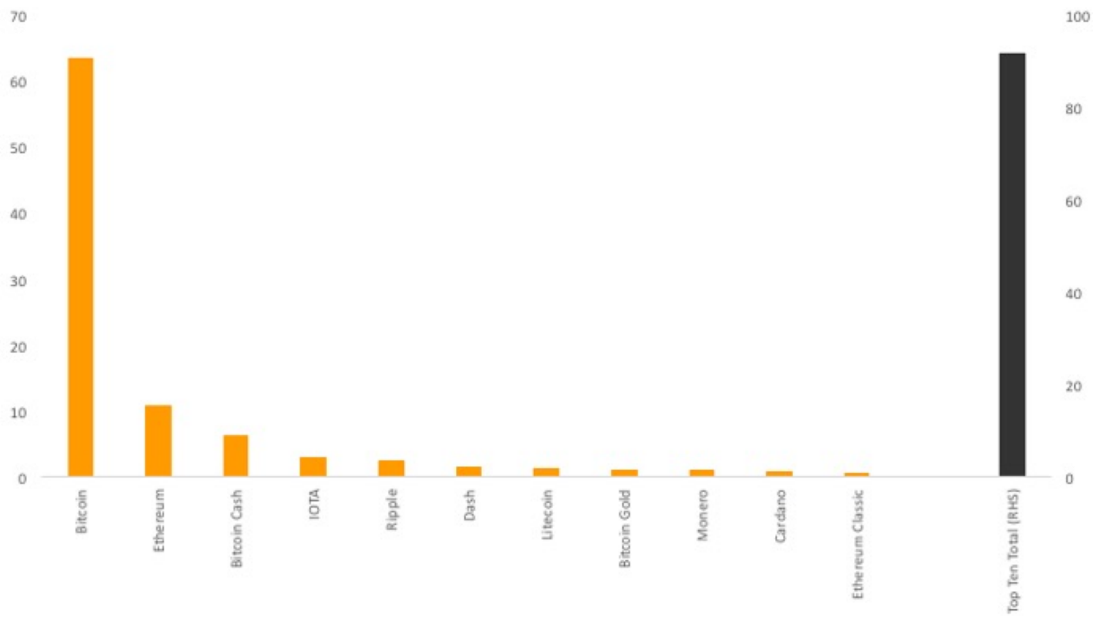
Exhibit 7: FX OTC Volumes – 2016



Source: www.bis.org

The comparison we are about to make may appear at first glance to be apples to oranges – one is based on turnover and the other is market capitalization - but as both reflect the impact of network effects we consider it to be legitimate. Indeed, looking at the distribution of market capitalization for cryptocurrencies we see a similar profile with the top ten cryptocurrencies accounting for almost 90% of the total – see exhibit below. Of these, Bitcoin is by far the largest at approximately 60%.

Exhibit 8: Cryptocurrencies By Market Capitalization (USD bn)



Source: https://coinmarketcap.com/

Even if hundreds, or thousands, of cryptocurrencies are in existence, network effects will ensure that only a handful dominate and, as evidenced by its current high share of market capitalization, Bitcoin has a strong first mover advantage.

Given that, it would appear that, if anything, there is upside risk to our assumption of Bitcoin having a 10% market share of all cryptocurrencies - possibly by orders of magnitude. With every percentage point increase in Bitcoin's share of market capitalization (using the old economists ceteris paribus trick) adding USD 4,600 to its fundamental value it is not hard to understand some of the seemingly more extreme price predictions. (A 50% market capitalization would imply a fundamental value north of USD 200,000).

Regards the final assumption, the ratio of virtual currencies to fiat currencies held by the public, this is the one we are least confident in guessing. The total market capitalization of all cryptocurrencies stands at 0.48%. Our 10% ratio *feels about right* but even if we assume that we are too bullish and cut it in half, to 5%, it would still imply a fundamental value for Bitcoin of around USD 23,000 assuming all of the other assumptions are unchanged. (FYI: The break-even cryptocurrency/fiat currency ratio based on today's Bitcoin price would be 3.5%).

To reiterate, the point of this exercise is not to generate precise valuation estimates for Bitcoin - that is practically impossible. It is to provide a practical framework for thinking about how to value Bitcoin, or any other cryptocurrency for that matter. Plugging in assumptions that appear reasonable (at least to us) generates numbers that exceed current prices, demonstrating that it is far from certain that, even with frothy investor sentiment and recent exponential price gains, Bitcoin is in a bubble.

That said, if we are not in a bubble yet, we are sure there will be one in the end. As Didier Sornette noted in his working paper referenced in footnote 5 above a bubble starts with a new opportunity or expectation, which could be a ground breaking new technology or access to a new market. Bitcoin, and the other cryptocurrencies, qualify on both counts and in that sense are ideally suited to bubble price dynamics -we just might not be at that point yet due to the fog relating to how to fundamentally value them.

Finally, as discussed, short-term we see Bitcoin's price dynamics being driven by a sentiment battle. Longer-term the battle will be between investors in the cryptocurrency world and governments loath to give up their monetary sovereignty. Media headlines already make clear that policymakers are becoming concerned about their usage[16] and in a recent CNBC interview Jamie Dimon (hardly a fan given his previous comments on Bitcoin[17]) said,

"No government will ever support a virtual currency that goes around borders and doesn't have the same controls. It's not going to happen."

We don't always share Dimon's views on Bitcoin, but on this aspect we think he is spot on. There is a regulatory risk element to consider. However, banning Bitcoin or other cryptocurrencies is far from straight forward given the borderless nature of the internet. To be successful it would likely require co-ordinated action at a global level and such things take time. Moreover, the greater the market capitalization of cryptocurrencies (including Bitcoin) and the wider ownership becomes, the more politically difficult it will be to deal with the losses generated by banning their usage.

In the end perhaps this is why Bitcoin is so important. Not because it could be the latest in a long line of speculative asset price bubbles, but because it represents the bulwark between centralized, hierarchically structured governments and decentralized nonhierarchical networks. We judge it to be the opening salvo in a much more important battle… something deep for you all to ponder over during the holiday period.

Amareos sentiment analytics incorporate Thomson Reuters MarketPsych indices unless otherwise stated.

FOOTNOTES:

[1] See: https://www.amareos.com/financialresearch/the-market-sentimentalist-get-out-of-jail-free/

[2] See: https://www.amareos.com/financialresearch/the-fix-is-in/

[3] See: https://www.amareos.com/financialresearch/the-market-sentimentalist-game-of-brexit/

[4] The other element was that even if a bubble could be identified ex ante, it was unclear that central banks could calibrate monetary policy in such a way as to avoid triggering economic outcomes it was seeking to avoid -
See: https://www.kansascityfed.org/publicat/sympos/2002/pdf/S02Greenspan.pdf

[5] Didier Sornette at the Financial Crisis Observatory has carried out some interesting research looking at the price dynamics in asset price bubbles –
see: https://arxiv.org/ftp/arxiv/papers/1404/1404.2140.pdf

[6] See: https://www.amareos.com/financialresearch/the-market-sentimentalist-bitcoin-bubble-watch/

[7] See: https://www.amareos.com/financialresearch/the-market-sentimentalist-were-going-on-a-bear-hunt/

[8] We had a slight wobble to this bullish assessment in late January when our US equity Fear sentiment indicator ticked up – see: https://www.amareos.com/financialresearch/the-fear-factor/

[9] See: https://www.amareos.com/financialresearch/the-market-sentimentalist-bitcoin-and-beyond/

[10] Several new approaches have been adopted by which to generate a fair value estimate for Bitcoin, which thankfully going beyond its black market usage which was a feature of early valuation models. One of the more interesting methods, was to use Metcalfe's famous law, that the power of the network (any network) increases in proportion to the square of the number of users (or nodes). Although this method generates a relative measure of value for Bitcoin (compared with its own history), it does not really give us a good absolute measure.

[11] See: https://www.amazon.co.uk/Superforecasting-Science-Prediction-Philip-Tetlock/dp/184794714X

[12] Named after the Italian America physicist Enrico Fermi who pioneered it.

[13] See: http://uk.businessinsider.com/nearly-4-million-bitcoins-have-been-lost-forever-study-says-2017-11

[14] Consider this poor chap who accidently threw out his hard drive containing 7,500 Bitcoin private keys and is now considering digging up the local authority landfill site to find the drive worth an estimated USD85 million! – see: http://www.independent.co.uk/life-style/gadgets-and-tech/news/bitcoin-value-james-howells-newport-landfill-hard-drive-campbell-simpson-laszlo-hanyecz-a8091371.html

[15] See: https://www.bis.org/publ/rpfx16.htm

[16] See: https://www.reuters.com/article/us-markets-bitcoin-ecb/eu-must-look-at-regulating-bitcoin-ecbs-nowotny-says-idUSKBN1E51AI?feedType=RSS&feedName=technologyNews

[17] https://uk.reuters.com/article/us-usa-banks-conference-jpmorgan/jpmorgans-dimon-says-bitcoin-is-a-fraud-idUKKCN1BN2KP

THE MARKET SENTIMENTALIST: JAW-JAW OR WAR-WAR?

WEDNESDAY, APRIL 11, 2018

Trade wars are back in vogue.

President Trump has threatened to retaliate to the Chinese retaliation to his decision to sign off on aluminium and steel tariffs on March 8th. The accelerated pace by which the US and China are announcing these unilateral measures (not to mention the increase in the numbers involved – *"I see your USD 50bn, and raise you USD 100bn")* means the escalation of tension between the two economic superpowers is palpable.

Investors think they have seen this playbook before - almost 90 years ago to be exact – and this has had an unsettling effect on global risk markets.

As most people are aware, in June 1930 the US imposed the Smoot-Hawley tariff which set a 20% duty on imports – a move that prompted retaliatory responses from its then largest trading partner, Canada, and several European countries.

For many, this was a key contributing factor deepening and extending the global economic contraction that we now call the Great Depression.

Indeed, as we noted in an earlier Market Insight[1], since the Great Recession plenty of economists have warned about the threat to global trade, and by extension economic growth, from countries resorting to protectionist measures in an attempt to secure their share of the "global economic pie" just as they did 90 odd years before.

Given such precedent, the G20 communiqués after 2009 repeatedly pledged to renounce protectionism. That is, until March last year[2], when Trump's economic team weakened the commitment to one that works...

"to strengthen the contribution of trade to our economies. We will strive to reduce excessive global imbalances, promote greater inclusiveness and fairness and reduce inequality in our pursuit of economic growth."

That last year's communiqué re-write marked the beginning of the end of the international *entente cordiale* over global trade now appears confirmed by the escalation in trade tensions between the US and China.

Given the familiar narrative about protectionism exacerbating the Great Depression, investors are becoming much more circumspect on the economic growth trajectories in the US and China.

This is clearly apparent in our crowd-sourced economic growth sentiments, which until early March were trending higher but have now reversed direction – see exhibit below.

Exhibit 1: Crowd-sourced Economic Growth Sentiment – US and China

Source: www.amareos.com

In terms of the speed and depth of the sentiment reversal, it is considerably greater in China than in the US, indicating the global crowd believes the impact to be more damaging to the former than the latter. This likely reflects the more open nature of the Chinese economy, meaning it is more vulnerable to a downturn in global trade, as well as the significant fiscal stimulus programme the US is embarking on, which will serve to mitigate any drag from external sources.

Certainly, we think these arguments carry more weight with the public than Trump's flippant suggestion on Twitter that for debtor nations like the US, trade wars are "good and easy to win".

Looking at US bilateral trade balances, it is easy to see why China is the focal point for the Trump administration. It is the single largest contributor to the economy's USD 800bn annual trade deficit. Moreover, even when one extends the definition beyond goods – the primary target of the tariffs - to include services, where the US runs a sizeable surplus vis-à-vis the rest of the world (USD 240bn last year), China is still a long way out in front with a bilateral surplus of USD 340bn per annum.

Importantly, China has been running a large bilateral trade surplus with the US for many years and President Trump, rightly in our view, considers the sustained nature of this external imbalance to be of equal importance.

That said, if we look at the other countries with sustained and significant bilateral trade surpluses vis-à-vis the US (excluding Mexico's whose bilateral trade numbers are not reliable because of re-exports), second after China is Germany followed by Japan. Taking into account their relative economic size, these external surpluses are not a million miles away from China's in magnitude. China's bilateral trade surplus for the US equates to 2.8% of its nominal GDP, the equivalent figure for Germany is 1.8% and 1.1% for Japan.

Consistency of policy – admittedly not something one readily associates with President Trump – suggests the US should also consider tariffs against German and Japanese exporters. Indeed, Peter Navarro, head of the White House National Trade Council – a forum established by President Trump after his election victory – and who appears to be making a comeback in terms of influence in the administration, has made just this point many times in the past.

As the tortured nature of the Brexit negotiations have made all too plain, when it comes to the EU, trade issues are decided at the supra-national level, meaning that if the US wanted to apply sanctions against Germany, it would have to apply it to all EU member states and any retaliatory action that followed would be at the EU level.

The optics of such a move, especially in light of the continued deterioration in political relations with Russia[3] – a topic we covered in a recent Market Insight[4] – are far from great. Yet, in the event that neither the US nor China backs down it is hard to see how the EU will be able to avoid getting dragged in as well.

Such perceptions could explain why EU and German crowd-sourced economic growth sentiment have also taken a bit of a hit over the past few weeks – see exhibit below. (NB: Japanese economic growth sentiment has also taken a tumble).

Exhibit 2: Crowd-sourced Economic Growth Sentiment – EU and Germany

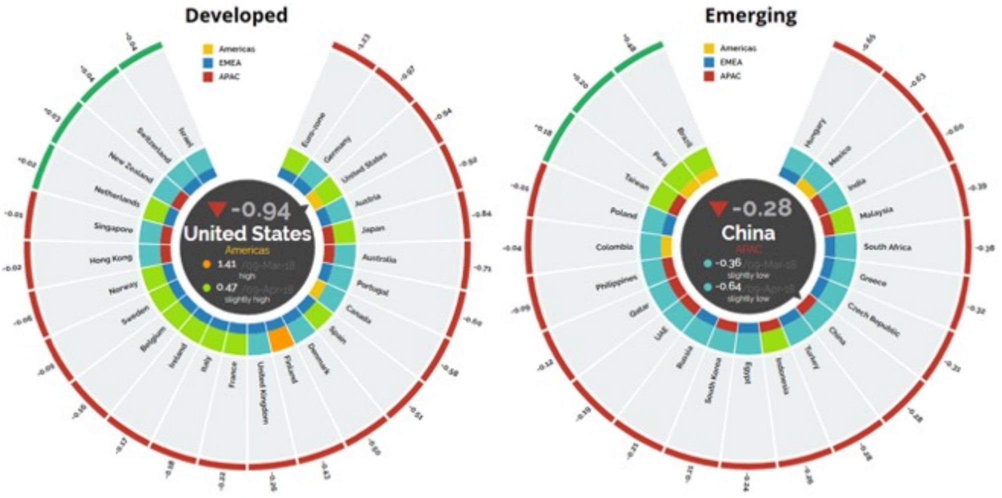
Source: www.amareos.com

In short, our crowd-sourced sentiments indicate that global growth dynamics remain synchronized, but not in a positive direction as was the case just several weeks ago. Rather, it is starting to look more like a broad-based swoon.

Concomitant with declining positivity in relation to economic growth in the leading economies, the evolution of crowd-sourced future inflation sentiment (a proxy for private sector inflation expectations) shows a clear disinflationary tang.

The dominant colour in the outermost circle in the exhibit below is predominantly red, which occurs when future inflation sentiment has fallen over the last calendar month (the magnitude of the change is shown by the corresponding figures).

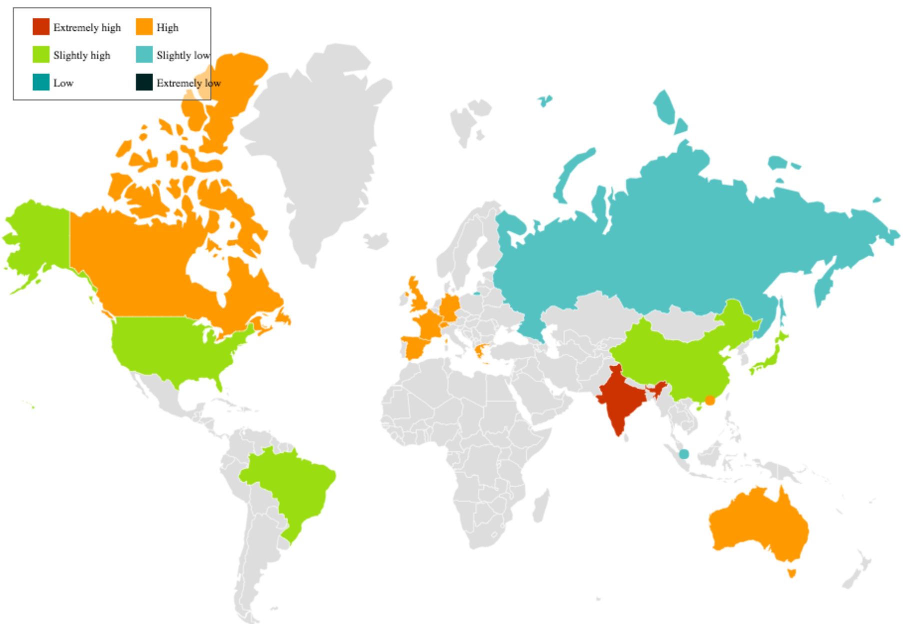
Exhibit 3: Crowd-sourced Future Inflation Sentiment Momentum



Source: www.amareos.com

The public's collective perception of the emerging macroeconomic environment, namely one of softening economic growth and disinflation, is not obviously conducive to supporting global stock markets, which have been struggling since late February – the underperformance of the market-leading tech sector (for reasons entirely unrelated to the macroeconomic situation[5]) has certainly not helped.

Exhibit 4: Global Equity Sentiment Heat Map



Source: www.amareos.com

When we look at crowd-sourced sentiment towards global equity markets, the mood is still fairly constructive, with most standing above their long-run averages which we view as equating to neutral – see exhibit above.

What this snapshot does not convey, however, is the momentum of crowd sentiment has, like economic growth and inflation sentiment, rolled over in a number of countries. The outermost ring in the exhibit below, which plots the change in equity market sentiment over the past month is predominantly red, indicative of fading positivity. A combination of still elevated, but declining, crowd sentiment towards equities constitutes a near-term headwind for stocks.

Exhibit 5: Global Equity Sentiment Momentum

Source: www.amareos.com

What about government bonds?

One would naturally expect them to be the more favoured asset, especially as the change in public perceptions about the macroeconomic landscape could encourage the Fed to moderate the pace of its monetary policy normalization – interest rate futures markets are already anticipating a slightly less hawkish Fed[6].

Generally, this perception would be correct. However, there are some concerns that China could use its substantial USD 1.8tr holdings of US government paper - the capital account offset to its sustained bilateral surpluses with the US - as a “financial weapon of mass destruction”.

(Rumours in mid-January that China was considering stopping purchases of US government bonds, subsequently denied by officials, caused a Treasury market wobble).

This sounds like a credible threat, but in reality it isn't. China is unable to wreak havoc in the US Treasury market for fairly simplistic reasons.

China has accumulated large holdings of US government paper as a direct result of a mercantilist policy, which deliberately short-circuited the natural tendency of the RMB to appreciate in the face of large external surpluses helping to sustain them and the positive growth impetus. Selling its US Treasury holdings and repatriating the proceeds back into RMB would put its currency under massive appreciation pressure. Not only would this effectively undo all of their previous policy efforts, it would put additional, considerable, strain on a key sector of their economy being targeted by the US via tariffs. Not an obvious winning strategy.

If anything, the bias of the Chinese to increased trade tension would be to weaken their currency (media reports suggest a gradual RMB depreciation is being considered) to support the external competitiveness of its export sector. To the extent that currency weakness is not the result of market forces, such action would require increased official purchases of USD-denominated financial assets including, quite probably due to the depth of market liquidity, US Treasuries.

Of course, China could convert the proceeds from scaling back its US Treasury holdings into other US financial asset classes – equities, cash or real estate. However, it is difficult to see much merit in such actions.

If the Chinese were to make the asset allocation shift in a manner designed to inflict as much pain as possible on the US government bond market ie. swiftly, then real estate would be too illiquid to absorb the resultant inflows.

Publicly traded equities are more liquid, and therefore a more attractive alternative[7]. However, a Wall Street rally triggered by Chinese official buying (or the expectation of it by investors seeking to front-run official inflows) would seem to be a very strange way to punish the US in a trade war. Moreover, the US administration would be very sceptical of a sizeable uptick in Chinese ownership of its companies (the definition of strategic assets would, we suspect, become rather wide).

As for cash, it is just a perpetual government bond with a lower yield than a Treasury (zero in fact). An asset, we should add, the Fed would be more than happy to supply in any amount. After all, how does one think the Fed, an institution that has fine-tuned its bond market interventions during its QE years, would react to a surge in US government bond yields triggered by the actions of a foreign government whose aim is to undermine confidence in its financial markets? Sitting quietly on the side lines doesn't seem at all likely.

The other options for China would be to convert their USD proceeds into other liquid currencies, such as the EUR, GBP or JPY, or gold (we think cryptocurrencies are an obvious no no). Given the magnitude of the portfolio shift, the slippage to China would be substantial in fiat currencies and tremendous in the yellow stuff.

Moreover, the implied sharp appreciation of the destination currencies would be very poorly received. One of the key lessons of the Great Depression is that at times of global economic stress, currency weakness is a valuable offset and European and Japanese governments are more than well aware of this. In fact, in an echo of the Great Depression, capital controls could make a comeback in the event of a trade war to deal with volatility arising from sizeable international portfolio flows[8]. (This may seem like an anathema to the EU's free movement goods/labour/capital objectives, but as we learned in 2013 with Cyprus[9] when the integrity of the single market is viewed by the region's policymaking elite as being jeopardized all bets are off.)

Such considerations do not mean that it could not happen. It could. But one has to ask, why China would risk antagonising other key export markets by actions that have a limited detrimental effect on their original target, the US. It doesn't make much sense, economically or politically.

The absence of an effective Chinese economic "nuclear policy option" against the US, combined with the obvious damage a trade war would inflict on a key sector of China's economy, plus President's Trump well-known penchant for tough negotiation tactics, has many market professionals convinced that, while noisy in the short-run, the two leaders will follow the advice of the great Sir Winston Churchill and will not turn "jaw jaw" into "war war"[10].

The optimists may be right, and given the increasing cautiousness towards the global macro backdrop shown by our crowd-sourced sentiment indicators, this confidence would be rewarded by the fillip global risk assets would experience by any agreement.

However, even if the current trade spat does end benignly, longer-term we can't help thinking that this episode will, with the benefit of hindsight, be viewed as another wobbly step down the inevitable path to conflict between the US and China – an outcome we discussed at length in an earlier Market Insight[11].

Amareos sentiment analytics incorporate Thomson Reuters MarketPsych indices.

FOOTNOTES:

[1] See: https://www.amareos.com/financialresearch/the-market-sentimentalist-zero-sum/

[2] See: http://www.g20.utoronto.ca/2017/170318-finance-en.pdf

[3] Recent events in Syria have only served to heighten yet further the tension.

[4] See: https://www.amareos.com/financialresearch/the-market-sentimentalist-media-trials-part-one/

[5] See: https://www.amareos.com/financialresearch/the-market-sentimentalist-media-trials-part-2/

[6] Although two more 25bp rate hikes by year-end remains the median expectation the probabilities for three or more hikes have been steadily declining over the past month - see: http://www.cmegroup.com/trading/interest-rates/countdown-to-fomc.html/

[7] China holds some US equities but it is dwarfed by their holdings of US government paper - see: http://ticdata.treasury.gov/Publish/slt1d.txt

[8] See: https://voxeu.org/article/great-depression-recovery-role-capital-controls

[9] See: http://europa.eu/rapid/press-release_IP-13-298_en.htm

[10] Like many quotes, the attribution of "Jaw-jaw is better than war-war" to Churchill is not entirely accurate. He was the original source of the words, but it was another British PM, Harold Macmillan, who actually uttered the phrase four years after Churchill.

[11] See: https://www.amareos.com/financialresearch/the-market-sentimentalist-winter-is-coming/

THE MARKET SENTIMENTALIST: CAUGHT SHORT

THURSDAY, MAY 10, 2018

"There's a bull market somewhere" is an old market saying. Over recent years, driven by a global economy flush with central bank liquidity, it is tempting to substitute the "somewhere" with "everywhere".

The perception that all of the major asset classes are fundamentally expensive is widespread with many investors struggling to find value in equities (developed and emerging), bonds (government and private) or real estate.

We are certainly sympathetic to such views and also recognise, and understand, worries that with central banks turning off – or signalling their intention to turn off - the liquidity tap, the uptrend in global asset prices could be corrupted.

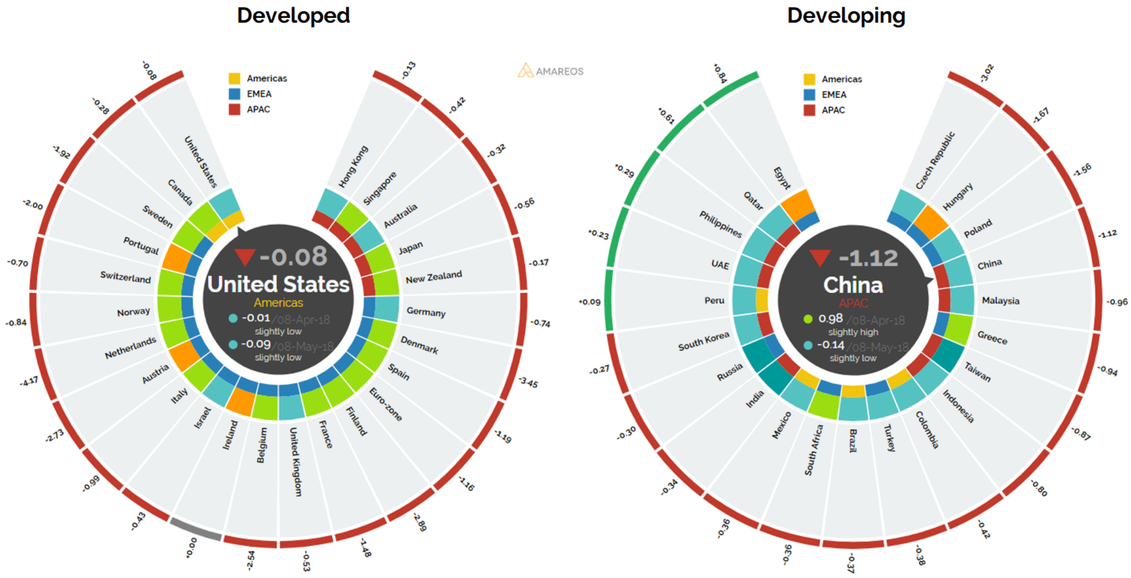
That said, as we have made clear on many occasions, overvaluation is not a reliable tool for timing when markets are about to undergo a significant correction. This hasn't stopped investors from establishing some rather sizeable shorts in some assets.

From our highly unscientific scan of the financial media, two stand out to us – longer-dated US government bonds and Tesla shares (two assets that have very little in common, aside from current investor positioning). The logic behind these shorts appears compelling but does this mean they will be winning bets?

As we discussed in a previous Market Insight[1], our crowd-sourced sentiment indicators suggest public confidence towards the global economic recovery is faltering. Since we published that report a month ago, this decelerating undercurrent has, if anything, strengthened.

Updating the charts showing how economic growth sentiment has evolved over the past month, amongst developed economies all of those we track are now falling (indicated by the outer most ring being coloured red – see exhibit below). Whereas growth sentiment in developing economies has proved more resilient, the outer most ring is still predominantly red.

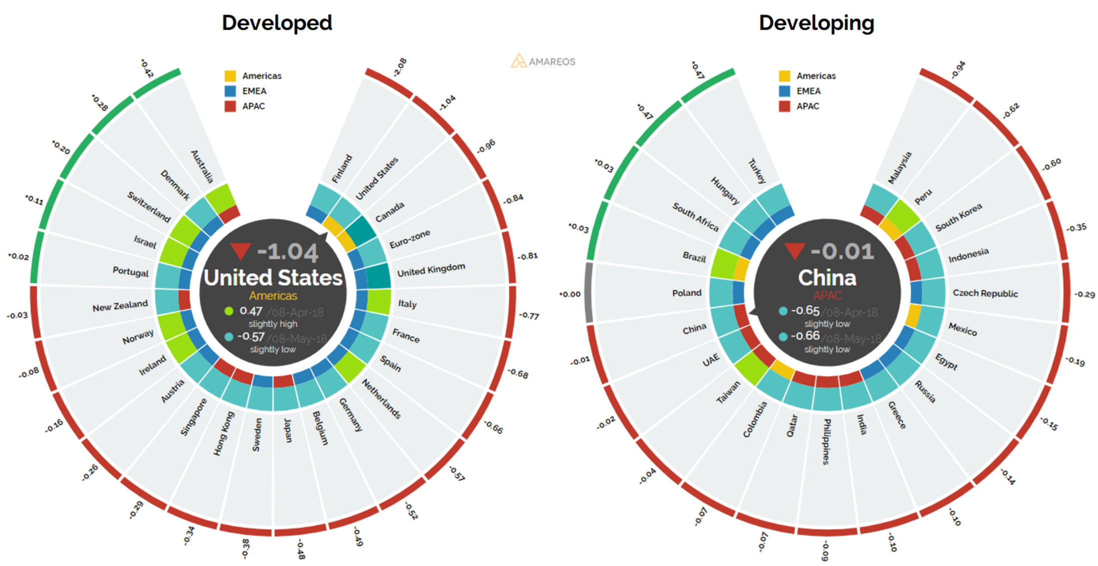
Exhibit 1: Crowd-sourced Economic Growth Sentiment



Source: www.amareos.com

Concomitant with this increased negativity towards global economic growth prospects, inflation outlook sentiment – our sentiment-based proxy of inflation expectations – has also been wilting. The number of countries where inflation sentiment has fallen over the past month may not be as widespread as it is in relation to economic growth, nevertheless, it is a tangible change.

Exhibit 2: Crowd-sourced Inflation Outlook Sentiment



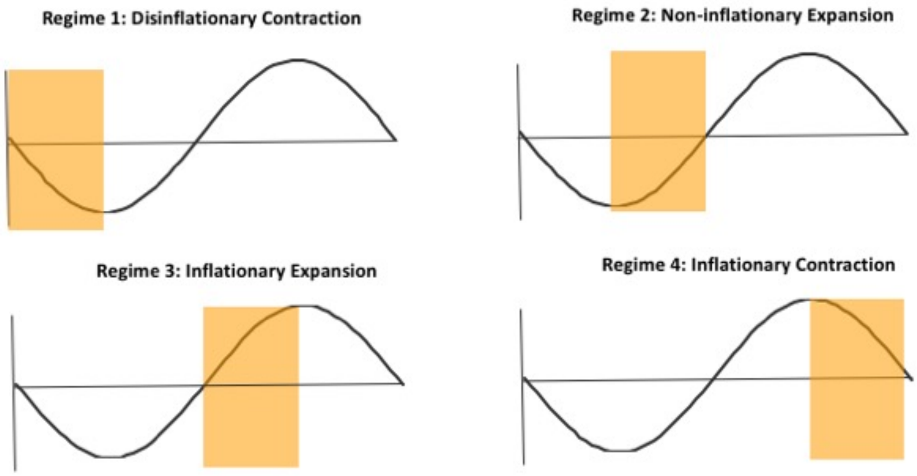
Source: www.amareos.com

The macroeconomic picture suggested by our crowd-sourced sentiment indicators is therefore one of decelerating economic growth and an abatement of rising price pressures.

Translating this into a standard business cycle regime framework, this would equate to Regime 4, with the prospect of Regime 1 not too far off in the distance – see exhibit below.

Naturally, one expects asset price return characteristics to be markedly different between these four business cycle regimes and our preliminary work on our sentiment-derived business cycle regime classifier bears out such expectations.

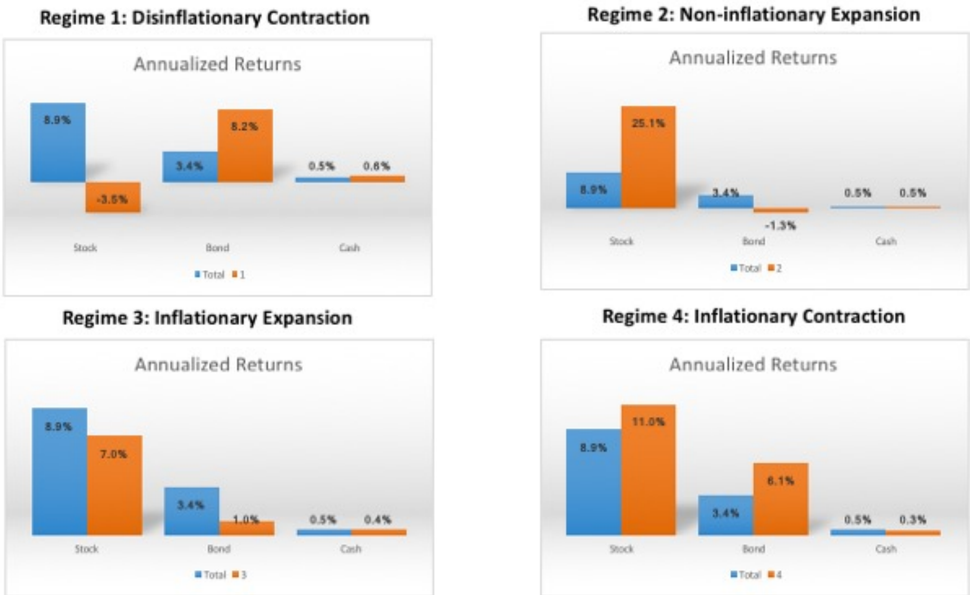
Exhibit 3: Stylized Business Cycle Regimes



Source: www.amareos.com

Given we are using crowd-sourced sentiment indicators to identify the regime, as opposed to more standard macroeconomic variables such as GDP growth, PMI surveys or inflation indicators, we only have data to identify the business cycle regime since 2008. With this caveat in mind, the exhibit below shows the average annualized return by asset class in each of the four regimes.

Exhibit 4: Asset Class Returns By Regime (2008)



Source: www.amareos.com

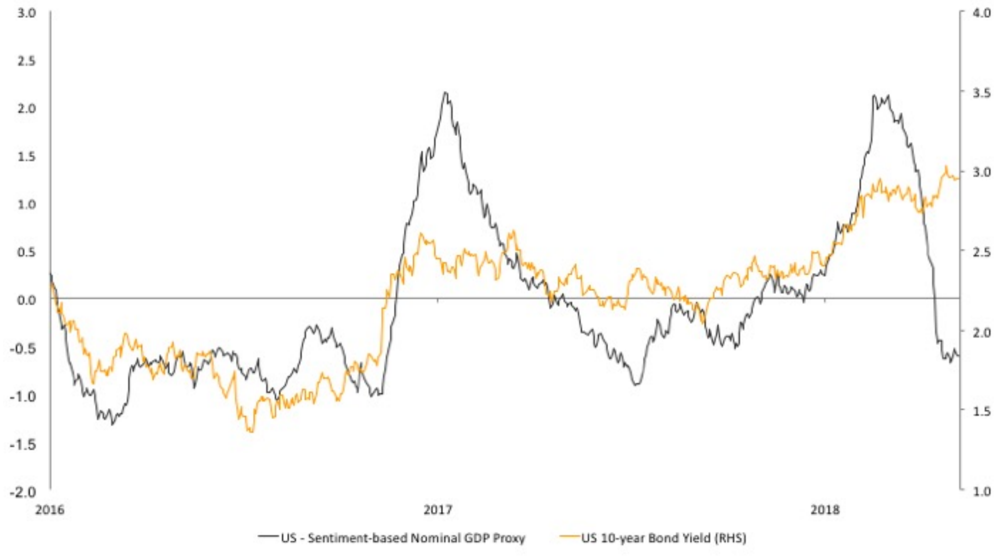
The least amount of variance between the four regimes was in money market returns - an unsurprising result given the extremely accommodative monetary policy stance adopted via the Fed throughout much of the period in question.

Between the other two asset classes, there was a more pronounced divergence in performance. As expected, stocks did best in the early stages of the economic expansion (Regime 2) whereas government bonds did best during the contraction phases (Regimes 4 and 1).

The only surprise to us was that equities also fared well in Regime 4 – a macroeconomic mix that does not readily appear to be favourable. Aside from potential sample size issues – always a problem when using new alt-data sources – one possible explanation is that although there were several instances when crowd confidence in the post Great Recession recovery faltered, they each proved short-lived. Most likely this was because for much of the period in question the close proximity of the target Fed funds rate to the zero lower bound made the Fed unusually sensitive to downside risks boosting investor confidence in the equity market friendly “Yellen put”.

As the exhibit below illustrates, our crowd-sourced economic growth and future inflation sentiments (aggregated up to form a sentiment-based nominal GDP proxy) typically move in sync with the nominal 10-year US Treasury yield.

Exhibit 5: Crowd-sourced US Growth Sentiment Vs. 10 Year Yields



Source: www.amareos.com

With US economic growth and inflation outlook sentiments having dropped sharply, the clear implication is that public perceptions about the US macroeconomic situation have moved to a more bond-friendly regime (4, or possibly even 1[2]).

Lending weight to this assessment, our crowd-sourced sentiment towards US equities has also seen a very significant drop in positivity over recent weakness – see exhibit below. In level terms, sentiment towards the S&P500 is best described as neutral, but the momentum of sentiment change is very negative, indicating that the balance of risk is tilting in favour of a downside break in the S&P500.

Exhibit 6: Crowd-sourced Sentiment – S&P500

Source: www.amareos.com

In direct contrast to the indications from our crowd-sourced sentiment indicators, CFTC data show speculative shorts in the US 10-year Treasury note future at a record high[3]. This suggests that a fairly significant number of investors are positioned for the much-anticipated bear market in US government bonds (3% yields in the ten-year segment of the curve – a level the market has been flirting with recently - has been a major focal point).

Such positioning could, of course, reflect non-cyclical factors not captured by our sentiment data. These include potential offloading by Chinese official accounts as part of the US trade war (we discussed, and dismissed, this threat in the Market Insight referenced in footnote 1 above) and/or worries about possible forced selling of government bonds by risk parity funds to respect their target portfolio parameters in the event of a major downturn in stocks. It could also be driven by perceptions that the Fed's reaction function has changed under Chairman Powell and US central bankers are less inclined to err on the dovish side.

All are possible.

However, even if these are motivating factors, the drop in US macroeconomic sentiment suggests the bond bears face significant cyclical headwinds[4]. On balance, therefore, we would caution that now is probably not the best time to have a large short position on in US Treasuries.

Turning to the other *"significant short"* that attracted our interest recently – Tesla.

We last wrote about Tesla's stock price about a year ago[5] when the stock was trading around USD330, warning that the near doubling in the electric car company's share price during the first half of 2017 was no longer being matched by rising crowd positivity. On this basis, we considered that the share price correction had further to run. Although Tesla's share price is 10% lower today than when we wrote the article (it was 20% lower in the aftermath of Musk's recent, let us be polite, and "unusual" earnings call), given the stock managed to hit record highs in the interim it was a painful ride.

As we acknowledged in the aforementioned research note, Musk is very much a corporate evangelist and he attracts considerable attention in the media. He is, in other words, a character. The problem though with having an adoring public is that they can be a very fickle beast.

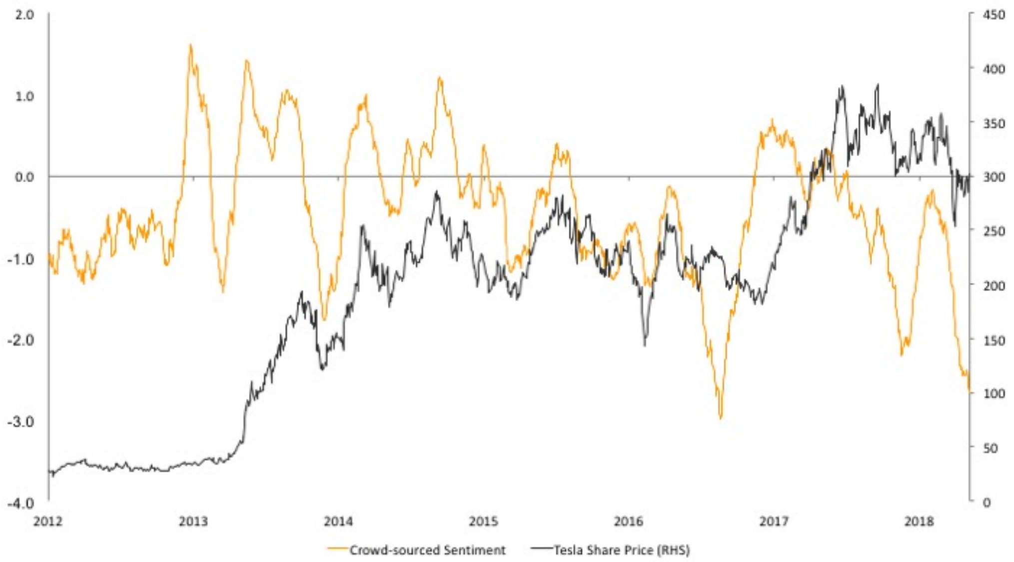
On the back of several accidents one of which proved fatal[6], and amid delays in ramping up Model X/S production, the financial segment of crowd has become decidedly bearish on the stock's prospects. Indeed, after the May 3rd conference call short interest in Tesla stock hit more than 40 million – the biggest short in the US stock market.

Like the US Treasury short, the rationale behind the trade appears compelling. In addition, to repeated failure to hit production targets, mainstream car producers are set to release a slew of electric cars onto the market over the coming years - companies with stronger financial reserves than Tesla which continues to burn cash at a rate of USD 6,500 per minute according to Bloomberg estimates.

Such concerns about Tesla's long-term future (Musk has always been about "buy the dream" – see his tweet in the aforementioned research note) many consider its share price to be fundamentally overvalued. Indeed, we recently saw one hedge fund analyst estimate its fair value at zero. (Musk's April Fools' joke tweet used in the feature image above did little to defuse such speculation).

Consistent with such bearish perceptions, crowd sentiment towards Tesla has slumped this year and is now extremely negative. In fact, the only time it has been lower was in August 2016. (The near doubling in Tesla's share price over the following 12 month was a classic illustration of our "crowd fail"[7] concept).

Exhibit 7: Crowd-sourced Sentiment - Tesla



Source: www.amareos.com

Given the outstanding Tesla stock available to short via inclusion in stock lending programmes is estimated to be around 6.5 million shares compared with a cumulated short position of around 40 million[8], and given the extreme pessimism being expressed by the crowd towards the company, it is clear which is the weaker side of the market at the moment ie. a move higher is Tesla's share price would constitute a pain trade[9].

Moreover, with Musk having announced he purchased almost USD 10mn of Tesla stock earlier this week, and using his Twitter account to publicly display a combative mood (see exhibit below), just like Treasuries now it is probably not the best time to have a large short position, irrespective of what you think about the company's underlying fundamentals.

Exhibit 8: Musk In Combative Mood

Source: twitter.com

Amareos sentiment analytics incorporate Thomson Reuters MarketPsych indices.

FOOTNOTES:

[1] See: https://www.amareos.com/financialresearch/the-market-sentimentalist-jaw-jaw-or-war-war/

[2] This may seem like a dramatic shift relative to where economic data indicate we are in the US business cycle, but bear in mind the input data is where the crowd "thinks" the economy is going not where it is presently.

[3] See: https://www.cftc.gov/MarketReports/CommitmentsofTraders/index.htm

[4] Even if the Fed's pain-threshold is higher under Powell than Yellen, it still has one and faced with a marked downturn in growth/emerging disinflationary forces and an equity market on the slide, at a minimum we would expect a dialling-down of the monetary policy normalization rhetoric. We discussed this aspect of Fed policy in a previous Market Insight – see: https://www.amareos.com/financialresearch/market-sentimentalist-no-pain-no-gain/

[5] See: https://www.amareos.com/financialresearch/the-market-sentimentalist-musings-on-musk-tesla-and-ai/

[6] See: http://www.bbc.co.uk/news/world-us-canada-43604440

[7] See: https://www.amareos.com/financialresearch/outsmarting-the-crowd/

[8] See: https://www.barrons.com/articles/tesla-almost-out-of-stock-for-short-sellers-1525467892?mod=yahoobarrons&ru=yahoo&yptr=yahoo

[9] See: https://www.amareos.com/financialresearch/pain-trades/