Epsilon Theory

The Narrative Giveth and The Narrative Taketh Away

April 10, 2018

No farm animals today. I'd say no TV or movie quotes, but sometimes I can't help myself. We'll see. Instead, a quick note to email subscribers about what I think is one of the most unstable (meaning big ups and big downs) markets we've seen in eight years.

The day-to-day and intraday market swings over the past six weeks have been absolutely ferocious. There really hasn't been a big aggregate change in market levels since the middle of February (down a bit), but that modest overall decline masks a ton of ups and downs along the way, particularly over the past two weeks. If I were a betting man (and I am), my large wager would be that anyone running a tactical strategy, discretionary or systematic alike, has been whipsawed in an ugly fashion. These are the times that try traders' souls.

So here's the *Epsilon Theory* take on what's going on.

This market, like all markets, cares about two things and two things only — the price of money and the real return on invested capital. Or, as they are typically represented in cartoon form, interest rates and growth.

This market, like all markets, will go up if *either* cartoon can be represented with a positive narrative. That is, even if the Fed is raising interest rates, so long as they're doing it "for the right reasons" (meaning robust growth in the real economy), then the market can go up. Likewise, even if real economic growth is anemic, so long as that means that the Fed "has got your back", then the market can go up. This last bit — uber-accommodative central banks the world over — is why the S&P 500 is up more than 300% over the past eight years despite enormously disappointing global growth and productivity metrics.

This market, like all markets, needs a positive narrative on risk (the price of money) or reward (the real return on capital) to go up. Any narrative will do! But when *neither* risk nor reward is represented with a positive narrative, this market, like all markets, will go down. *And that's where we are today.*

Does the Fed have our back? No, they do not. They've told us and told us that they're going to keep raising rates. And they will. The market still doesn't fully believe them, and that's going to be a constant source of market disappointment over the next few years. In the same way that markets go up as they climb a wall of worry, so do markets go down as they descend a wall of hope. The belief that central bankers care more about the stock market than the price stability of money is that wall of hope. It's a forlorn hope.

Is there a positive growth narrative? Well, there WAS … not just in the U.S. but everywhere in the world, and it went under the heading of "synchronized global growth". With the tax cut passed in December, you could absolutely make the case that we were off to the growth races, and that was, in fact, THE narrative behind the amazing January for markets.

Two negative narratives have derailed all this — Inflation and Trade War. The first strikes at the "real" aspect of real economic growth. The second strikes at the absolute or nominal level of that growth.

The inflation narrative hit markets in force after the January jobs report of February 2, where wage inflation came in "hot". It subsided with the "Goldilocks" jobs report of March 9, where wage inflation was "contained", and the jobs report of April 6 did little to reignite the inflation narrative. But here's the thing. The wage inflation numbers for the past two months are wrong, crucially flawed by random differences in work-week hours from last year to this year (for more, read "**The Icarus Moment**"). On an apples-to-apples basis (eliminating the impact of spuriously estimated work-week hours on average hourly earnings), I estimate wage inflation in February was about 2.9%, not the reported 2.6%, and wage inflation in March was north of 3.0%, not the reported 2.7%.

My view: the inflation narrative will surge again, as wage inflation is, in truth, not contained at all.

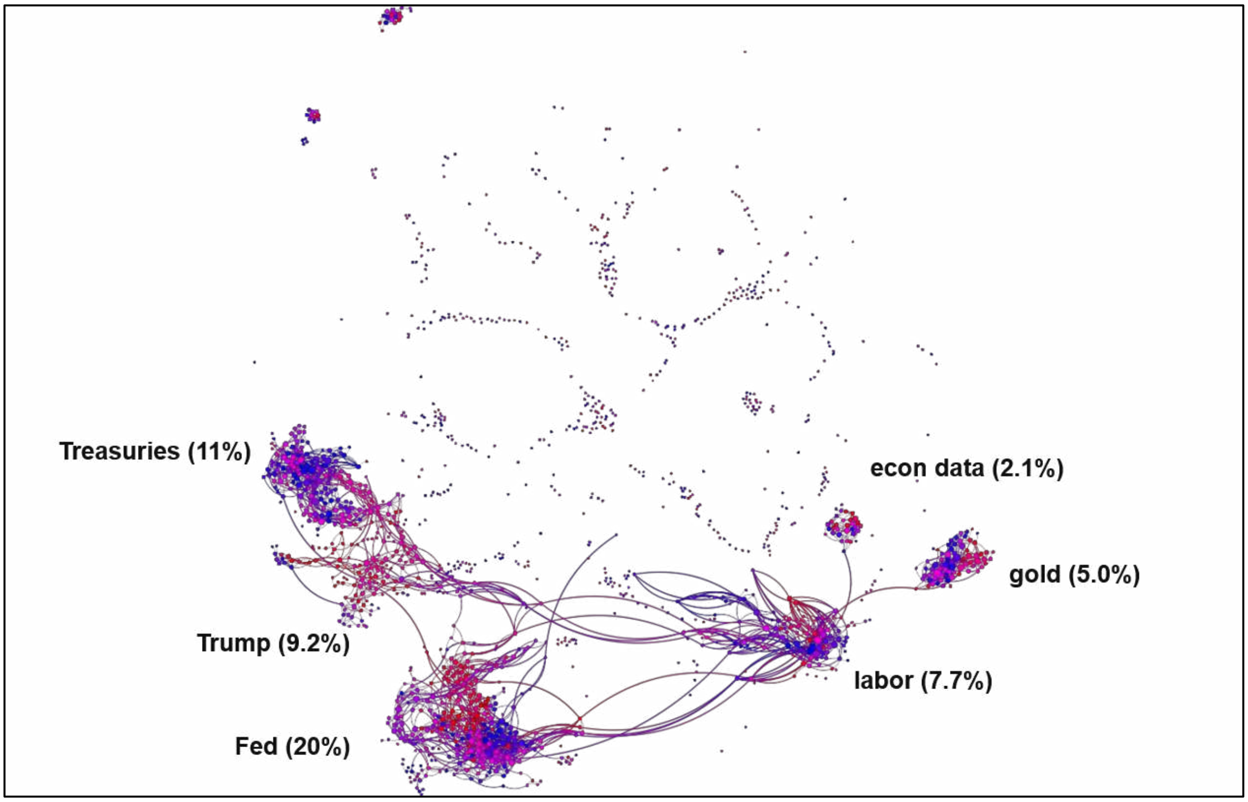
The trade war narrative hit markets in force in late February with the White House announcement on steel and aluminum tariffs. It subsided through mid-March as hope grew that Trump's bark was worse than his bite, then resurfaced in late March with direct tariff threats against China, then subsided again on hopes that direct negotiations would contain the conflict, and has now resurfaced this past week with still more direct tariff threats against and from China. Already this weekend you've got Kudlow and other market missionaries trying to rekindle the hope of easy negotiations. But being "tough on trade" is a winning domestic political position for both Trump and Xi, and domestic politics ALWAYS trumps (no pun intended) international economics.

My view: the trade war narrative will be spurred on by BOTH sides, and is, in truth, not contained at all.

Of these two claims — that both the inflation and the trade war narratives are here to stay and, frankly, you ain't seen nothing yet — I want to dig in a bit more here on the inflation narrative claim, as that's the narrative that's taken a back seat over the past six weeks or so. It's also the narrative that, over time, I think will have the larger impact on investors' portfolios. In a very real sense (still no pun intended), getting the inflation question right is the ONLY question that a long-term investor or allocator MUST get right in order to succeed.

So here's what the Narrative Machine is showing me about inflation.

The methodology of the Narrative Machine is described in **the *Epsilon Theory* note by the same name**. It's a natural language processing (NLP) analysis of a large set of market relevant articles — in this case everything Bloomberg has published that talks about inflation — where linguistic similarities create clusters of articles with similar meaning (essentially a linguistic "gravity model"), and where the dynamic relationships between and within these clusters can be measured over time.



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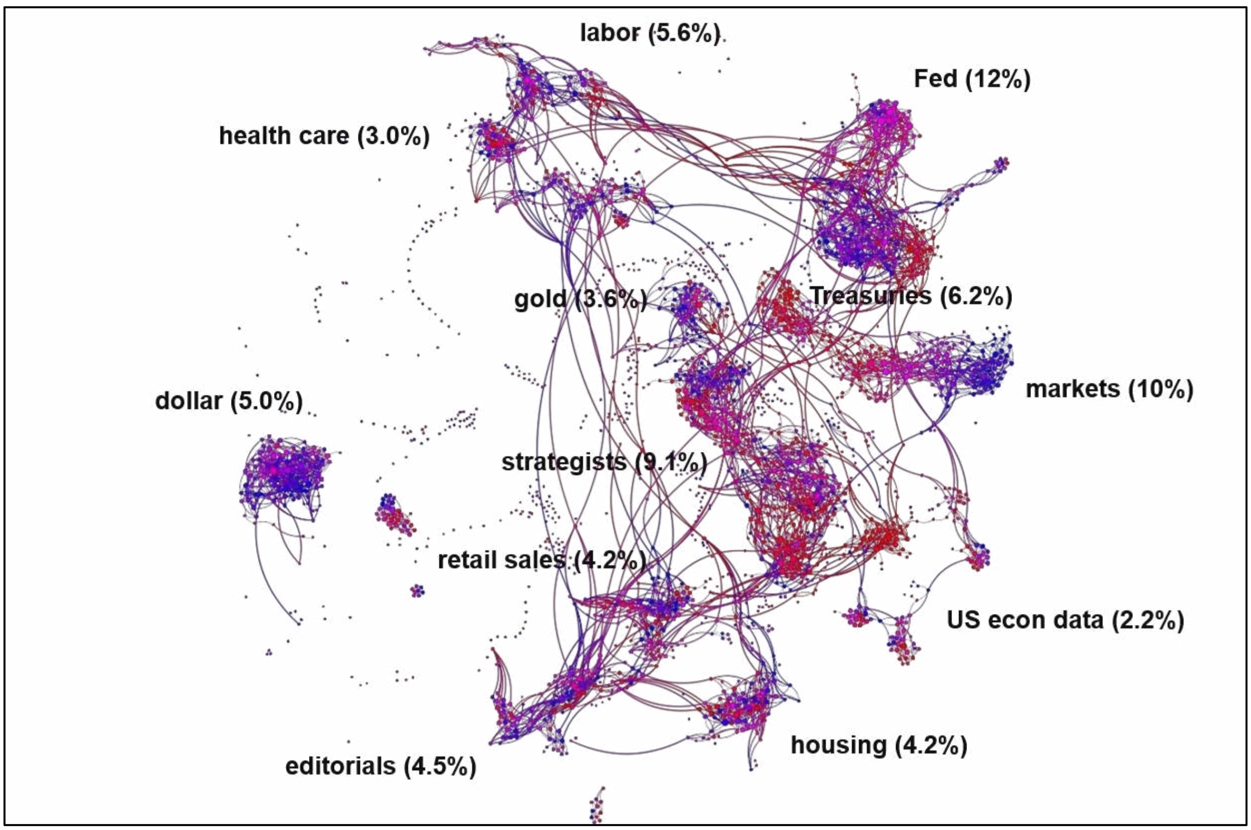
What you're seeing above is the Bloomberg narrative on inflation from April 2016 through March 2017, where each of the 1,400 dots is a separate Bloomberg article that contained some mention of U.S. inflation, and where the dots are colored by publication date (blue early in the 12-month period, red late in the 12-month period). There's meaning associated with the size of each individual dot or node, too, but not particularly useful meaning for this analysis. What's most important here is the geometry within and the distance between the clusters of articles, each associated with "inflation and …" Trump or the Fed or gold or whatever category you see named above. *This is a prototypical "complacent" narrative network, where a substantial percentage of articles are unclustered, and the clusters that exist are distant from each other, tenuously connected, and on the periphery of the narrative superstructure.* When you read the individual articles here, they are ABOUT Trump or the Fed or gold or whatever, with inflation being a subsidiary topic of interest. Inflation per se is just not a particularly relevant narrative for the market over this period.

In contrast, what you're seeing below is the Bloomberg narrative on inflation from April 2017 through March 2018. Not only do you have 2,400 unique articles in this year-over-year period, a 75% increase, but more importantly you have strikingly more narrative cohesion across the published articles. Entire narrative clusters have come into being over the course of the past 12 months, clusters like "strategists" that are in the geometric heart of the entire interlaced network, meaning that they are providing a gravitational core to the narrative superstructure. Moreover, these new clusters are truly ABOUT inflation, where this is the core topic of the article, not a side issue. It's a difference in *meaning* and *sentiment* associated with the unstructured data of the individual articles that a human cannot possibly capture in the aggregate, no matter how voracious and comprehensive a reader he is, but is processed and visualized in a few seconds by the Quid NLP algorithms. In the NLP equivalent of time-lapse or stop-action photography, you can actually see these clusters come into existence over time and exert their gravitational pull on the entire narrative superstructure, providing what I think is an important systematic approach to visualizing and measuring market-moving *structures* of sentiment. THIS is the power of AI. It won't make your regressions run any faster. It's not particularly helpful in working with structured data at all. But it changes everything in how we SEE the ocean of unstructured data in which we all swim.



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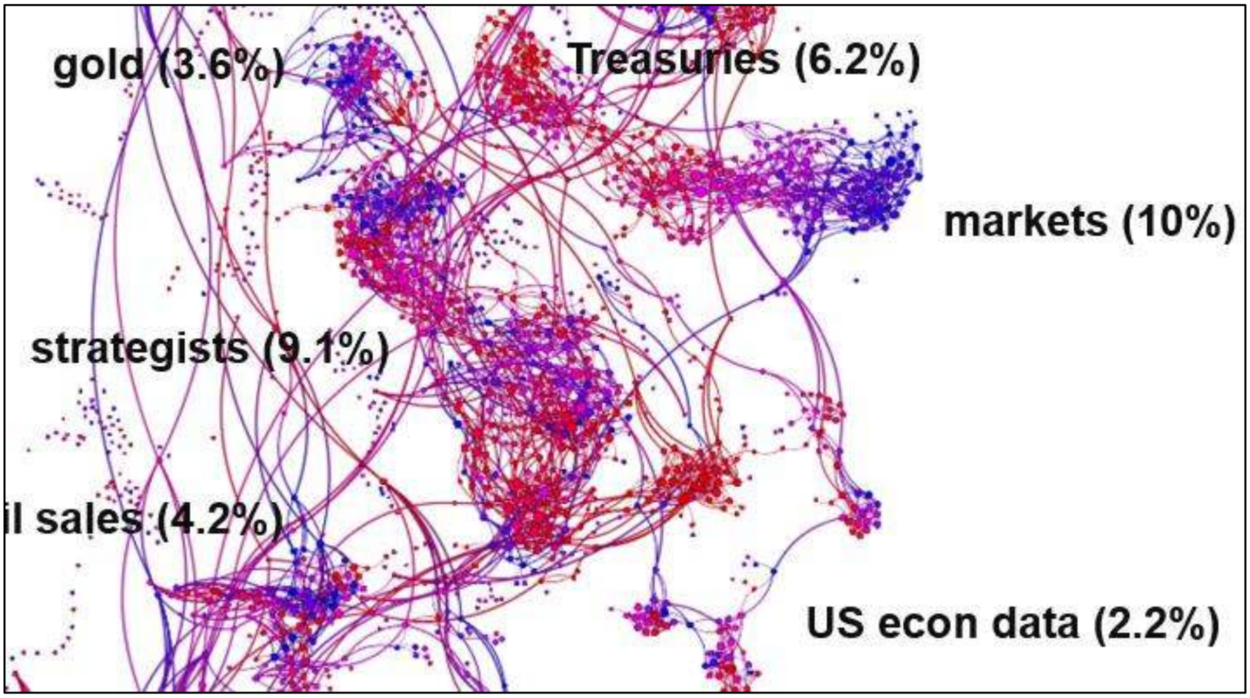
I've color-coded the article nodes by date (bluer = older, redder = more recent) to show this time-lapse effect in a single snapshot of the network. Because this is a "gravity model", it's meaningful that the more centrally located articles within the superstructure tend to be redder or more recent articles. Also meaningfully, the clusters themselves show this effect. Look at the blow-up of the network below, and you can see how the more recent (redder) articles in the "markets" cluster are more centrally positioned than the older (bluer) articles in the same cluster. What all this means is that the inflation narrative is becoming not only stronger (more articles, new clusters) but also — and I really can't emphasize this point enough — *the inflation narrative is becoming more coherent and "gravitationally stable" over time.* **The growing strength and coherence of these Narrative Machine visualizations show the creation of powerful *common knowledge* around inflation, where *everyone knows that everyone knows* that inflation is rearing its very ugly head.**



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Six months ago, in a note called "**Harvey Weinstein and the Common Knowledge Game**", I wrote this:

> The core dynamic of the CK Game is this: how does private knowledge become — not public knowledge — but common knowledge? Common knowledge is something that we all believe everyone else believes. Common knowledge is usually public knowledge, but it doesn't have to be. It may still be private information, locked inside our own heads. But so long as we believe that everyone else believes this trapped piece of private information, that's enough for it to become common knowledge.
>
> The reason this dynamic — the transformation of private knowledge into common knowledge — is so important is that the rational behavior of individuals does not change on the basis of private knowledge, no matter how pervasive it might be. Even if everyone in the world believes a certain piece of private information, so long as it stays private — or even if it becomes public information — no one will alter their behavior. Behavior changes ONLY when we believe that *everyone else* believes the information. THAT'S what changes behavior. And when that transition to common knowledge happens, behavior changes *fast*. …

> My pick for the big idea that gets taken down? The idea that inflation is dead. We all know it's not true. We all know in our own heads that everything is more expensive today, from rent to transportation to food to iPhones. But it's not common knowledge. Not yet.

The "not yet" is now. **The stage is now set for an explosive market re-evaluation of inflation and its impact on the price of money and the real return on invested capital.** This is no longer a complacent crowd. This is now a highly focused crowd. The crowd is now watching the crowd in regards to inflation. Everyone knows that everyone knows that inflation is an important issue. The only thing missing is the Missionary statement, the little girl crying out that the Emperor has no clothes. That's when common knowledge crystalizes into behavior. That's the freak-out moment for markets.

What is the crystalizing Missionary statement? I think it's wage inflation in a future jobs report.

In exactly the same way that random observations of work-week hours have artificially depressed the average hourly wage inflation cartoon reported by the BLS over the past two months, *there is a 100% chance that random observations of work-week hours will artificially magnify the wage inflation cartoon reported by the BLS in some future months.* This is not an opinion. This is, as they say, math.

For example, if the 12-minute difference in the March 2017 work-week (34.3 hours) and the March 2018 work-week (34.5 hours) had been reversed, the reported wage inflation last Friday would have clocked in at 3.3%. Let me repeat that. **Three-point-three percent.** That is an Emperor-has-no-clothes moment.

When will we get this "shockingly hot" wage inflation number? I have no idea. That's what it means to have a random number series as part of your cartoonish data estimation process. It's random. Again, this is math.

But here's the last 6+ years of the data series so you can see for yourself what the year-over-year comps are for work-week hour estimations, or as I like to call it, ROUND (RANDOM (34.3 , 34.6), 0.1).

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012	34.5	34.5	34.5	34.5	34.3	34.4	34.4	34.4	34.4	34.4	34.4	34.5
2013	34.4	34.5	34.6	34.4	34.4	34.5	34.4	34.5	34.4	34.4	34.4	34.3
2014	34.4	34.3	34.6	34.5	34.5	34.5	34.5	34.6	34.5	34.5	34.6	34.6
2015	34.6	34.5	34.5	34.5	34.5	34.5	34.5	34.6	34.6	34.5	34.5	34.6
2016	34.6	34.5	34.4	34.4	34.4	34.4	34.4	34.3	34.4	34.4	34.3	34.4
2017	34.4	34.4	34.3	34.4	34.4	34.4	34.4	34.4	34.3	34.4	34.5	34.5
2018	34.4	34.5	34.5									

Source: Bureau of Labor Statistics. For illustrative purposes only.

We won't hit any prior year 34.5 readings until the end of calendar 2018, where a random reading in the historical range is most likely to present a real shocker, but any of the next five months have a year-over-year comp where the wage inflation number, which I think is now above 3%, is at least more likely to be accurately represented via the average hourly wage cartoon.

To steal a line from *Game of Thrones* (see, told you I couldn't help myself), we're now at the point where the catch phrase is about to shift from "Inflation is Coming" to "Inflation is Here." And if that's married with disappointing growth from say, oh, I dunno … a TRADE WAR WITH CHINA … well, that's not just inflation, that's stagflation. And that's the market equivalent of the Night King and the White Walkers running rampant over all of Westeros. Is that the most likely scenario? No. Is it a scenario that we need to take seriously? Absolutely.

So what's to be done?

Well, it's time to stop thinking about what inflation means for your portfolio, much less stagflation, and start doing something about it. And yes, I know our inflation-investing muscles are severly atrophied. Time to start flexing those muscles. Time to start exercising those muscles. Because you're going to need them.

For an allocator, I think the core inflation-investing muscles are real assets, broadly defined. I wrote about this two years ago in "**Hobson's Choice**", and I wouldn't change a word today. More broadly, the premise here is to push back from the table games here at the doubly-abstracted Public Market Casino, get closer to real cash flows from real things for real people, and think "pricing power, pricing power, pricing power" in every bit of analysis that you do. You'd also be well served to start reading Rusty Guinn's new *Epsilon Theory* series, "**Investing With Icarus**", which is just getting off the ground and will have a lot more to say about all of this.

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