Market Murmurations and 60 Million Frenchmen

In This Issue:

- Anticipating Anticipation - Pg. 6
- Global Macro View - Pg. 13
- Gold - Pg. 22
- Dollar - Pg. 27
- Micro: ROAD- Pg. 30
- Bonus Charts - Pg. 34

One of the coolest things to watch in nature is a Starling murmuration.

If you've never seen one before then give this video a watch.

Starlings -- which are small and not particularly intelligent birds -- are somehow able to form these amazingly complex and beautiful airborne systems that are capable of extremely intricate flight patterns which shift and shape with near instantaneous coordination.

They do this apparently in response to threats; to thwart off and confuse predators.

I'm fascinated by systems that display emergent properties such as murmurations. Where a network operating off simple behavioral rules can emerge complex, seemingly intelligent, behavior.

Scientist have long been awed by the same and using the latest technology they've been able to gain a fuller understanding of exactly how Starlings accomplish this.

The following excerpt is from a paper on murmurations by Italian researchers. You can find the whole thing here (emphasis by me).

> **From bird flocks to fish schools, animal groups often seem to react to environmental perturbations as if of one mind…** Here we suggest that collective response in animal groups may be achieved through scale-free behavioral correlations… This result indicates that behavioral correlations are scale free: The change in the behavioral state of one animal affects and is affected by that of all other animals in the group, no matter how large the group is. **Scale-free correlations provide each animal with an effective perception range much larger than the direct interindividual interaction range, thus enhancing global response to perturbations.**

Scale-free correlations mean that the noise-to-signal ratio in a Starling murmuration does not increase with the size of the flock.

It doesn't matter what the size of the group is, or if two birds are on complete opposite ends. It's as if every individual is linked-up to the same network.

The Starlings accomplish this feat by following very simple behavioral rules. *Wired* magazine notes the following:

full velocities

velocity fluctuations

> At the individual level, the rules guiding this are relatively simple. When a neighbor moves, so do you. Depending on the flock's size and speed and its members' flight physiologies, the large-scale pattern changes.
>
> It's easy for a starling to turn when its neighbor turns – but what physiological mechanisms allow it to happen almost simultaneously in two birds separated by hundreds of feet and hundreds of other birds? That remains to be discovered, and the implications extend beyond birds. Starlings may simply be the most visible and beautiful example of a biological criticality that also seems to operate in proteins and neurons, hinting at universal principles yet to be understood.

A Starling murmuration is a system that is said to always be on the "edge". These are systems that exist in what's called a "critical state" and are always, at any time, susceptible to complete total change.

Wired writes that Starling murmurations are “systems that are poised to tip, to be almost instantly and completely transformed, like metals becoming magnetized or liquid turning to gas. Each starling in a flock is connected to every other. When a flock turns in unison, it’s a phase transition.”

What are the benefits of this emergent behavior?

The broader effective perception range combined with their existing in a constant state of criticality, provide Starlings with a strong competitive advantage for survival. The Italian researchers conclude that:

> *Being critical is a way for the system to be always ready to optimally respond to an external perturbation, such as a predator attack as in the case of flocks.*

Individual Starlings operating off their own simple self-interested rules in aggregate create a vastly superior “collective mind” that broadens their perception range — and thus information intake — which enables them to operate in a continuously critical state. A state that’s optimal for responding to threats which helps raise their odds of survival.

You might be asking at this point, “Interesting stuff Alex, but what does this have to do with markets?”

Fair question…

Well, isn’t the market just one big collective mind?

Similar to a murmuration, the market is just the aggregation of individual actors operating off simple inputs (prices, data, narratives) in order to try and avert danger (ie, lose money on the way down or miss out on the way up).

Like Starlings, market participants instinctively key off one another. Robert Prechter, the popularizer of Elliott Wave Theory, writes in his book “The Socionomic Theory Of Finance” that:

> **Aggregate investor thought is not conscious reason but unconscious impulsion.** The herding impulse is an instrument designed, however improperly for some settings, to reduce risk.
>
> **Human herding behavior results from impulsive mental activity in individuals responding to signals from the behavior of others**. Impulsive thought originates in the basal ganglia and limbic system. In emotionally charged situations, the limbic system’s impulses are typically faster than the rational reflection performed by the

> neocortex… **The interaction of many minds in a collective setting produces super-organic behavior that is patterned according to the survival-related functions of the primitive portions of the brain**. As long as the human mind comprises the triune construction and its functions, patterns of herding behavior will remain immutable.

These simple inputs create a market that is collectively smarter than its individual constituents. It has a much broader perception range and exists in a critical state (always ready to phase shift from bull to bear regime) which allows it to more ably respond to changes in the environment.

When Stanley Druckenmiller first got into the game, his first mentor Speros Drelles -- the person he credits with teaching him the art of investing -- would always say to him that, “60 million Frenchmen can’t be wrong.”

What he meant by that is that the market is smarter than you. It knows more than you thus its message should be heeded because 60 million frenchmen can’t be wrong…

Druckenmiller often says that, “The best economist I know is the inside of the stock market. I’m not that smart, the market is much smarter than me. I look to the market for signals.”

We’ve known about the wisdom of crowds and the power of collective intelligence ever since Francis Galton — a British statistician and Charles Darwin’s cousin — discovered the phenomena while observing groups of people guess the weight of an ox at a county fair (the individual guesses were far off but the average of all guesses were spot on). There’s since been a significant amount of work done on the topic; *The Wisdom of Crowds* by James Surowiecki is a good summation of it.

But, there are a few key differences between markets and murmurations and the unique impact and limitations of crowd intelligence in financial markets, specifically.

The first is — and this is a big one — that markets are reflexive.

George Soros was the first to discover this truth. He wrote that, “Reflexivity sets up a feedback loop between market valuations and the so-called fundamentals which are being valued.” This means that the act of valuing a stock, bond, or currency, actually affects the underlying fundamentals on which they are valued, thus changing participants perceptions of what their prices should be. A process that plays out in a never ending loop…

This is why Soros says that, “Financial markets, far from accurately reflecting all the available knowledge, always provides a distorted view of reality.” And that the level of distortion is “sometimes quite insignificant, and at other times quite pronounced.”

This means that markets are efficient most of the time except for some of the times when they become wildly not so.

The key driver between low and high distortion regimes are the combined effect of (narrative adoption + price trends + time). These three inputs all work in unison. So when there's a **narrative** that becomes broadly adopted, it drives steady **price trends**, and when these price trends last for a significant amount of **time**, they then drive more extreme **narrative adoption**. And so on and so forth…

This positive feedback loop hits at the *unconscious impulsion herding* tendencies of investors and drives them to focus on trending prices in the act of valuation at the near exclusion of all other factors (ie, earnings, cash flows, valuation multiples etc…).

Most of the time, there are enough competing narratives which drive price volatility and keep the market fairly balanced.

Another major difference is that Starlings aren't aware of the broader complex system they are an integral part of. It's all instincts... evolutionary programming… they turn when the bird next to them does.

Whereas in markets, we can be aware of the system of which we form. We can consciously separate ourselves from the herd and view the whole objectively (at least to the best of our abilities).

This is important. Because as traders, we're in competition for alpha with the rest of the flock. We don't just want to turn when and where the others turn. We want to get to where they're going before them. And to do this, we need to be able to develop a sense for where they're headed…

Which brings us to the lesson I"m trying to impart.

The reason I've been chatting so much about birds, collective intelligence, and reality distortion and all that jazz… is because if we understand the signalling power of certain areas of the market, whether in a low or high distortion regime, we can eschew the need to try and *predict* all together and instead let the market tell us where things are headed.

I was reminded of this while listening to this *Knowledge Project* podcast interview with Adam Robinson. Here's Part 1 and Part 2.

For those of you who don't know him, Adam is a prodigy who "cracked the SAT" and created *The Princeton Review*. He now spends his time thinking, writing, and advising hedge funds on

strategy. He's the penultimate first principles thinker. He shared some of these principles in the above interview which we'll cover now.

To begin with here's Adam summarizing the lens in which he views markets (emphasis by me):

> The fundamental view of investing is that you can figure out something about the world that no one else has figured out. It's a bit like prospecting, right, gold prospecting. You can go out with your pan and find something that no one else has found. Well, the difference between investing and gold prospecting is that gold prospecting, you actually find gold that you can actually go sell, right? If you find a value that no one else has found, what makes you think.... If people are irrational enough to believe that the price of gold is different from what you think it is or should be, what makes you think they're going to become rational tomorrow? There's that great quote by John Maynard Keynes, "Markets can stay irrational longer than you can stay solvent." Good luck with that.
>
> So, there's a third way, and John Maynard Keynes said, "Successful investing is anticipating the anticipation of others."
>
> **My approach to markets is simply this, to wait for different groups of investors to express different views of the future, and to figure out which group is right. I look for differences of opinion strongly expressed, and decide which one is right.**
>
> Whatever else you may think about the world, the world is the product of our thinking. So is the economy. So are our investments. **If you think about it, an investment is nothing more than the expression of a view of the future**. So when you buy Facebook, or you short the dollar yen, or you buy gold or short US Treasuries, you are expressing a view of the future. Your view of the future can be right or wrong, and your means of expression can be right or wrong, but that's what you're attempting to do, right?
>
> So, if you and I were to go to Columbia Business School or Harvard Business School right now and ask the assembled MBA students, "What is a trend?" They wouldn't be able to define it at all. In fact, I don't know that any investor in the world can define a trend. They can define it simplistically like this: "A trend is the continuation of a price series." Yeah, well that's great. What's causing the continuation? Right? And I'll tell you what a trend is—this is an investment trend—actually it's true for all trends. **A trend is the spread of an idea. That's all a trend is. It's the spread of an idea.**

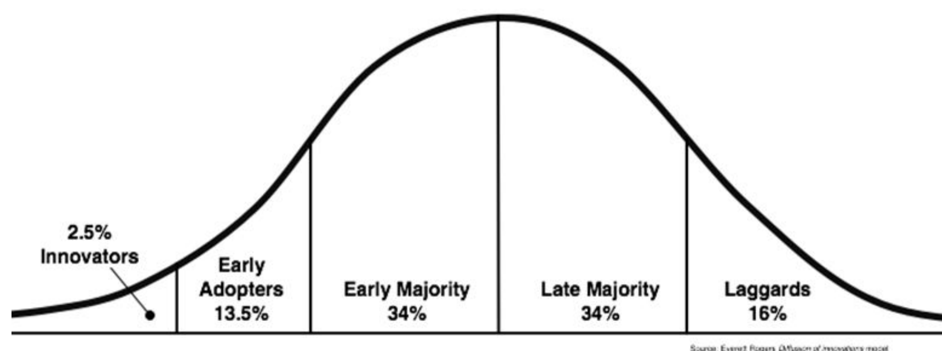
Adam doesn't believe in the existence of intrinsic value but rather views markets as an evolutionary narrative continuum; where stories spawn, develop, spread, only to eventually get outcompeted and then wither and die.

This is similar to what The Philosopher said in Drobny's *The Invisible Hands* which I discussed in my piece on [How To Be a Smart Contrarian](). Here's the Philosopher in his own words (emphasis by me):

> **Market prices reflect the probability of potential future outcomes at that moment, not the outcomes themselves.**
>
> **One way to think about my process is to view markets in terms of the range of reasonable opinions.** The opinion that we are going to have declining and low inflation for the next decade is entirely reasonable. The opinion that we are going to have inflation because central banks have printed trillions of dollars if also reasonable. While most pundits and many market participants try to decide which potential outcome will be the right one, **I am much more interested in finding out where the market is mispricing the skew of probabilities.** If the market is pricing that inflation will go to the moon, then I will start talking about unemployment rates, wages going down, and how we are going to have disinflation. If you tell me the markets are pricing in deflation forever, I will start talking about the quantity theory of money, explaining how this skews outcomes the other way… **People tell stories to rationalize historical price action more frequently than they use potential future hypothese to work out where prices could be**.

Adam references the work done by Everett Rogers in the study of the *Diffusion of Innovations* (Rogers has a book by the same title which is well worth a read). This line of study is about how the adoption of technology spreads but the work really can be applied to how everything spreads: narratives, ideas, social norms etc…

Rogers breaks down the categories of adopters as: innovators, early adopters, early majority, late majority, and laggards.



Well in markets there is a similar breakdown of participants who are consistently early or late to the adoption of narratives and thus trends.

Knowing which groups are which and what their signaling means has been a critical part of Druckenmiller's process over the years. Here's Druck in his own words:

> **One of my strengths over the years was having deep respect for the markets and using the markets to predict the economy, and particularly using internal groups within the market to make predictions.** And I think I was always open-minded enough and had enough humility that if those signals challenged my opinion, I went back to the drawing board and made sure things weren't changing.

Adam breaks down these groups as follows, from earliest trend spotters to later adopters:

1. Metal traders
2. Bond traders
3. Equity Traders
4. Oil Traders
5. Currency Traders
6. Economists
7. Central Bankers

What does this mean in practical terms?

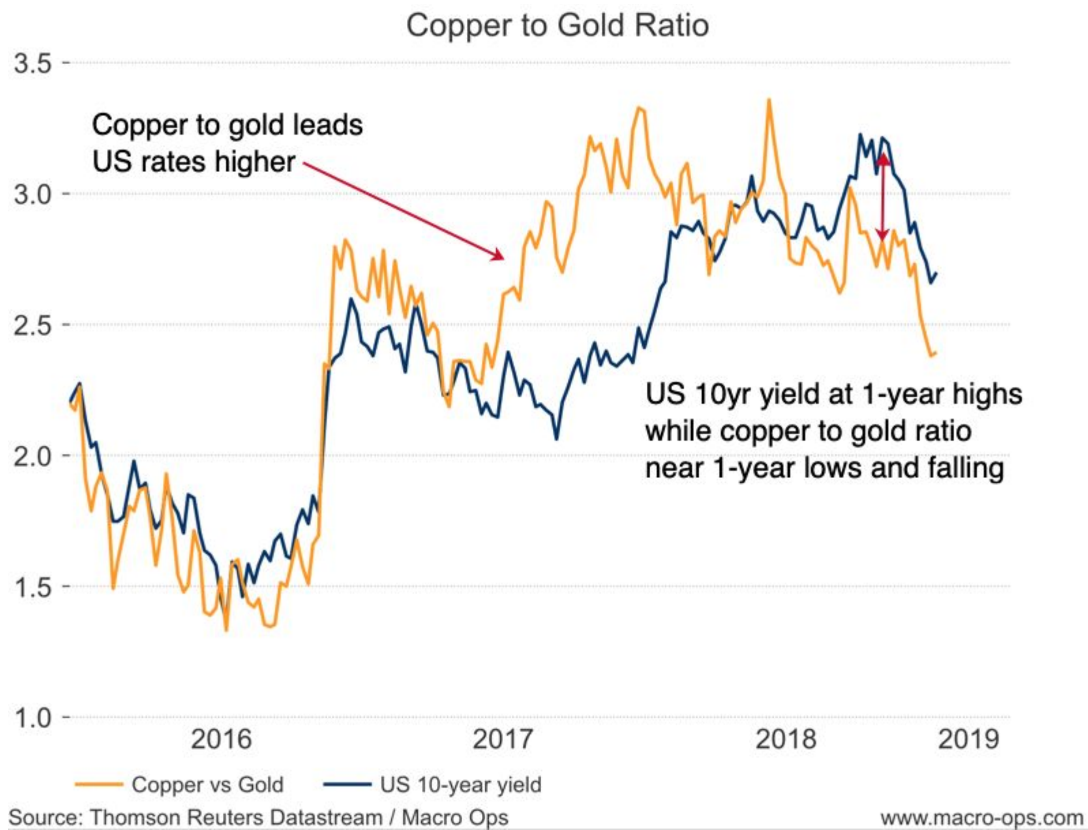
Well, metal traders tend to be the most farsighted of the group. The are usually right and early about changing trends in the economy.

Why is this?

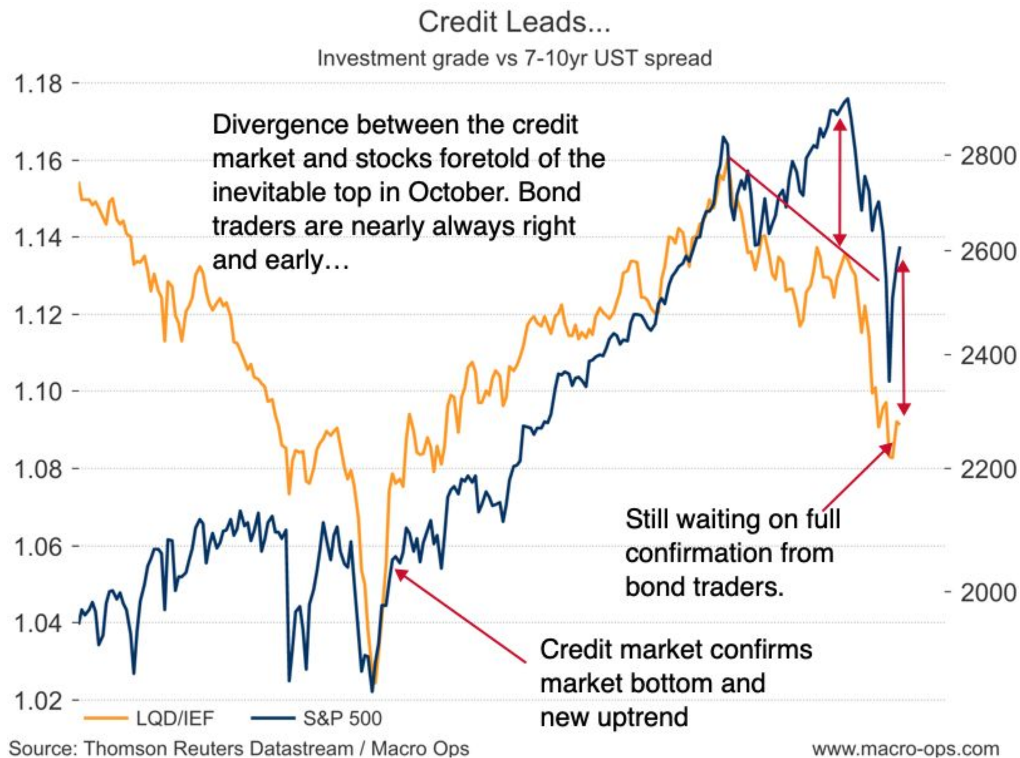
Adam gives three reasons, "The first is, they [metal traders] are the Forrest Gumps of the investing world. Their view of the world is very simplistic. Are people buying copper? And if they are, thumbs up. All is good in the world's economy. Great. I guess interest rates are going higher. That's the way metal traders view the world. And if people are buying less copper, they go, 'Oh, that's bad. Economic slowdown'."

Secondly, "People buy and sell copper. It's used -- it's a thing. It's not just a number on a screen, which is all currency traders look at. Right?" And third is time frame, "Commercial metal traders look months to years ahead. Because if you want to take copper out of the earth, it's going to take years to open that mine, right? So, metal traders are the most farsighted. They have the simplest model of the world, and they are actually in touch with the world economy."

In our November MIR, *China is a Teacup*, we pitched the case for buying US treasuries. One of the reasons why was because metal traders were signalling slowing economic growth ahead and slower growth means lower rates (bonds get bought). The trade was an easy lay up…



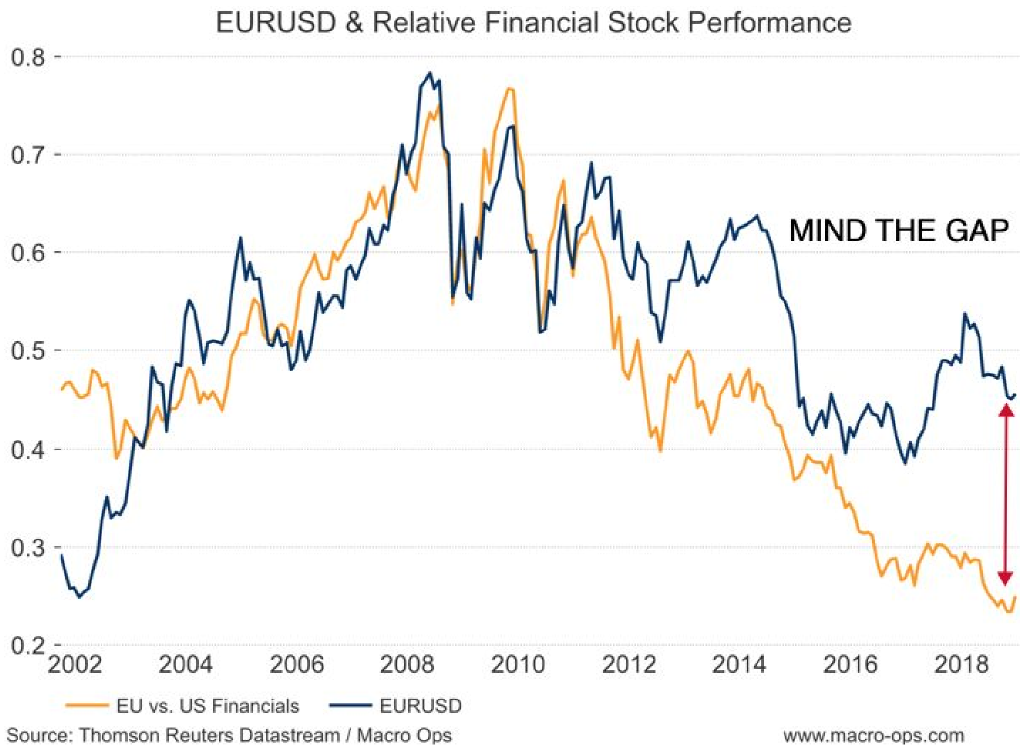
The metals market usually leads the bond market but bond traders lead equity traders and looking at various parts of the credit market can serve as good signal for broader stocks.



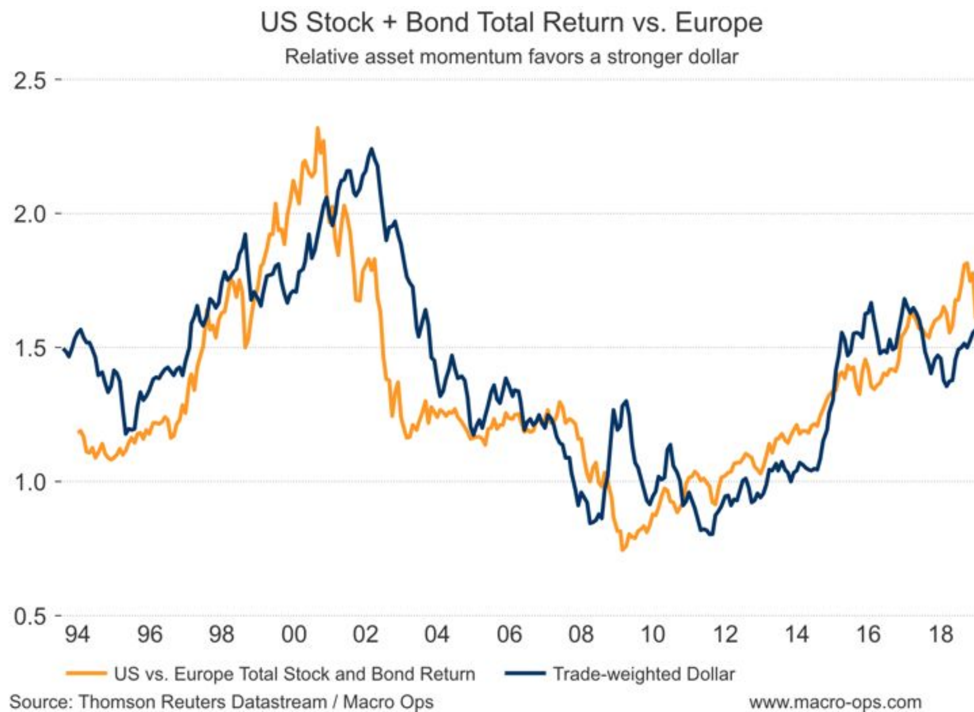
Adam quips that “I will tell you that 19 times out of 20, when those two groups disagree, the bond traders are right and early. They are right and early. When I say 19 times out of 20, really I mean 99 times out of 100. If you want to find out when a stock is going to be in trouble, follow the corporate bonds of that company relative to US Treasuries.”

Speaking of using corporate bonds to see where a company’s equity is headed, well… you Tesla (TSLA) bulls might want to pull up a chart of the company’s traded debt….

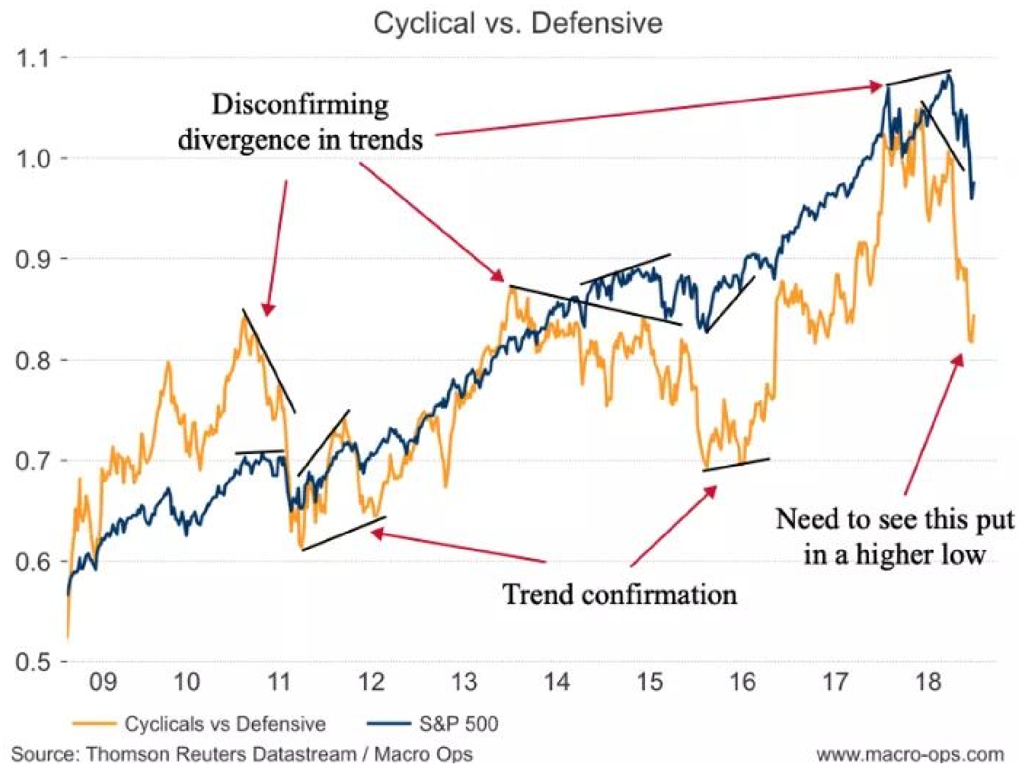
Equity traders are in the middle of the pack and they lead moves in the currency market. FX is driven almost entirely by speculative flows which is why we always write that you need to follow the money when trading currencies. Relative equity market performance is a good indicator of where a currency pair is headed and relative financial stock performance is even better.



You can include both stocks AND bond total returns to get an even better leading indicator of currency pair direction.



We can look at market internals, at things like cyclical vs. defensive stocks (a favorite indicator of Drucks) to get an under the hood look at the underlying risk appetite of market participants. Cyclical stocks, especially front-end cyclicals (think semis, autos, housing etc…), should lead or at least confirm an uptrend. And a divergence typically spells trouble for the broader market.



The last group of traders (the Late Adopters) are oil and currency traders. Both of these are highly speculative markets, meaning positioning and sentiment matter more than fundamentals over the short to medium term and price trends are often self-fulfilling leading to a constant boom/bust cycle.

That's the hierarchy of trading groups and how one can use market internals, as Druck does, to see where the market is about to turn. It's how we can *anticipate the anticipation* of others without trying to predict but rather only needing to track the expression of these different groups of traders and the bets they place. And then using that to figure out which one is more probabilistically right than others and act accordingly.

It's a way for us to leverage the collective intelligence of the market. To stand apart from the herd and look to the leaders to see where things are headed next. It's an easy way to Play the Player…

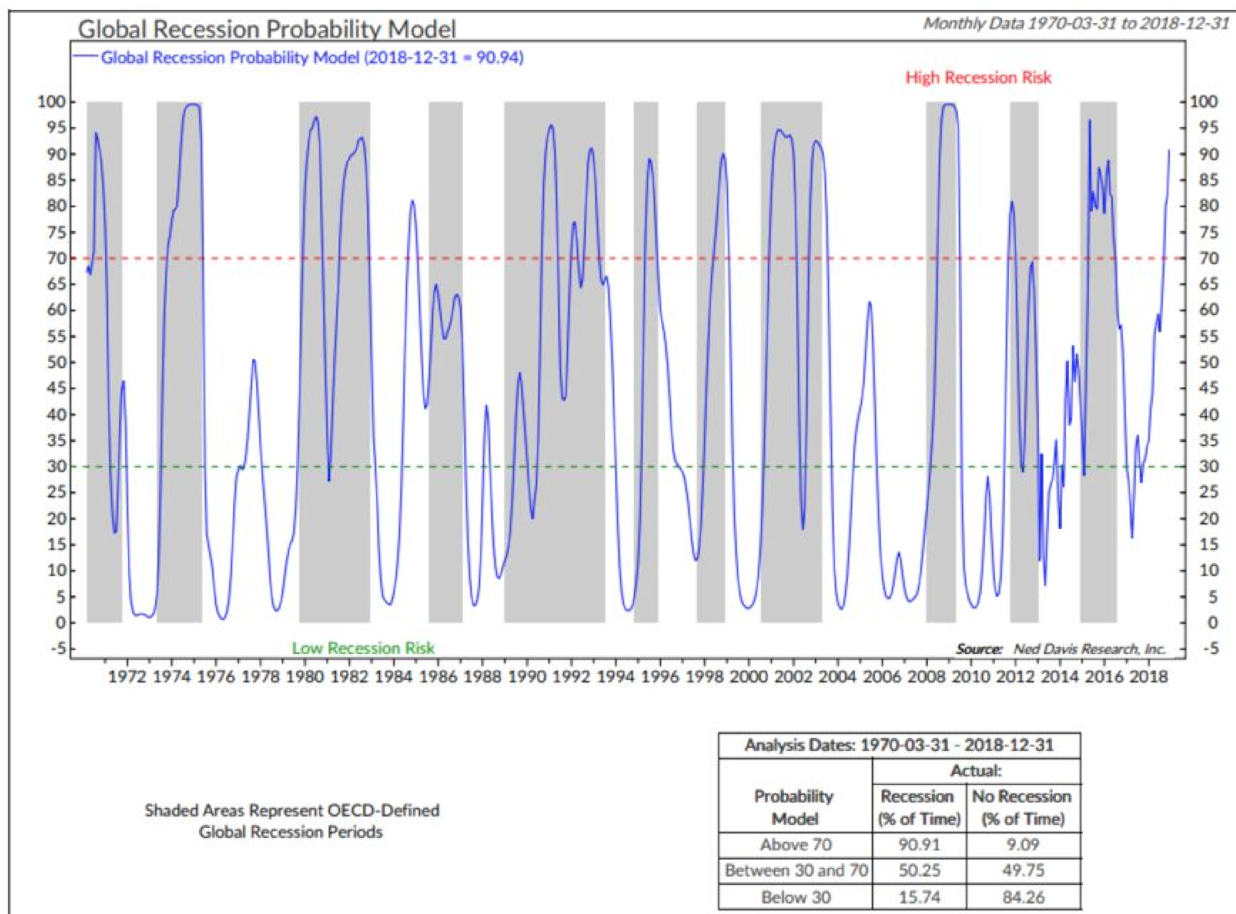
Moving on!

Macro: A Global Recession and a Resilient US

Nothing has changed to our macro view.

Much of the world is currently in recession, with the US being the exception.

The Ned Davis' Global Recession Probability Model is signaling a 91% probability of a global downturn.



Analysis Dates: 1970-03-31 - 2018-12-31		
	Actual:	
Probability Model	Recession (% of Time)	No Recession (% of Time)
Above 70	90.91	9.09
Between 30 and 70	50.25	49.75
Below 30	15.74	84.26

As noted on the chart, since 1970 we've seen a recession 92.11% of the time there's been a reading above 70. **Historically global recessions ex. US last 14-months on average.**

The current global recession started at the beginning of the year, so global markets should begin to recover in the second half of next year. This happens to also be around the time that

we expect the Chinese to unleash a significant amount of stimulus to juice their economy into the run up of the 100 anniversary of the communist party in 2021.

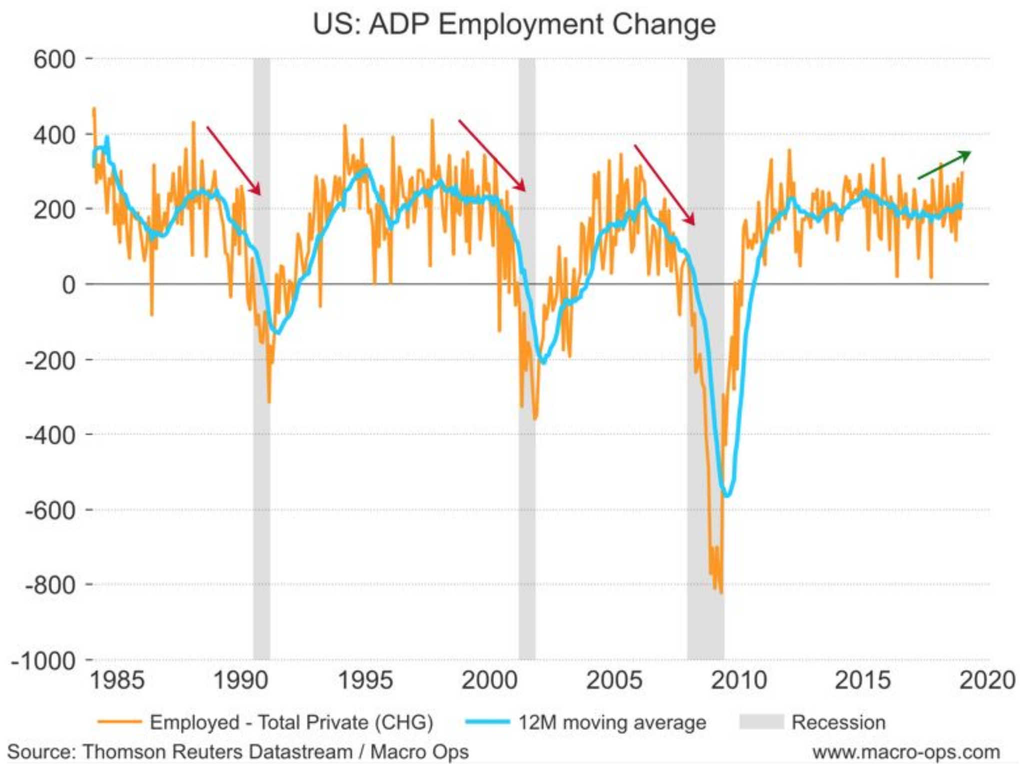
I also expect a new global fiscal stimulus to hit after the first half of 19'. The rise of populism throughout the West, especially in Europe, is driving governments to open their purse strings in order to appease the citizens — we're already seeing this now in France and Italy. This means we should see global liquidity begin to bottom sometime in the first half of 19' and then liquidity will go from a strong headwind for stocks to a tailwind in the second half of the year.

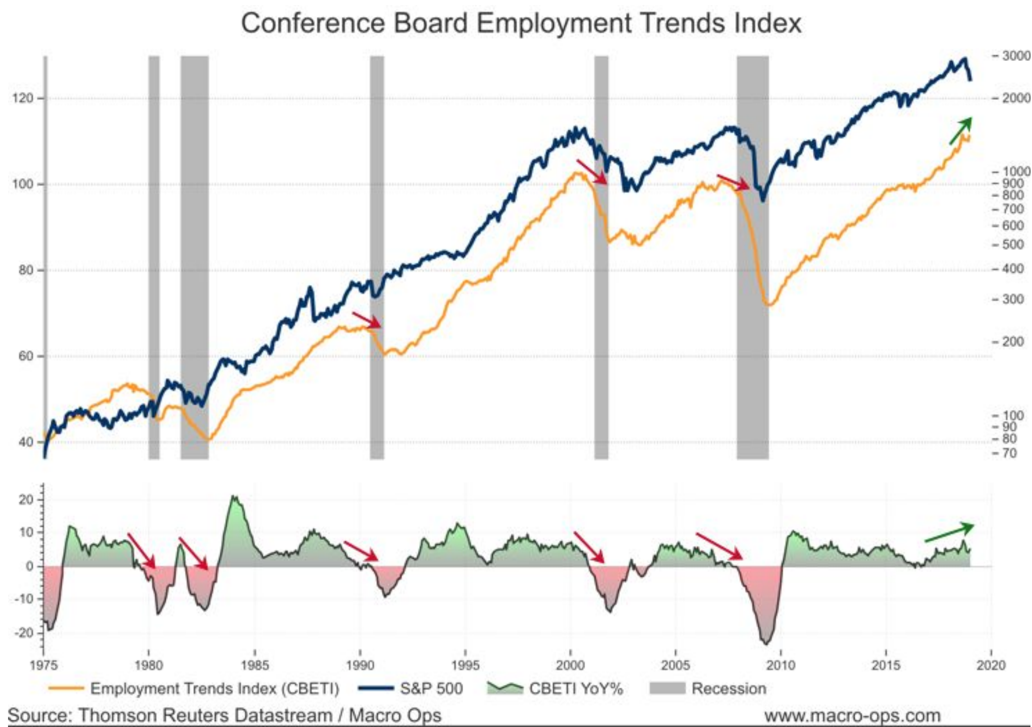
Until then, we should expect more pain ahead for global stocks ex. US. Emerging markets are particularly vulnerable to more downside for the two reasons below:

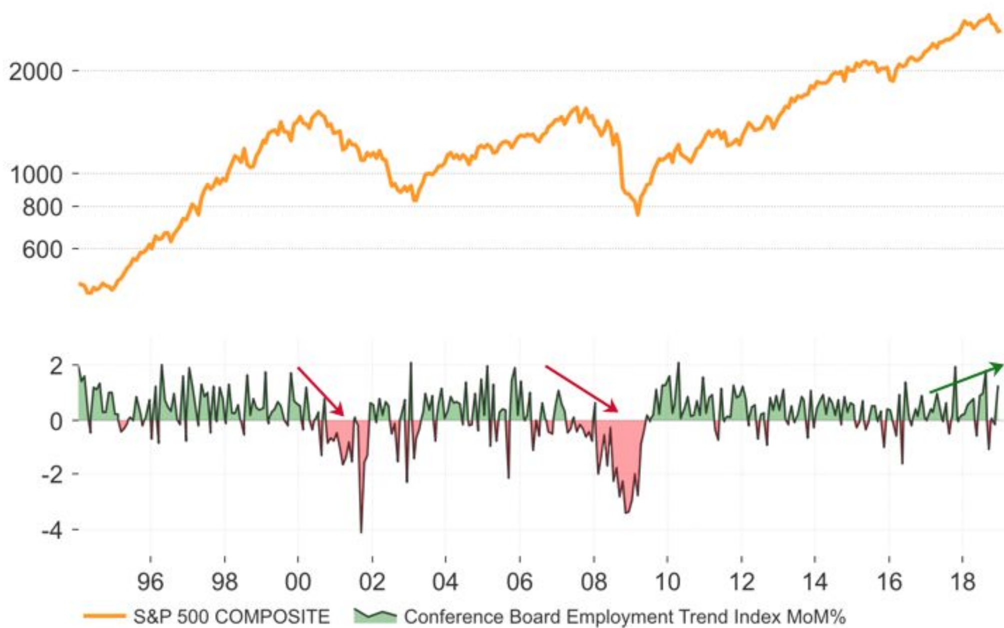
1. China is suffering through a major debt deleveraging and the constraints of its *Gerschenkron Growth Model* (more on that here).
2. Emerging markets in general are Balance of Payment constrained. They've maxed out their share of global exports (an old reliable source of growth for them) and thus are limited by their shallow financial markets and soft currency combo (more on that here).

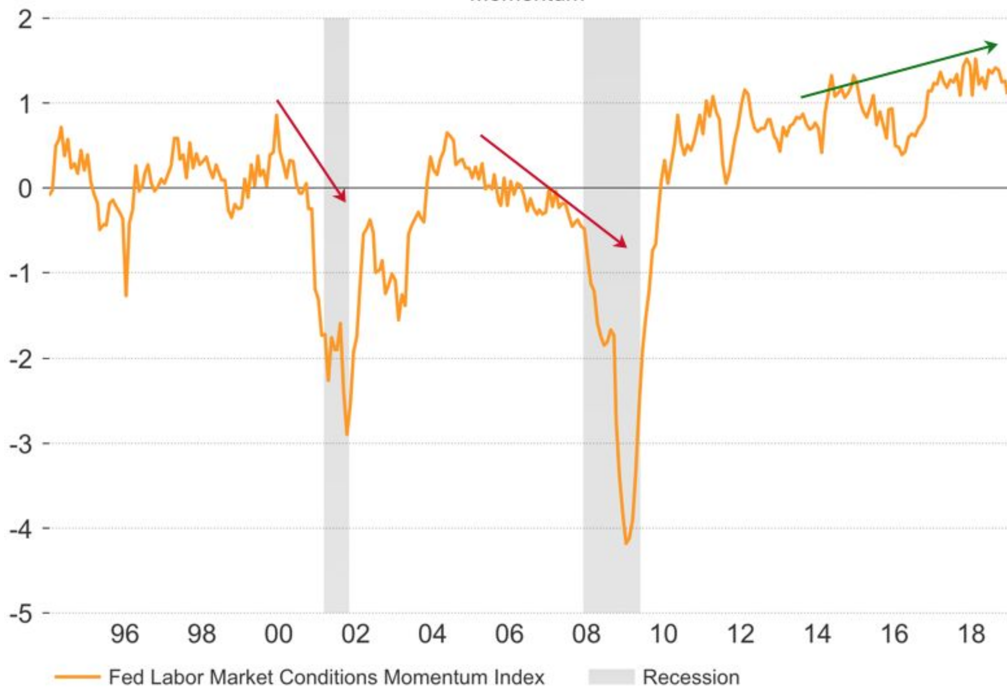
The US will see slower growth and it will likely feel like we're toeing the line of recession but the Fed will respond in kind, with a more shallow rate hike path. This will boost US risk assets and drive the next leg up in the US dollar.

The labor market, which drives consumption growth, remains extremely robust in the US and is a far cry from anything that would indicate a coming recession. Here's a few of the labor market indicators I monitor.


US: ADP Employment Change
600
400
200
0
-200
-400
-600
-800
-1000
1985
1990
1995
2000
2005
2010
2015
2020
Employed - Total Private (CHG)
12M moving average
Recession
Source: Thomson Reuters Datastream / Macro Ops
www.macro-ops.com


Conference Board Employment Trends Index
Employment Trends Index (CBETI)
S&P 500
CBETI YoY%
Recession
Source: Thomson Reuters Datastream / Macro Ops
www.macro-ops.com


Conference Board Employment Trend Index
MoM%
2000
1000
800
600
2
0
-2
-4
96
98
00
02
04
06
08
10
12
14
16
18
S&P 500 COMPOSITE
Conference Board Employment Trend Index MoM%
Source: Thomson Reuters Datastream / Macro Ops
www.macro-ops.com


Kansas City Fed Labor Market Conditions
Momentum
2
1
0
-1
-2
-3
-4
-5
96
98
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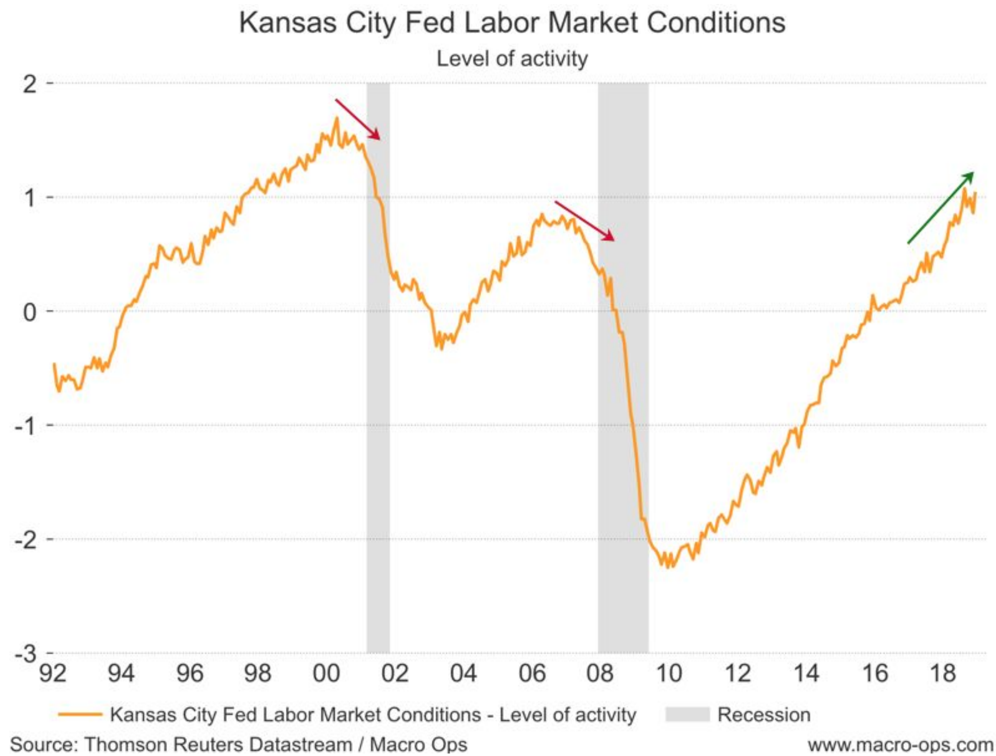
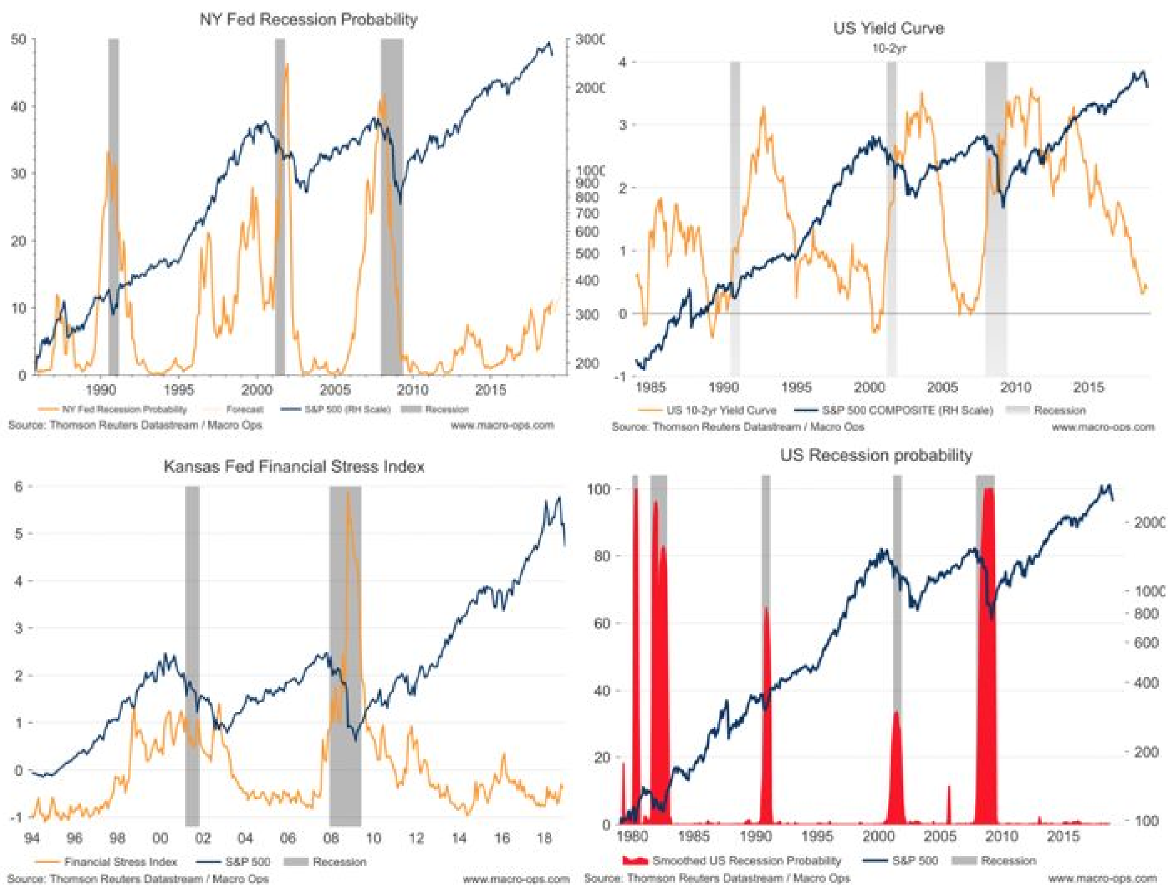
Fed Labor Market Conditions Momentum Index
Recession
Source: Thomson Reuters Datastream / Macro Ops
www.macro-ops.com

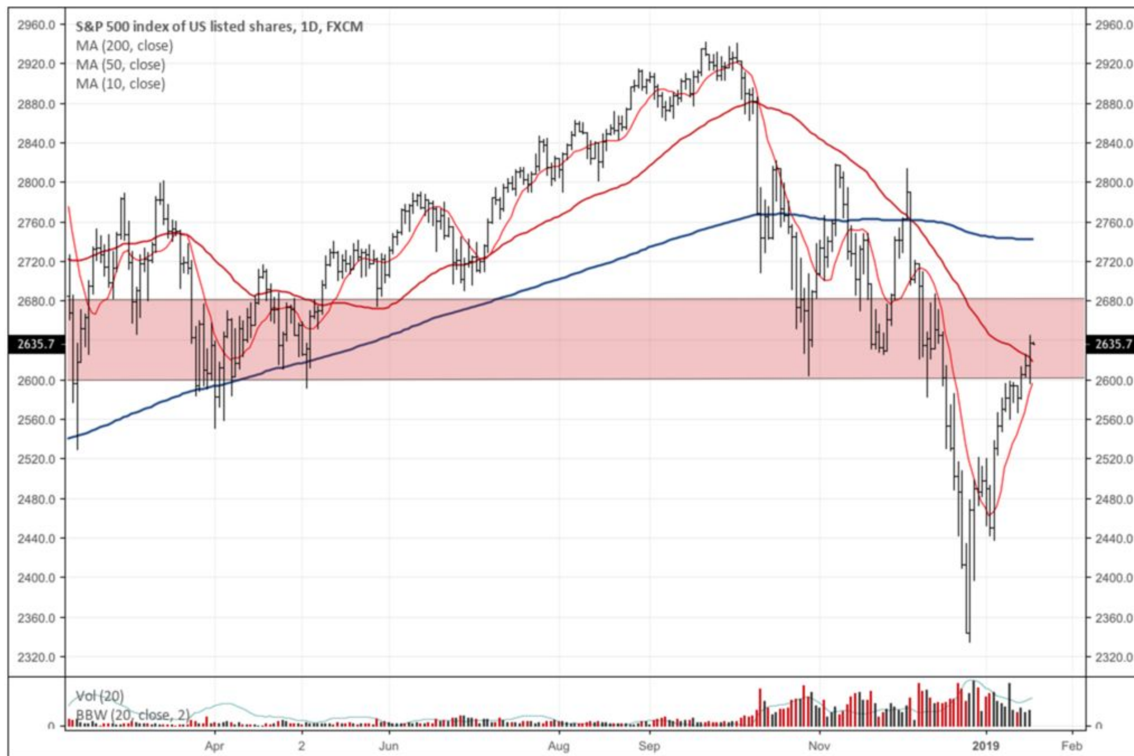


If a recession in the US was imminent then we'd be seeing these roll over and heading lower like they have prior to all past recessions. That's not even remotely the case now which suggests the recent market selloff is probably a correction in an ongoing bull market.

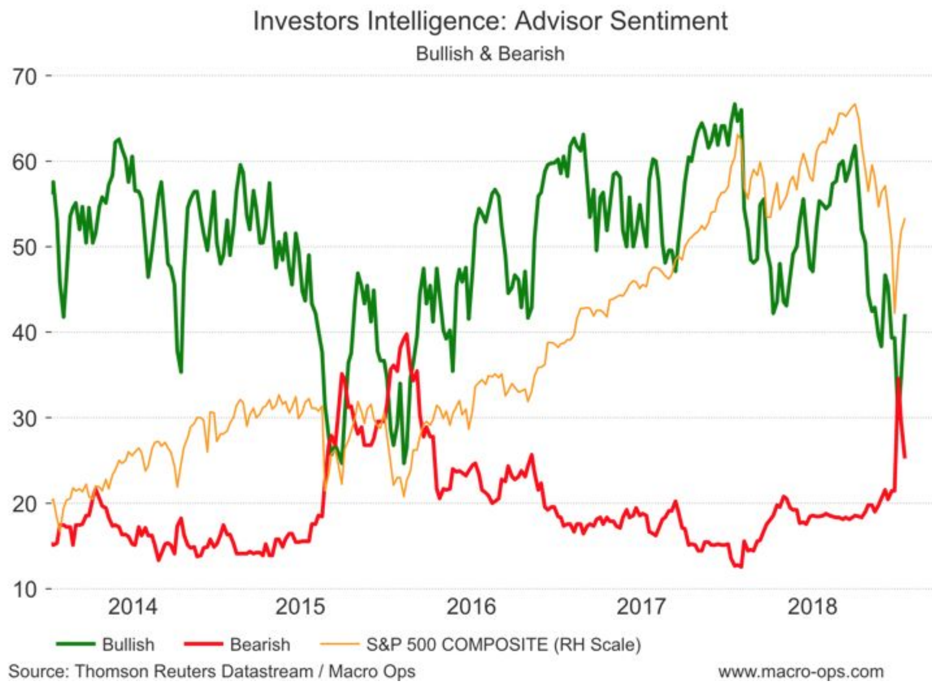
This is also why all of our direct recession indicators are still giving the All-CLEAR.



This means that the last few weeks have provided a good opportunity to begin adding small amounts of risk in select stocks. But the market has swiftly rebounded up into a significant supply overhang (marked by red below). It’s now odds on that we see another leg lower, possibly below the previous low.

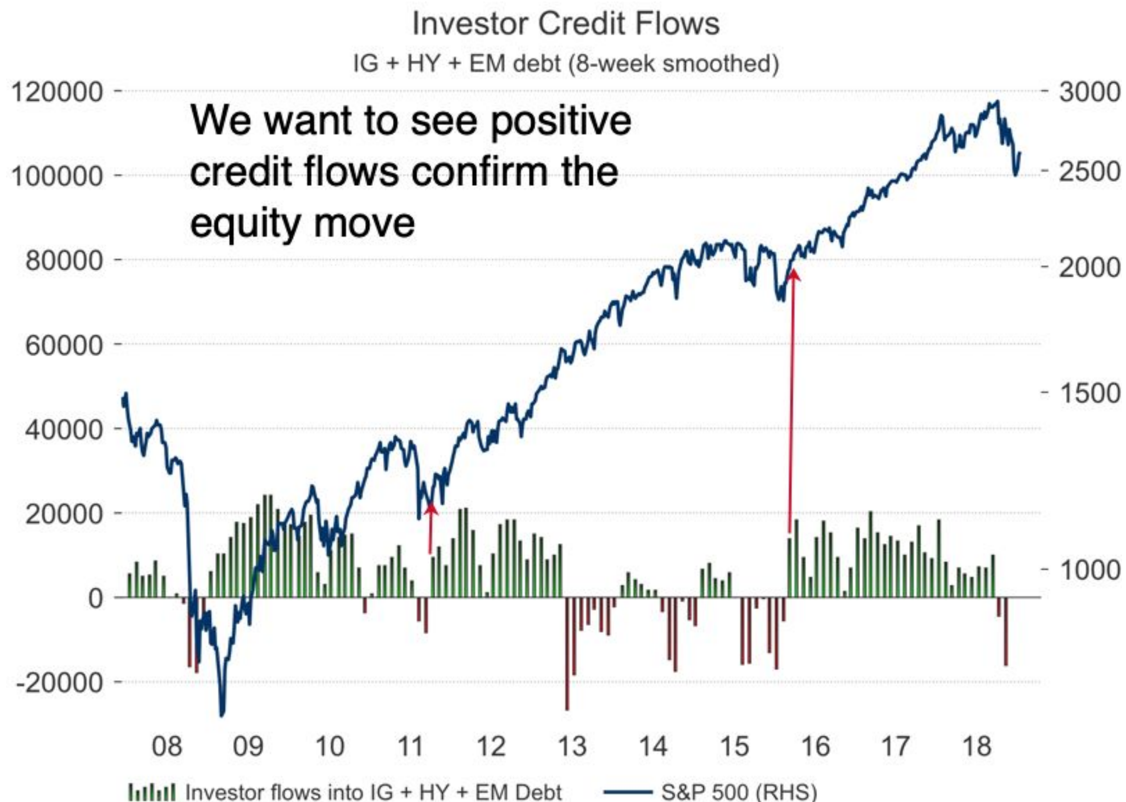


We finally saw the full sentiment capitulation but it's likely this reset isn't complete. Expect more vol and capitulation in the weeks ahead.



Going back to our market internals, we want so see credit (LQD/IEF) and cyclical vs defensive stocks confirm the uptrend in the broader market. This hasn't happened yet.

We can look at credit flows directly. We want to see a reversal to positive inflows to confirm that a bottom in the equity market has been put in. This hasn't happened yet.



And then we want to see a full breadth thrust reversal; from below 0.40 to above 0.60 (marked by red vertical lines). The current breadth actually looks pretty good and we may see this indicator trigger over the coming month.

We think the play over the coming months is to continue to slowly add small amounts of risk in select names, preferably US stocks. While also looking for attractive shorts to hedge market exposure.

In the US, I like a barbell approach to selecting stocks. Picking a mix of both value and growth/momentum names. For growth/momentum, I still like tech stocks that will benefit from the ongoing secular shift to the cloud and which have pricing power. Some of my favorites in this space are BOX, SHSP, CSOD, and MSFT.

For value, I like DIS (our biggest position), Fiat (FCAU), GTX, and ROAD (which we'll cover below).

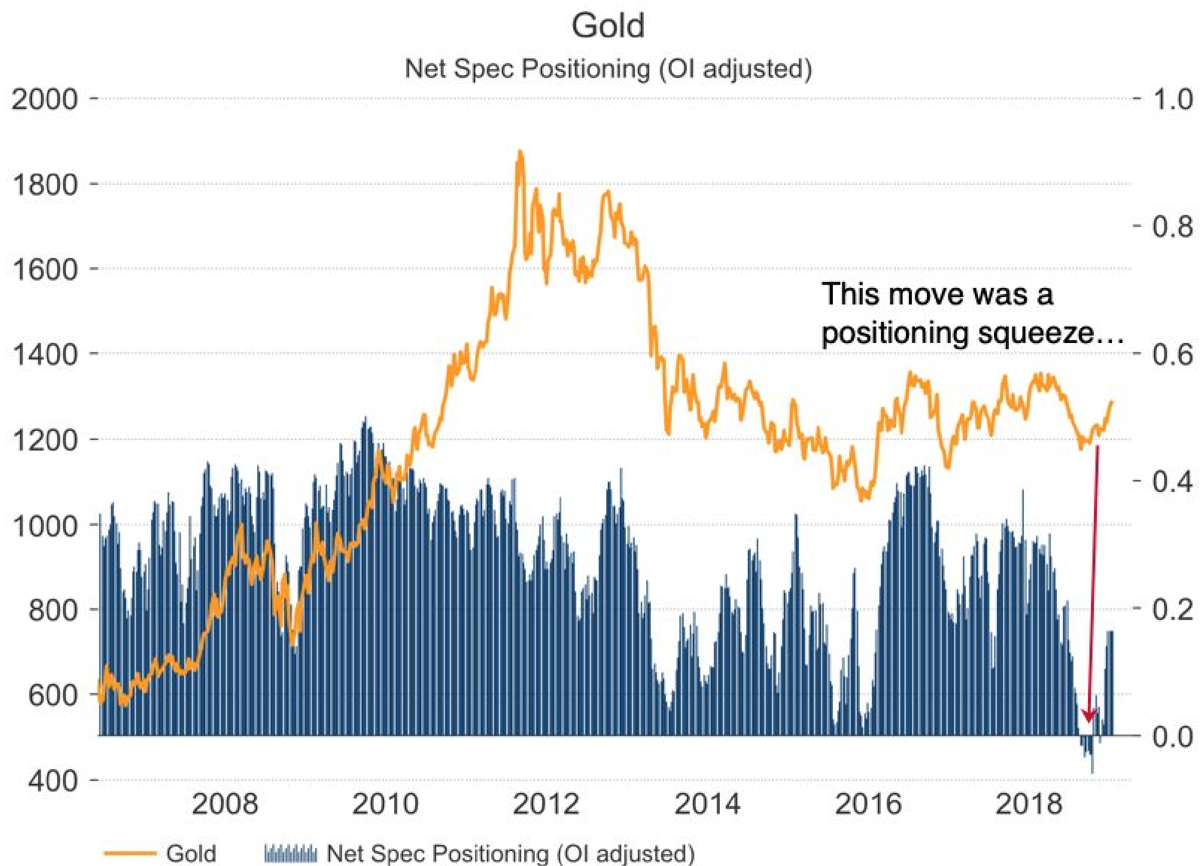
For international stocks, I like iQiyi (IQ) and Grupo Financiero Galicia (GGAL). I view these more as tactical trading opportunities.

GOLD

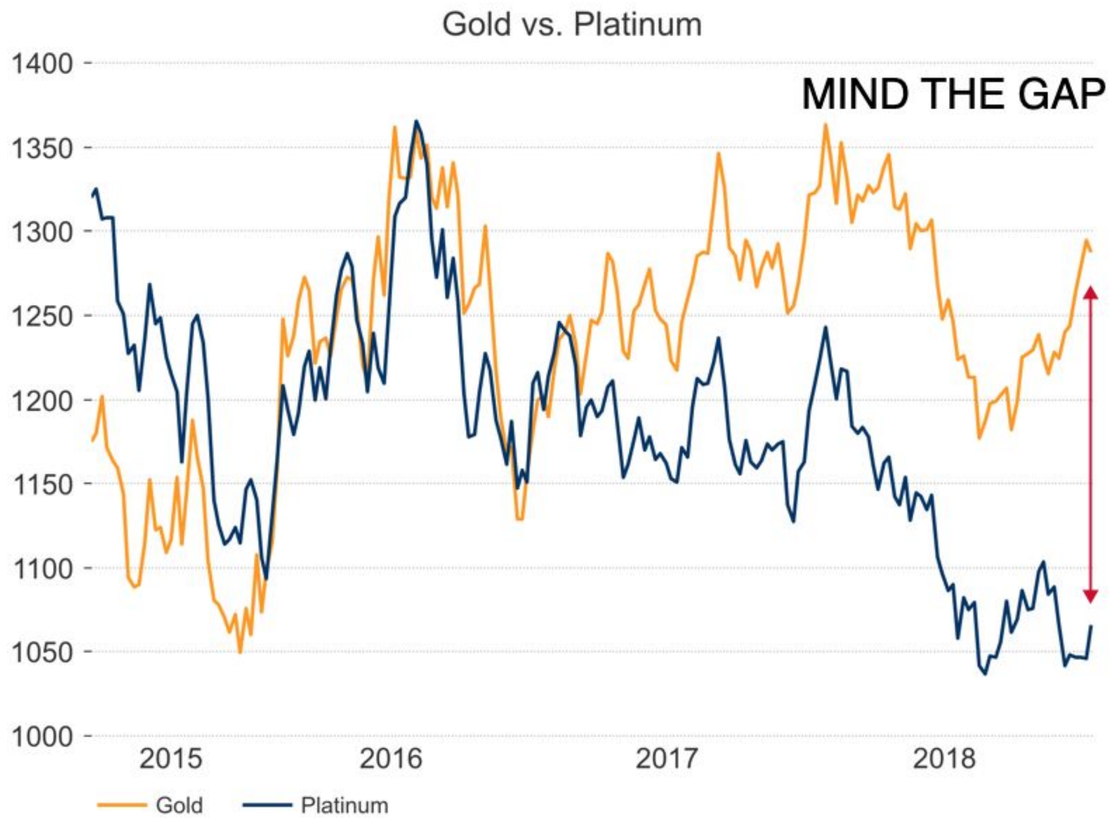
The above gold chart is a weekly. It shows that gold is at a critical inflection point. It's bumping up against long-term resistance in a trend-line and the significant 1,300 level.

Here's a closer look at the chart on a daily.

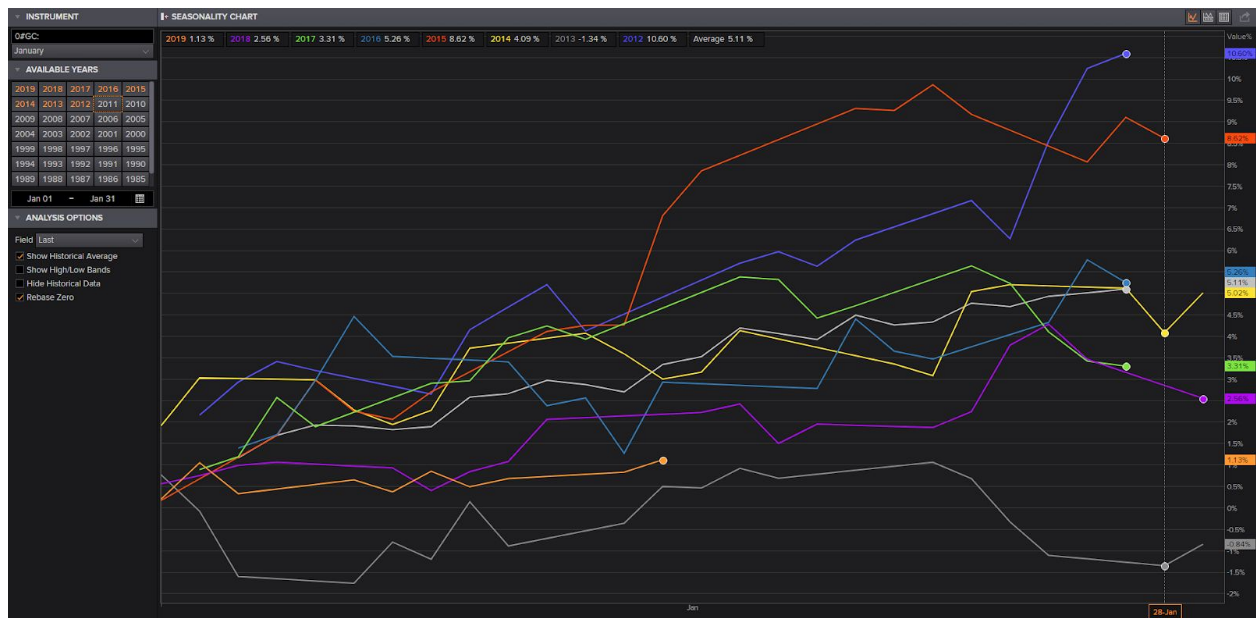
The recent uptrend in gold has largely been driven by a positioning squeeze. Net speculator positioning in gold futures hit its most net short levels in over 14-years. This up move has unwound all that and some…



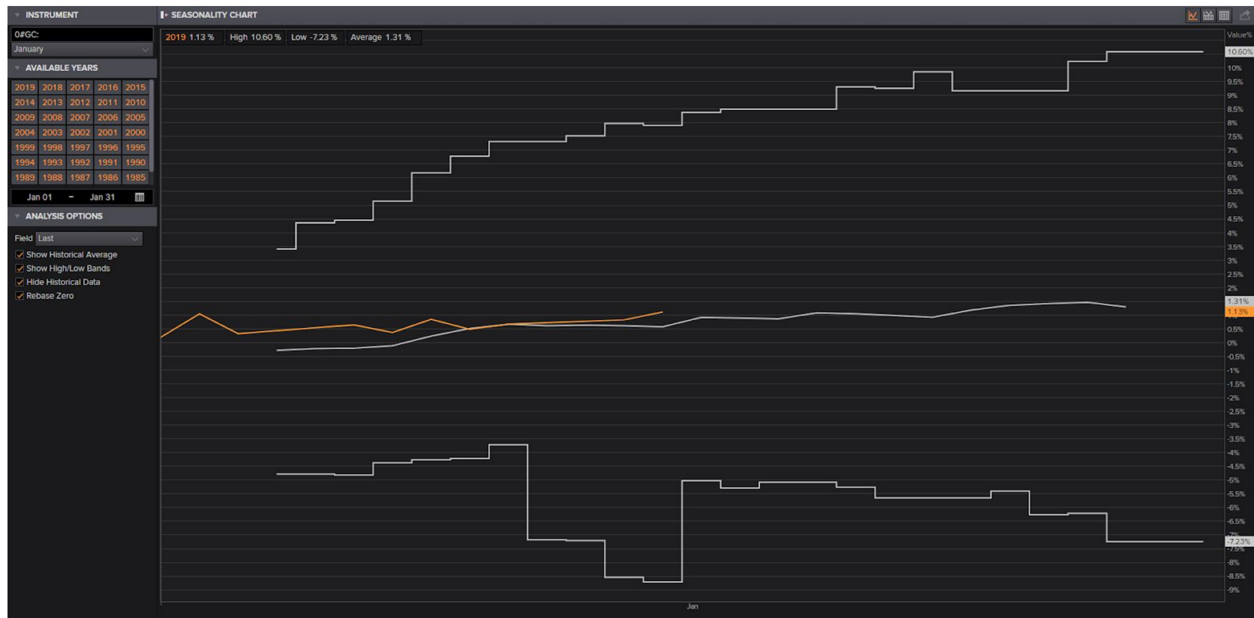
Fundamentally, I remain bearish gold. Slowing Chinese growth and rising rates are bearish for the yellow metal.



But we're in the strongest month of the year for gold. Chart below shows gold's performance during the month of January over the last 8-years. The orange line is where we're currently at.

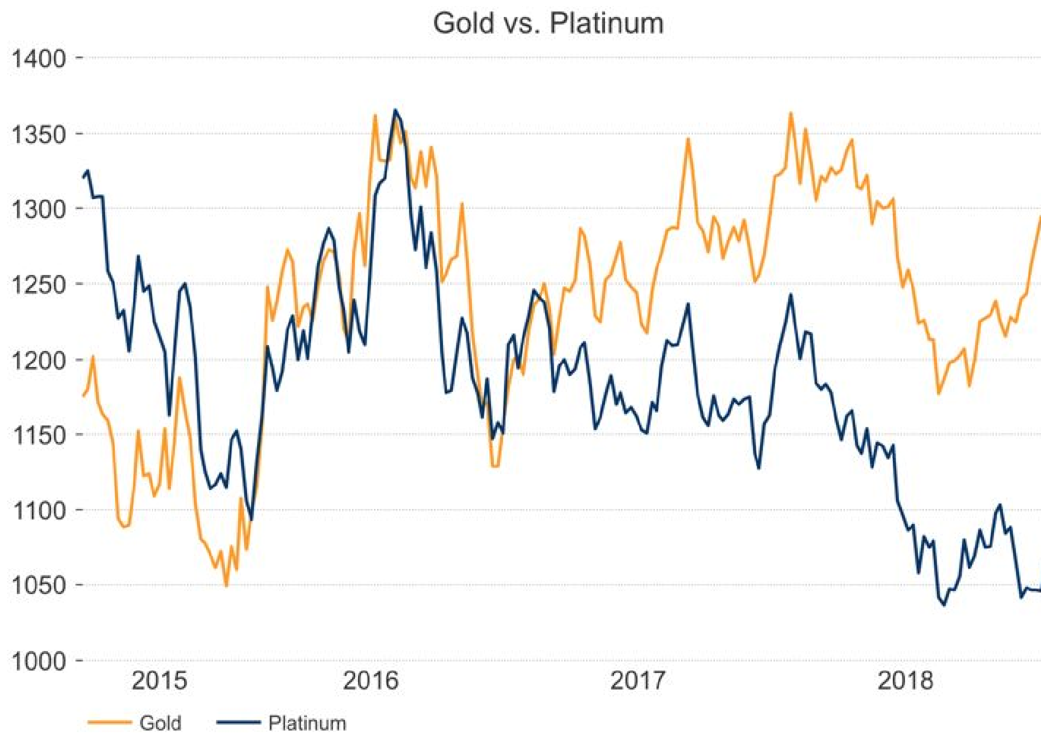


And this chart shows the median performance of gold in January (up 1.3%) along with the high and low over the last 30-years.



I ultimately respect price, which is why I don't have short position on. If gold has a strong close above the 1,300 level then I'd consider putting on a small long. But if it closes below the 1,280 level then I will plunge hard short.

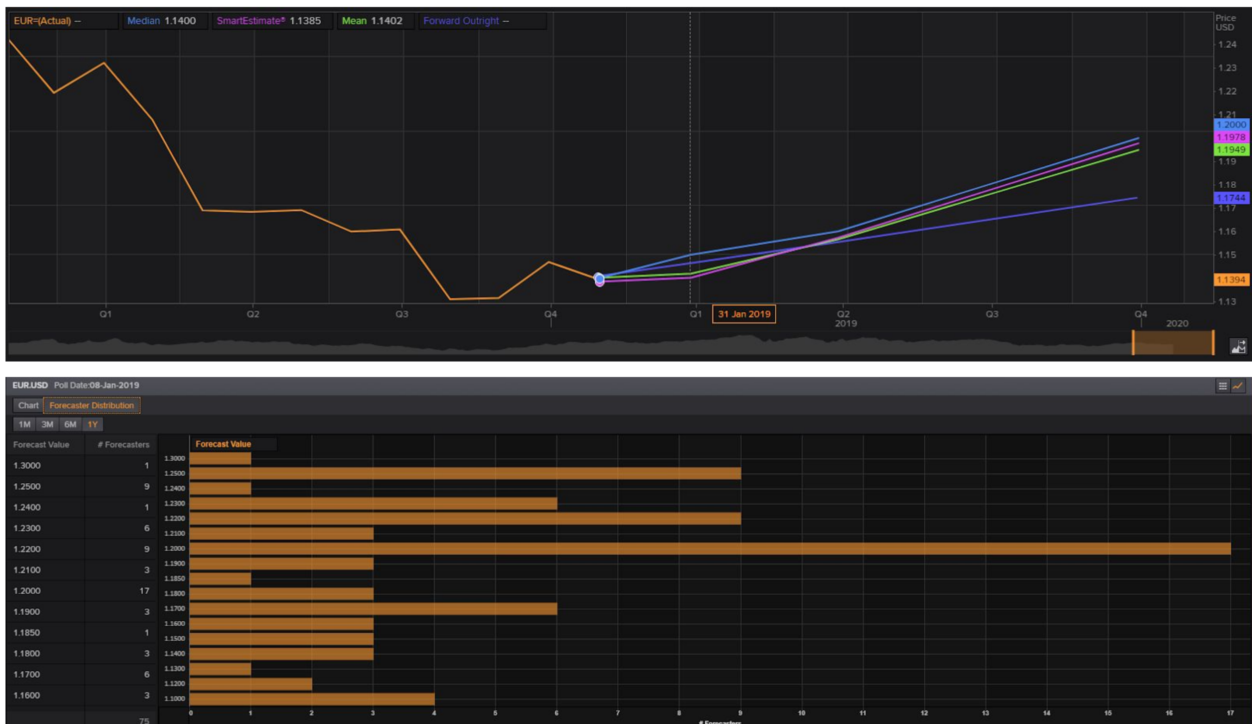
I think this gap will close with gold converging on platinum. Platinum is typically the smarter market of the two…



The Dollar

Nearly every “2019 Market Outlook” by investment banks and research shops that I’ve read (and I read a lot of them) think the dollar is moving materially lower. When I see this type of group-think it makes me go hmmm…..

The median Wall St. forecast has the EURUSD pair trading at 1.2000 by year’s end.



Forecast Value	# Forecasters
1.3000	1
1.2500	9
1.2400	1
1.2300	6
1.2200	9
1.2100	3
1.2000	17
1.1900	3
1.1850	1
1.1800	3
1.1700	6
1.1600	3
	75

That’s quite some bullishness especially when one considers the relative equity charts I shared above. Remember, equity traders are SMARTER than currency traders…

Still, we currently have a small (very small) long position in the euro but for purely technical reasons. But if/when EURUSD breaks below its 200-week moving average (blue line) then, like gold, I’ll be willing to plunge aggressively to the short side.

Euro Fx/U.S. Dollar, 1W, FXCM
MA (200, close)
MA (50, close)
MA (10, close)
1.28000
1.26000
1.24000
1.22000
1.20000
1.18000
1.16000
1.13921
1.12984
1.12000
1.10000
1.08000
1.06000
1.04000
Vol (20)
2M
0
2016
May
Sep
2017
May
Sep
2018
May
Sep
2019

Micro: Construction Partners (ROAD)

The following writeup on ROAD is done by an investor I often collaborate with but who must remain nameless for compliance reasons. He's the same value investor who wrote up GTX for us in our November MIR (link here). GTX is up around 18% since and this month he's sharing another one of his recent finds that I particularly like. Enjoy!

I've probably said this sentence too many times, but it's worth repeating: Boring businesses can be fertile places to find great investments. What makes boring businesses so exciting? They never go away no matter the economic condition. This doesn't mean that share prices of these businesses won't falter if the economy declines; but it does mean that the company's services will still be in high demand despite a downturn.

Scott Miller, manager of Greenhaven Road Capital, alluded to a conversation he had with a home repair professional regarding the stock market in one of his quarterly letters. Miller — and I'm paraphrasing — asked the man something along the lines of, "If the market drops 600 points, how does that affect your business?". The story goes that the home repair person laughed in confusion as he didn't understand how the stock market affects the day-to-day

valuation of his underlying repair business. This is important. Although the market may gyrate wildly day in and day out, it doesn't mean the value of the underlying business fluctuates so. With that, let's dive into Construction Partners (ROAD).

Double Digit Growth & Differentiated Drivers

ROAD operates in the large, growing highway and road construction industry. The company specializes in asphalt paving/servicing and is the market leader in the five Southeastern states it serves (NC, SC, GA, AL and FL). The company sports double digit revenue growth and double digit EBITDA margins. **ROAD generated $680M in Revenues for 2018 and is projecting 2019 Revenues to be between $760 – $810M with $1B in Revenues by 2022**. The company offers three major distinctions to its business that work as competitive advantages: vertically integrated operations, leading choice for acquisitions, and enhanced tailwinds from location.

Vertically Integrated Operations

ROAD covers virtually every aspect of road construction from Aggregate to manufacturing of HMA (hot mixed asphalt). The company has the capability to provide nearly every service required to build the final product from clearing & grading, setting roadway base, paving, storm drainage and curbs. The only services the company subcontracts are signage and roadway markers, guardrails / barriers and line striping / painting. To support this robust integration, ROAD owns / operates 30 HMA plants and 9 Aggregate Facilities. These HMA plants are located throughout the Southeastern region and provide tremendous competitive advantages. As it turns out, HMA plants can't be transported long distances very quickly (shocking — I know). These plants enable ROAD to get all the HMA they need regardless of where they are in the region, providing a huge advantage to the local competition which is mostly small to mid-sized "family run" construction companies that don't have access to proprietary HMA materials.

Strong Record of Bolt-on Acquisitions

At the time of its IPO in May, ROAD completed 15 acquisitions, enabling them to expand markets and geographic footprint. The company's been able to add rather frequently while keeping their debt burden in check. In fact, **ROAD is net-cash positive with a Debt-to-Equity ratio of 0.21**. How is management able to keep leverage minimal while making nearly an acquisition a year? Decentralized command.

Management's philosophy is simple at its core and extremely effective. Page 3 of the company's 424-B (public filing for new IPOs) presents a clear case for their acquisition strategy.

The company keeps local management in place and maintains all operational decisions at the local level. Upper management comes in only to provide strategic insights and leadership. The

only part of the business that gets standardized at the local level is the implementation of ROAD's bidding and management information systems, which frees up time at the local level, helping them focus more on capital allocation and business execution. This level of decentralized command enables ROAD to acquire great, local businesses without having to make costly personnel changes. Plus, who better to understand the local market than the best asphalt company in that local area?

Enhanced Geographic Tailwinds

Improving road conditions might very well be the single issue that both sides of the political spectrum agree on. Both parties support an increased spending bill for infrastructure repair to our nation's roads, bridges and airports. **This increased effort was first seen in 2015 with the passing of the FAST Act, which allocated $305B for transportation infrastructure spending through 2020. 2019 will see around $900M more dollars in infrastructure spending than 2018**, and the current administration appears equally excited to get a spending deal done on road rehab.

ROAD is located in the heart of some of the worst road conditions in the United States. According to the American Society of Civil Engineers, the states in which ROAD does business score extremely low on the grading scale. North Carolina: C, Georgia: C-, Alabama: D-, and Florida: C. Although the road conditions currently resemble that of an Amy Schumer Netflix special, each state is investing heavily into improvements. The average state in ROAD's jurisdiction has committed over $1.1B in spending on road infrastructure. Back-dropping all of this spending is a region of the US that is growing faster than the national average in both GDP and population (2.7% GDP growth and 1.1% population growth). There is an estimated $836B in backlogs for projects to repair deteriorating bridges and highways throughout the US. ROAD is well positioned to take some of that pie.

The company has grown revenues, cash flows and EBITDA each of the last three years. Looking out to 2019, management is expecting EBITDA to be in the range of $85 – $91.5M. If management is able to to achieve even the low end of their EBITDA figure, that would imply an EV/EBITDA multiple of 5.3x at current prices. Industry average multiples are around 9x EV/EBITDA. Applying that multiple to the company's most recent EBITDA figures gets us an EV of $612.9M. Adding back cash and backing out debt gets us to a market cap of $618M. Dividing the market cap by total shares outstanding (51.4) gets us an equity value per share of $12. So here's a business that's growing through strategic acquisitions while staying both net cash positive and low debt-to-equity. Industry tailwinds are well in place and the company is positioned in one of the higher-need areas for road improvement.

Risks

ROAD faces a few major risks to its continued revenue and EBITDA expansion. Reduced spending on public infrastructure, inability to successfully bid on DoT projects, sustained adverse weather conditions and taking on too much leverage for acquisitions seem to be the highest potential risks that could reduce the company's outlook and shorten their runway. While I do not see those playing a huge role in the next 3 – 5 years, they are good reminders for me should any of them pop up. If I had to choose the one risk that I'm worried about the most right now, it would be leverage. The company is in excellent shape balance sheet wise. I don't want them to take on unnecessary debt for the sake of acquisitions. A strong balance sheet will be crucial during an economic downturn and will make ROAD able to acquire more businesses at cheaper prices.

Valuation

Revenue and EBITDA growth in the low double digits should command a higher multiple in its industry. Industry averages are in the mid 9x's while the company currently trades for 5x its 2019 EBITDA. If we look even further down the road — pun intended — we can approximate a roughly right 2020 EBITDA figure of $100M (based on 2020 target of $1B in revenues). **A median multiple of 7.5x puts ROAD's EV at $750M. If we take the three-year cash and debt averages, we arrive at a market cap of around $740M. Dividing by the current number of shares gets us a share price of $17.**

Using management's projections of EBITDA for 2019 & 2020 of $87M and $100M, we can add a conservative combined growth rate of 6.5% for the remaining three years to arrive at 2023 EBITDA of $125M. If we assume D&A remains around 10.50% of EBITDA and capital expenditures are roughly 50% of EBIT, we arrive at a 2023 estimated FCF of $57M. Assuming a discount rate of 11% gets us a private value of FCF of $35M and a sum of present values of $184M. Adding our present value to our PV of Terminal Value gets us a value for the whole business of $660M. Subtracting out our net debt of -$36M and dividing by 45M shares finds an equity value of around $15.

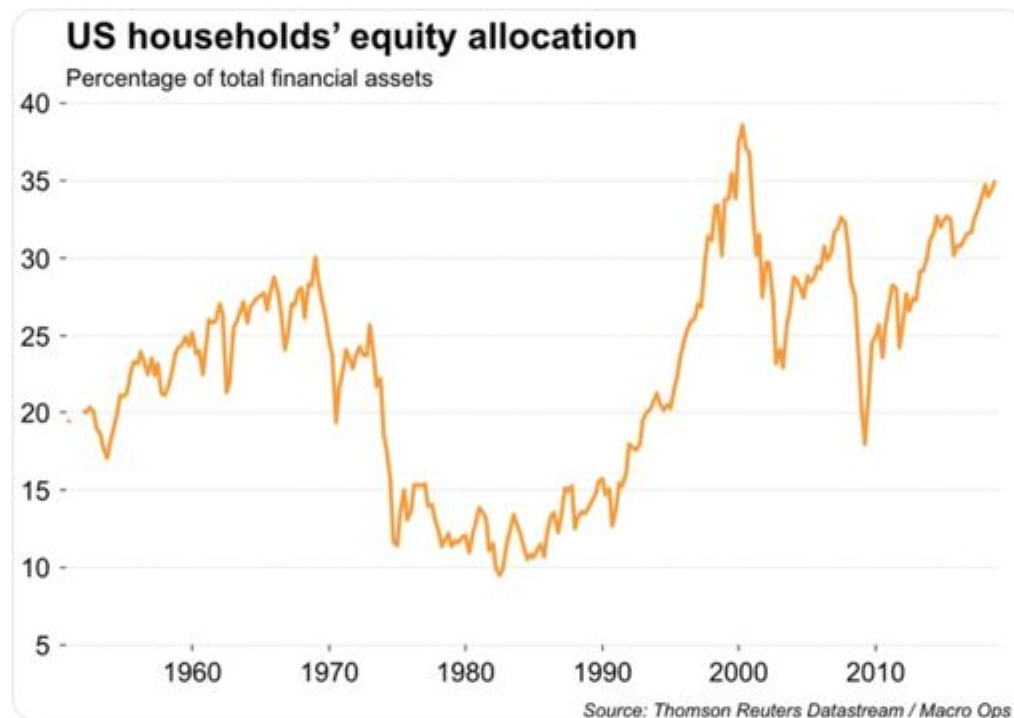
Current cost basis of my acquired position is around $8.50. Management buying shares as the price declined from $12 to $8 increased my confidence in effective capital allocation, and helps me sleep at night knowing interests are aligned. Current share prices indicate a market that is pricing in zero future growth in EBITDA. The market is likely VERY wrong on that assumption…

Conclusion

These are interesting macro times in markets. There are many moving pieces and unfortunately, it seems that policy and politics will be playing a bigger role in the year ahead (ie, Chinese credit injection and European fiscal stimulus).

In addition, we're seeing a number of extremes in relative market pricing and various data. I shared the chart below on twitter recently which shows that US households are holding their largest amount of stocks in 18-years and are within spitting distance of the all-time record 2000 top.

Alex @MacroOps · Jan 16
US equity allocation is within spitting distance of the record all-time highs reached in 2000. $SPY



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This doesn't mean that US stocks are about to crater. Actually, it's the opposite, as core driven cycles tend to persist until a recession is triggered. So US stocks are likely to keep outperforming and household allocation to stocks will probably increase. Eventually though….

Meanwhile, German stocks relative to US stocks are at 50-year lows…

And the energy sector is trading near all-time lows relative to the S&P 500.

We're likely going to see blood in the streets in the oil and gas space in the coming year. Most frackers are negative unit economic businesses; meaning they require more money to run than they can earn in return through operating. The industry has been kept afloat by low interest rates and willing investors. But as rates rise and liquidity dries up, many of these cash burners will go belly up.

But… this will ultimately prove very bullish for the price of oil. And many good names in the sector have been getting clobbered indiscriminately. This is how great value trades are born. Companies like RIG, MTDR, and WTI will be come out of this better than ever.

We'll be watching both these markets closely.

Until then, thanks for reading and shoot any questions you may have to me at alex@macro-ops.com.

Your Macro Operator,

Alex