UPDATE ON THE ETF LIQUIDITY – AUTUMN 2019

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Following Michael BURRY's interview (Bloomberg via email) on September the 4th 2019, in which he establishes a parallel between a bubble that he sees developping in the index funds and the subprime CDOs bubble, (main cause of the Great Financial Crisis of 2008), it seems like a good time to review the index funds and their liquidity.

Those who read us since September last year know that this particular subject is one of our main center of interest. So, the release of an interview of one of the main « Big Short » protagonist on this particular subject, and the numerous reactions that it triggered give us the opportunity to carry on a thorough review of the liquidity of these passive investments and where it currently stands.

• INTRODUCTION

- One of the most famous caracters in Michael Lewis' book « The big short », Michael BURRY, recently made the headlines when he compared in a Bloomberg interview the index funds growing bubble with the 2006/2008 synthetics CDOs (Collateralized Debt Obligations) bubble .
- M Burry's critics of index funds and, more generally, passive investment essentially rest on 2 grounds:
  . The way they contribute to **remove price discovery from the equity markets**.
  . The liquidity, or illiquidity rather, of these products.

- In our mind it is fairly clear that this interview has drawn the attention of many market players on the potential problems posed by index funds, ETFs and other passive investment vehicles .

• WHAT DOES MICHAEL BURRY SAY?

- The first above mentionned point is highlighted in the following extract:

> « Central banks and Basel III have more or less **removed price discovery from the credit markets**, meaning risk does not have an accurate pricing mechanism in interest rates anymore.
> And now **passive investing has removed price discovery from the equity markets**. The simple theses and the models that get people Into sectors, factors, indexes, or ETFs and mutual funds mimicking those strategies - these do not require the security-level analysis that is required for true price discovery.
> This is very much like the bubble in synthetic asset-backed CDOs before the Great Financial Crisis in that price-setting in that market **was not done by fundamental security-level analysis, but by massive capital flows based on Nobel-approved models of risk that proved to be untrue**."

- The second point, related to illiquidity, comes from the following extract:

  « The dirty secret of passive index funds -- whether open-end, closed-end, or ETF -- is the distribution of daily dollar value traded among the securities within the indexes they mimic.

  In the Russell 2000 Index, for instance, the vast majority of stocks are lower volume, lower value-traded stocks. Today I counted 1,049 stocks that traded less than $5 million in value during the day. That is over half, and almost half of those - 456 stocks - traded less than $1 million during the day. Yet through indexation and passive investing, hundreds of billions are linked to stocks like this. The S&P 500 is no different - the index contains the world's largest stocks, but still, 266 stocks - over half - traded under $150 million today. That sounds like a lot, but trillions of dollars in assets globally are indexed to these stocks. The theater keeps getting more crowded, but the exit door is the same as it always was. All this gets worse as you get into even less liquid equity and bond markets globally. »

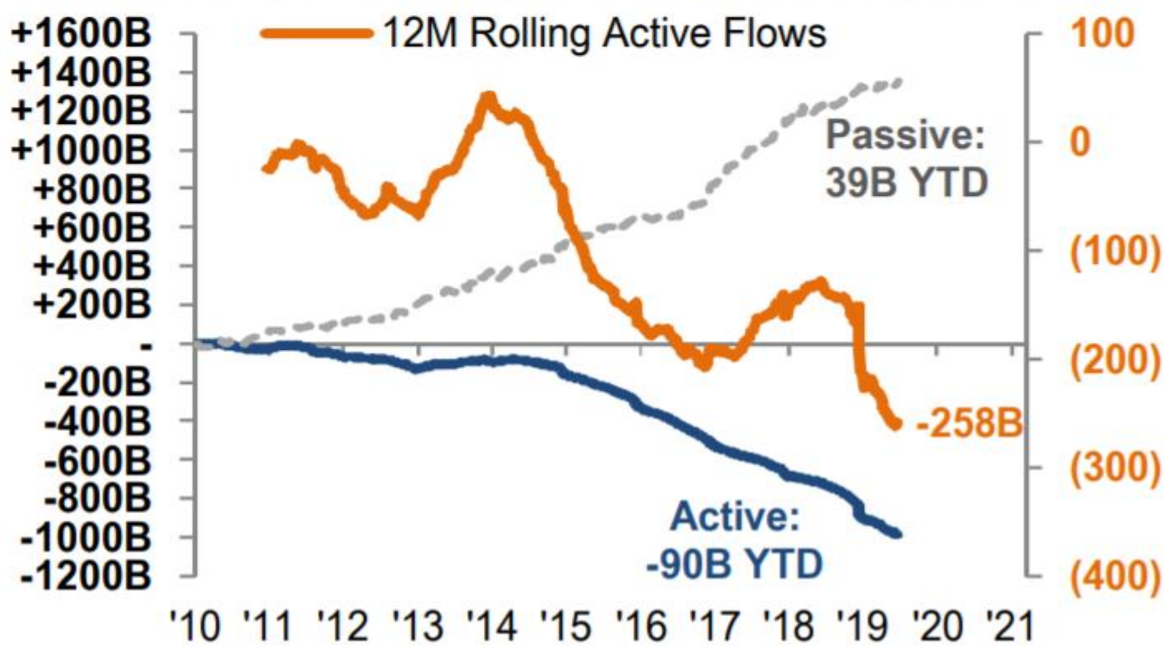
- Those interested by the full interview can find a link in the appendices.
- M. Burry is worried about the almost complete disapperance of fundamental analysis of equities or bonds before any investment decision. And rightly so! These analysis being more and more replaced by what he describes as thesis and models which push people to invest in sectors, ETF or Mutual Funds replicating indices. The relentless price increases are not therefore due to any consensus coming from fundamentals analysis. They are due to massive capital flows based on mathematical models which quite often are proved untrue….
- His other main worry results from the illiquidity of many of the indices components and therefore of the ETF mimicking these indices. And that is, in our mind, the biggest risk facing the multitude of investors in that kind of products.

- In what follows, we will elaborate on these two points.

- **BUBBLE OR NOT BUBBLE??**

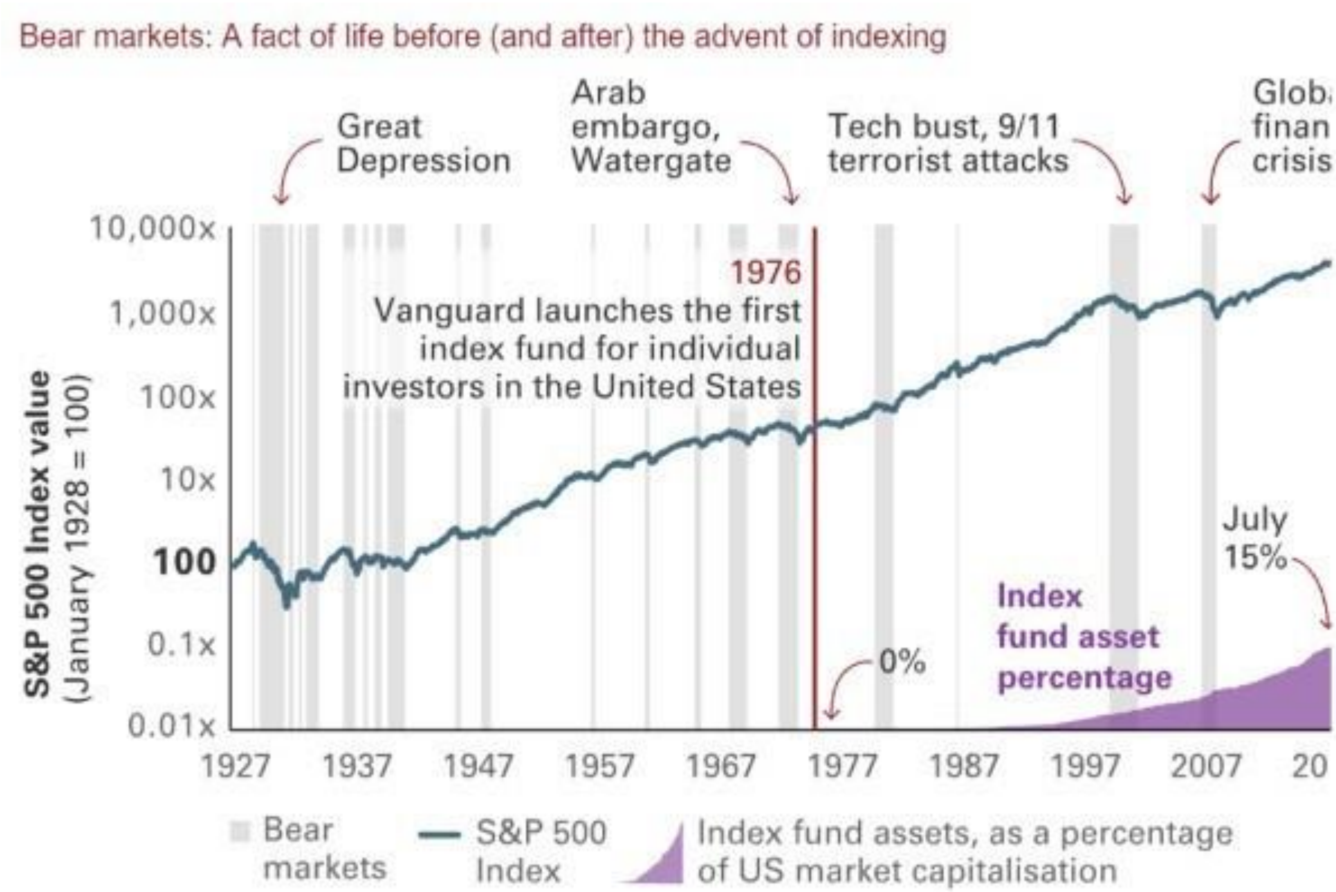
- The existence of a bubble in the passive investment world is a very controversial matter at the moment.
- According to a JP Morgan study released in June 2019, 80% of the market was now on autopilot. Here is a quote from that article:
  "Passive investments such as index funds and exchange-traded funds control about 60% of the equity assets, while quantitative funds, those which rely on trend-following models instead of fundamental research from humans, now account for 20% of the market share"
- Their study shows that so far in 2019 passive funds have attracted $39 Bn of inflows while the active funds have lost, in the same time, a staggering $90 Bn! See chart below:

Figure 2: 12M Active Outflows at Record



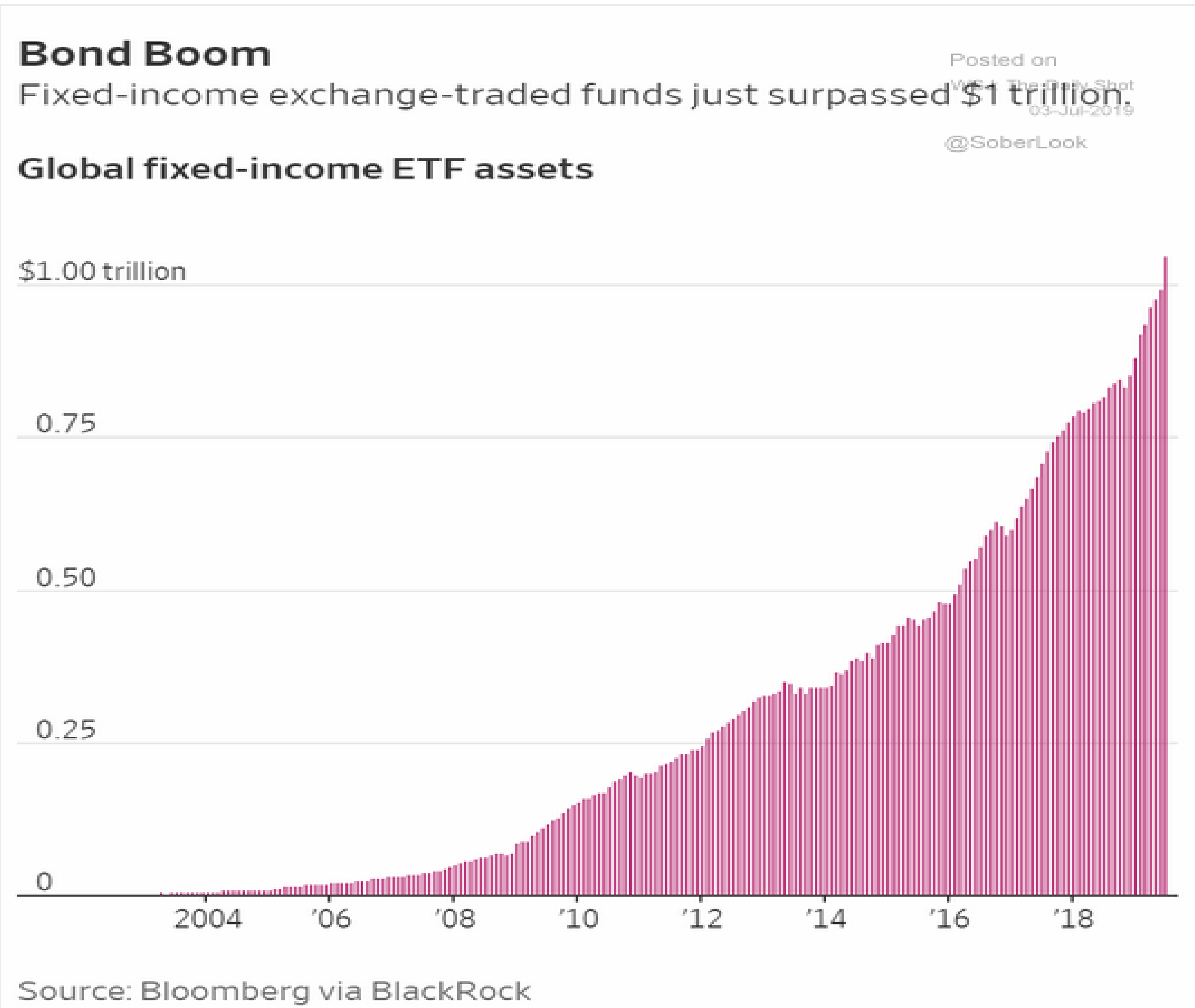
Source: J.P. Morgan US Equity Strategy, J. P. Morgan Prime Brokerage, EPFR

- So for JPM there is indeed a bubble!
- Similarly, Doubleline Capital CEO Jeffrey Gundlach, expressed his views about passive investing in December of 2018 : “I’m not at all a fan of passive investing. In fact, I think passive investing ... has reached mania status as we went into the peak of the global stock market, I think in fact that passive investing and robo-advisors ... are going to exacerbate problems in the market because it’s herding behavior! I wouldn’t advise anyone to be a passive investor. My strongest advice is to not invest in passive U.S. equity funds.”
- At the opposite,VANGUARD responded, saying the following in a statement to CNBC:
• “While Mr. Gundlach may enjoy pointing fingers, the data simply does not support his claims. Index funds own a modest 15% of the value of all global equities, and the strategy accounts for less than 5% of the exchanges’ total trading volume.”
- They also show that there is no relationship whatsoever between the growth of the index funds and the bear markets as shown in the chart below (Source: Vanguard):



- On the same side of the argument, we find the biggest asset manager in the world, Blackrock, clamoring everywhere that ETF index funds “support lively and enthusiasts capital markets”…
- Although you should bear in mind that Vanguard and Blackrock are two of the most important providers of index funds and ETF …..
- We shall now present 3 graphs which we feel are very telling when it comes to the current frenzy of investors for passive investments.

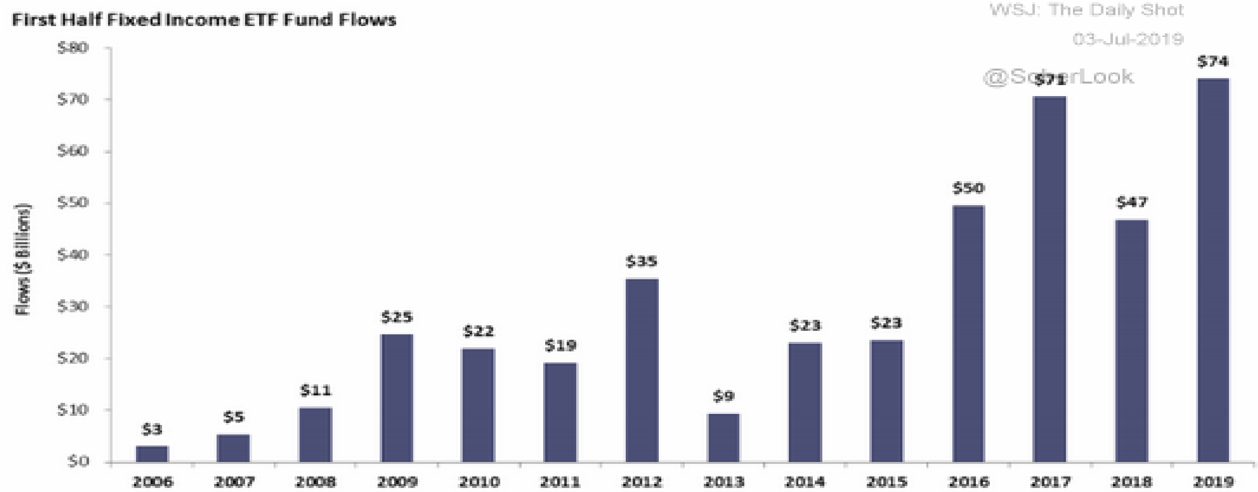
  The first one shows that the one trillion USD mark of ETF Fixed Income assets has been reached in August 2019…



- As you can clearly see, the assets increase is parabolic…..
- The following chart (Source: Bloomberg/ State Street) shows the inflows in the US Fixed Income ETF during the first 6 months of the year since 2006.

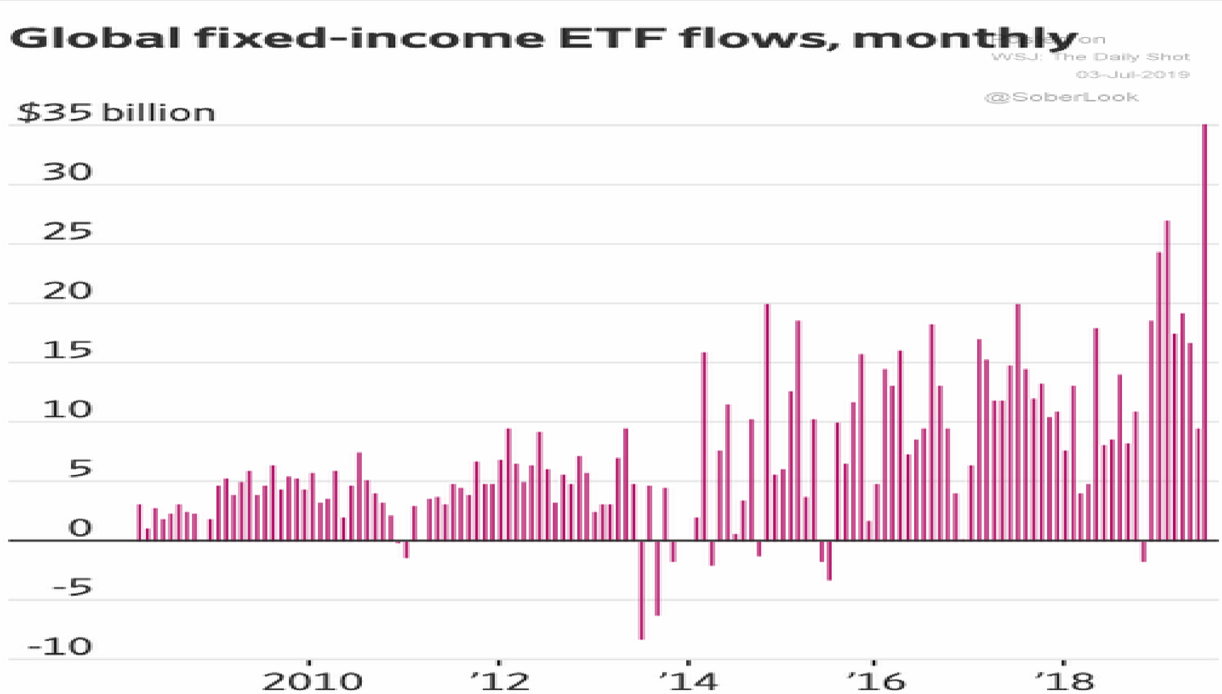
Figure 2: Great First Half Stats

The chart below depicts the first half of year fund flows into fixed income ETFs.

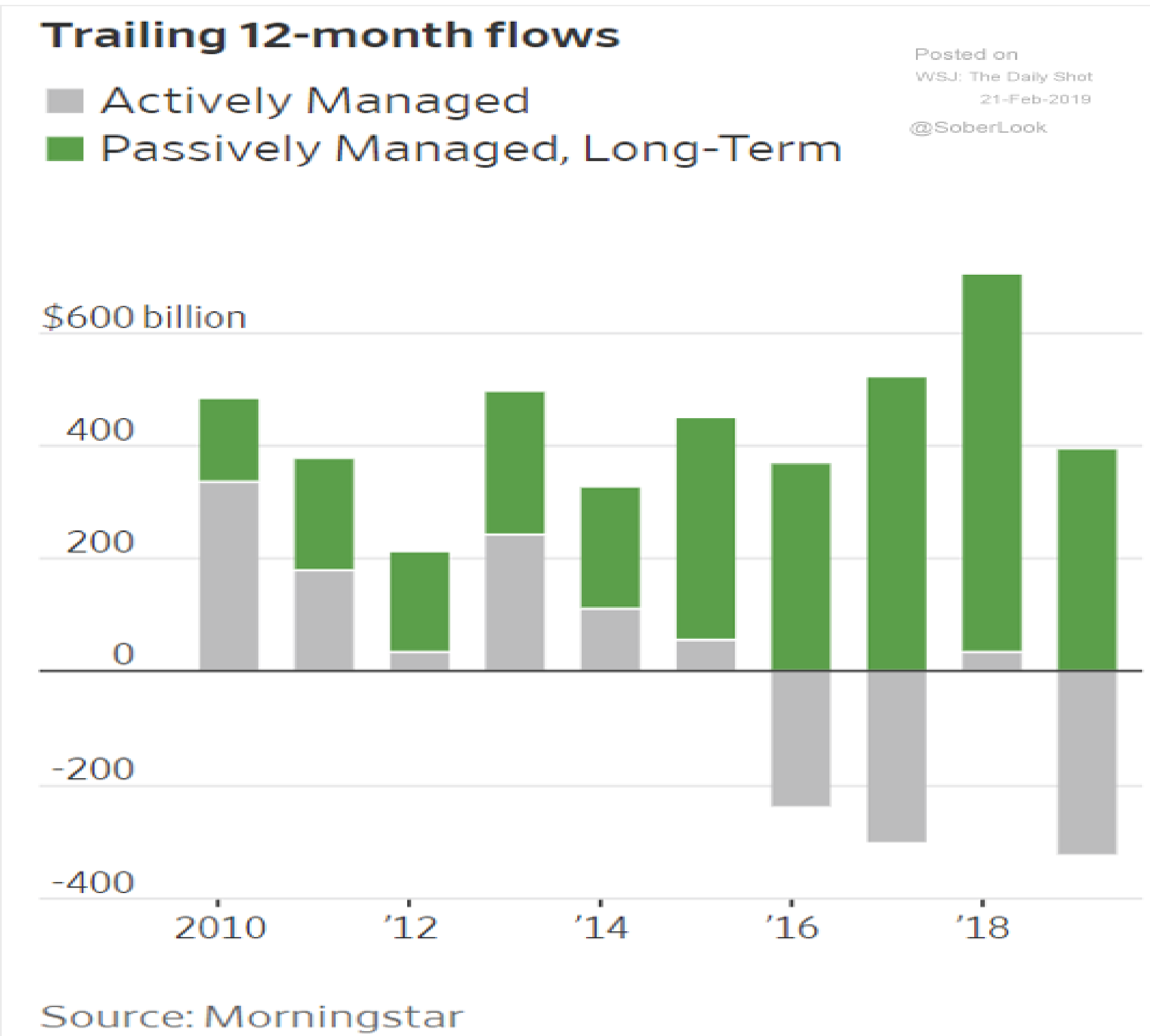


Source: Bloomberg Finance L.P., State Street Global Advisors, as of June 30, 2019. Past performance is not a guarantee of future results.

- The last graph (Source Bloomberg with Blackrock) shows the monthly flows in the Global Fixed Income ETFs. That is a strong demand indeed!



- Having seen these charts, what is pretty clear is that investors demand for the Fixed Income ETFs is relentless!
- Now, what about the global flows towards these same type of funds, all asset classes considered?
- The following graph, from a Morningstar study released in March 2019, will show you that the trend in the rotation from active funds towards passive funds is now well established ….. A PERMANENT EXODUS!
- 2019 will be the 5th year during which inflows in the passive funds should reach at least $400 Bn.



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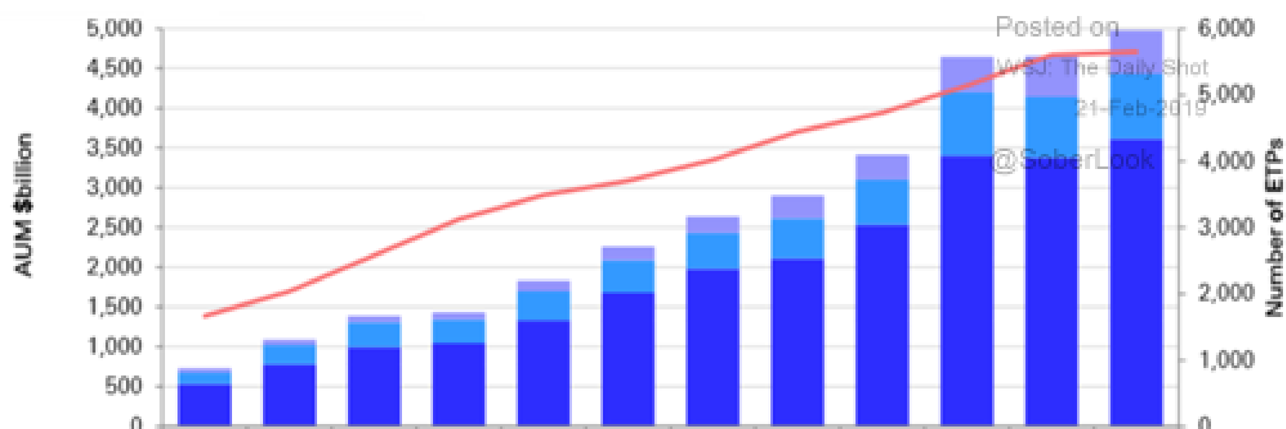
- Of course this seemingly unstoppable growth is greatly helped by the explosion of the number of available ETPs (Exchange traded Product). You've got an ETP for pretty much everything these days…. The following chart (Source Deutsche Bank) will show you the parallel increases in assets and number of ETPs during the last decade…..

Historical Growth of Global ETP Asset*



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019**
Asia Pacific ($)	53	67	84	91	136	170	207	284	314	447	513	550
Europe ($)	142	240	309	298	365	412	455	504	573	795	761	811
US ($)	537	783	997	1,046	1,333	1,678	1,979	2,113	2,533	3,406	3,381	3,618
US, Europe & Asia Pacific ($)	732	1,091	1,390	1,436	1,834	2,259	2,641	2,901	3,420	4,648	4,654	4,978
Europe (€)	102	167	231	229	277	299	376	464	543	662	663	709
Number of ETPs*	1,667	2,040	2,582	3,127	3,492	3,708	4,020	4,449	4,733	5,139	5,603	5,651

Source: Deutsche Bank, Bloomberg Finance LP

**These figures don't include the ETF markets in the Americas ex US and in the Middle East and Africa regions, data as of the end of last month.*

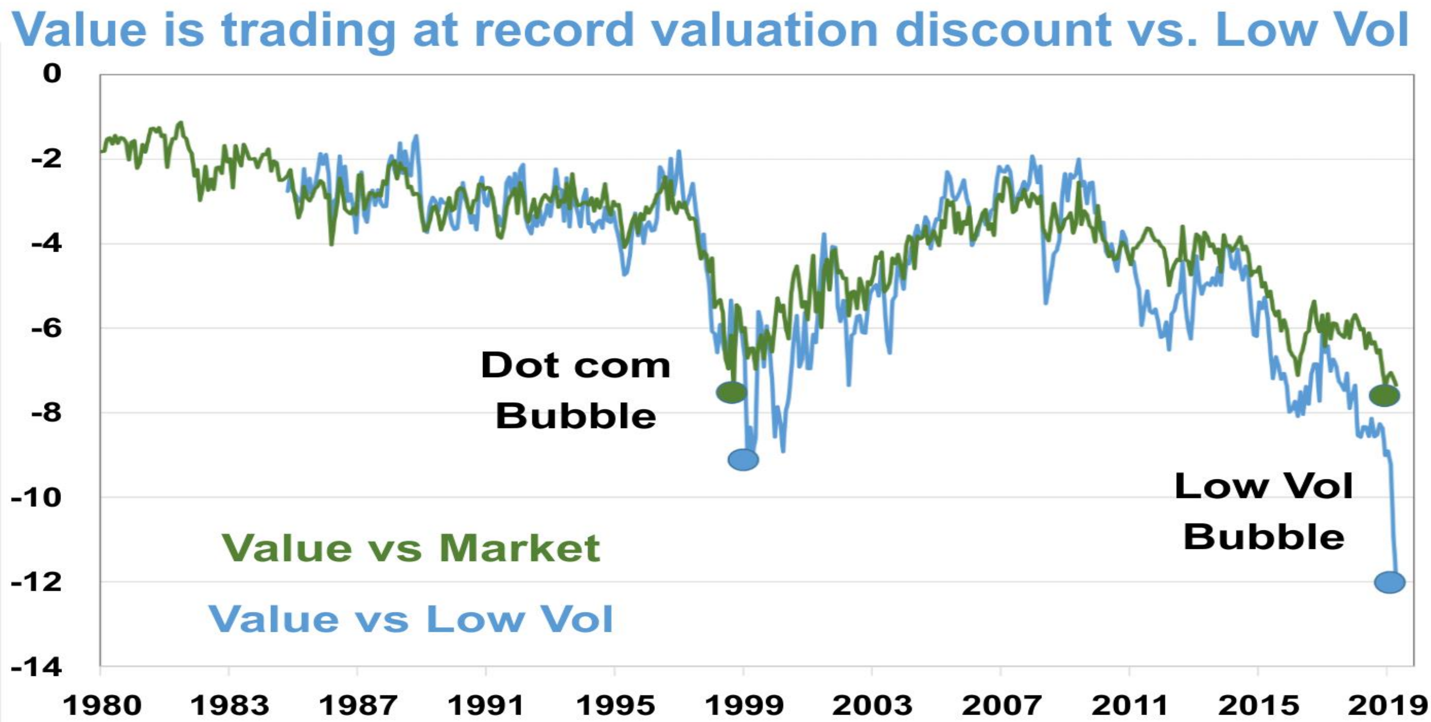
- **Assets** have been multiplied by more than 8 (+739%) in 12 years. This growth has slightly slowed down in 2018 but is reaccelerating this year…
- In the United States alone, total assets reach more than $3,6 Tn.
- **The total number of** ETP has been multiplied by **7 in 12 years! More than 5**000 ETPs have been created between 2009 and 2018!
- Even on the developed and mature markets, their number keep growing!
- To the extent that they are now more numerous than the public US companies ! Indeed, the number of listed American companies went down from 7500 in 1996 to roughly 3600 at the end of 2017….

- To assert with any degree of certainty that passive investment is currently IN a bubble actually depends on how you define what a bubble is…. What seems clear, seeing the above charts, is that the number of ETPs is consistently growing, thus allowing investors to play any kind of strategies on any economic sub-sector and even on some very tiny niche markets (For example the ETF LIT which allows the investors to play on Lithium producers…). All this makes the job of the old fashionned asset managers extremely difficult. Nowadays, they can not afford to underperform their benchmark once, because if they do, they are at risk of undergoing an investors exodus towards the correponding ETF. These investors being safe in the belief that they will never underperform the reference index ever again (more or less the tracking error).
- It's even better when you take into account that derivatives products (options for instance) now trade on numerous ETF, the most liquid, which allow investors to hedge a market risk and therefore potentially outperform the benchmark at the end!

• **EQUITIES ETF LIQUIDITY**

- From an operationnal point of view, it is a fundamental subject. What garantees that an investor will never be « hung » with a product that he doesn't want to hold any longer but that he can NOT sell?
- In an article published mid August 2019 and available in the appendices, 13D Research underlines:
- "Anticipating a downturn, investors have flooded into low-volatility funds. The iShares Edge MSCI Min Vol USA ETF and the Invesco S&P 500 Low Volatility ETF have seen inflows of roughly $8 billion this year, only slightly trailing the $8.33 billion in inflows to the biggest U.S. ETF, the Vanguard S&P 500 ETF. As a result of this crowding: low volatility stocks are trading at almost three standard deviations above the mean. That means **low-vol is more expensive than it has been nearly 99% of the time, relative to the mean, since 1990**,"
- This rush towards "safety" has had two consequences:
    - These two ETF have never been so big.
    - **With so many investors holding the same kind of positions** on the same kind of low-volatility stocks, which have rarely been so expansive, there appears to be an **extreme divergence between the defensive stocks held by low volatility funds and value stocks.**

      See chart below.



Source: JPMorgan

- The problem is that among all the index and ETF components some are far less liquid than others. And in case of an equity markets accident, typically a flash crash, some of these stocks will NOT trade… And in case you are not convinced, here is what happened on August the 24th 2015 when following the Chinese Yuan devaluation, Wall Street experienced its second flash crash in 5 years.
- Indeed, on that morning, many individual stocks were suspended and were NOT trading. This forced the ETFs liquidity providers, the market-makers, to considerably widen their Bid/Ask spreads for these products.
- Typically, when big ETFs sell orders are sent into the market, these market-makers buy the ETFs and hedge their risk by selling the stocks of the reference index components that they hold in their portfolios.
- This option being unavailable for many stocks, the ETFs pulled the US equity market in their free fall.
- The situation rapidly became catastrophic for shareholders of the POWERSHARES S&P500 LOW VOLATILITY ETF (SPLV).
- Have a look at the chart below, and, by the way, appreciate in passing the irony contained in the official name of this ETF…..

SPLV US Equity (Invesco S&P 500 Low Volatility ETF)

Bloomberg

Source: Bloomberg

- No ladies and gentlemen, this is not a typo. On the low of the day, this ETF had traded almost 46% lower than its previous day closing price!
- In the meantime, the S&P 500 was lower as well, but at most by **5,27%**. And the SPY, the biggest ETF in the world, which replicates the S&P500 index, with daily volumes of $279 Mns (the traded volume will reach $666 Mns that day of which 10% in 10 minutes at the beginning of the dive) underwent a MAXIMUM loss of **7.79%** intraday.
- Therefore the **2.52% of added LOSS of SPY compared to the S&P500 index typically REPRESENT the LIQUIDITY COST OF THE ETF.**

- But on the very same day, some shareholders of another ETF, replicating exactly the same index, the iShare CORE SP 500 ETF, went through another traumatic experience, as on the low of the day, this ETF was **25.95% down!**
- **COMPARE this to the 7.79% fall of the SPY ETF….**

- The 2 charts shown below : the SPY first then the iShare CORE SP 500 will give you a more precise idea of the **real cost of the ETFs liquidity.**

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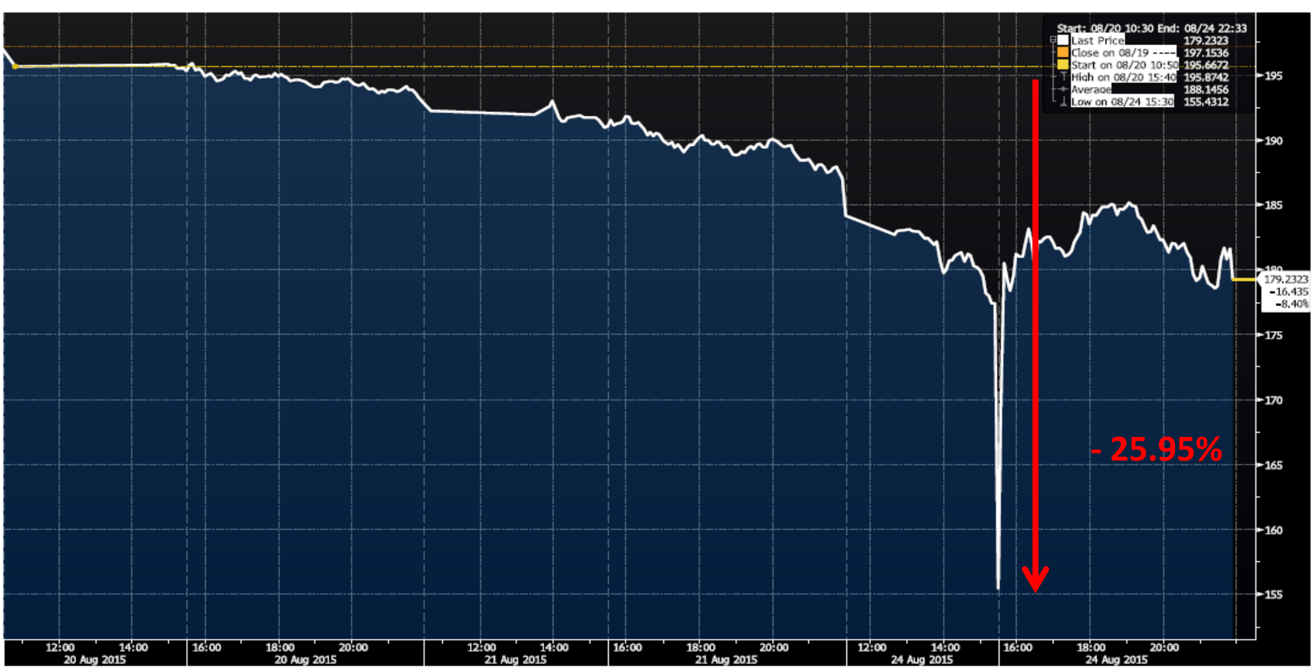
Bloomber

SPY US Equity (SPDR S&P 500 ETF Trust)

Bloomberg

IVV US Equity (iShares Core S&P 500 ETF)

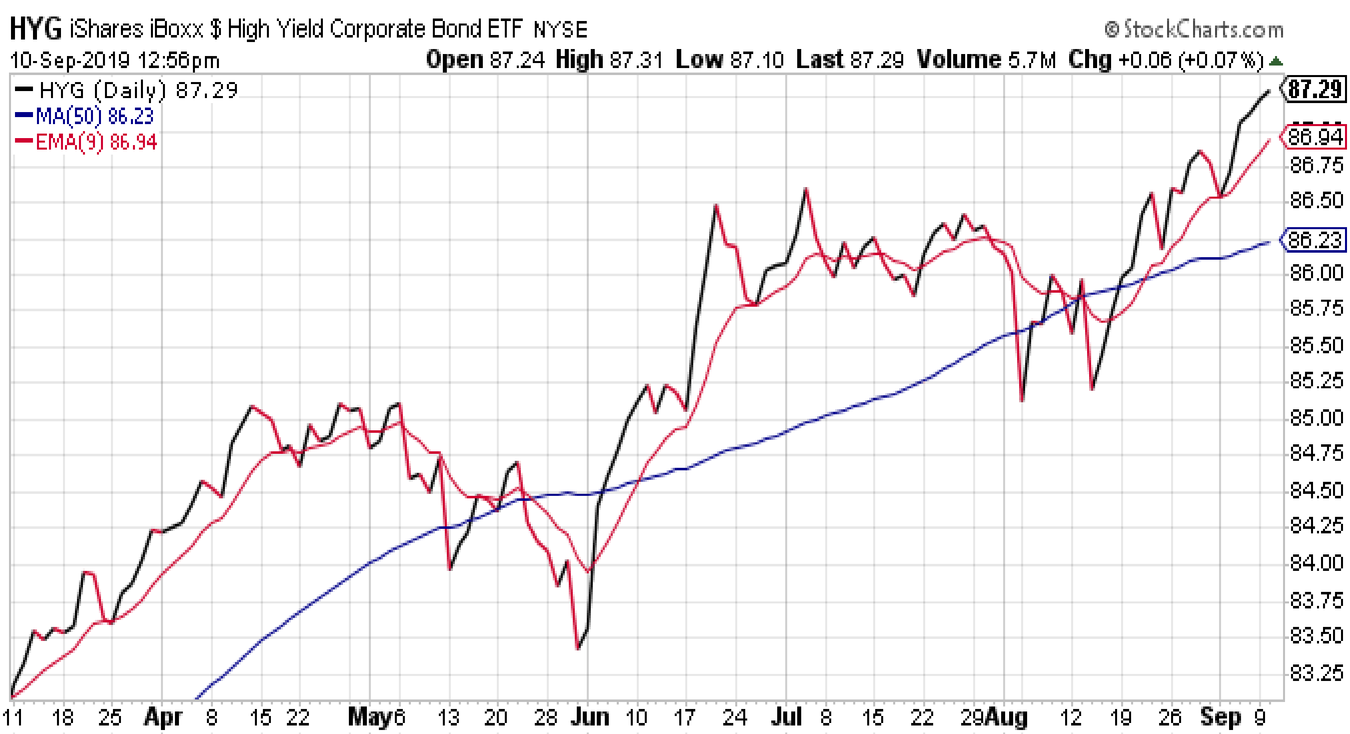


Source: Bloomberg

- **CREDIT ETF : LIQUID UP TO CERTAIN POINT…..**

- **For the credit ETP, potential problems are the same.**
  Although their structural integrity has generally stood up, so far, during times of stress, the inescapable reality of the situation is that HY and EM debt ETFs make an impossible promise to investors. **They promise intraday, on-demand liquidity against an underlying pool of assets that aren't entirely liquid….**
- During a fire sale scenario, that structural flaw will be exposed. There is no question about it. It's just a matter of "Will there every be a fire sale?" and also "How bad will it be?“

- When everything is fine it’s obviously never a problem. For example the biggest HY ETF: (iShares iBoxx High Yield Corporate Bond Fund: HYG) registered a new historic high a few days ago on the 10th of Septembe 2019… But with a market capitalization of $17 Bns, it is nevertheless very far behind the huge size of some equities ETFs… But some of the 131 components of its reference index (iBoxx) are not much bigger than $400 Mns, which in the credit sector is … not a lot….See chart below for HYG prices



- And if you are a stakeholder of this particular ETF, bear in mind that in case of financial crisis, these bonds, junk by definition, will be the first to be slaughtered. For example, at the high of the December 2018 crises, a few Europeans HY bonds considered as liquid (more than €1 Bns of outstanding amount) did not trade for days…..
- 13D research explainedd in details how ETF liquidity works: « Aps (Authorized participants) are ETF market-makers — financial institutions that deliver "a basket of securities to the ETF in the proportions specified by the index or formula that the ETF tracks," . They can also do the reverse: "Turn an ETF share into the fund in exchange for the basket of securities it holds."
- They serve an essential role in keeping traded prices in line with NAV, profiting by taking advantage of arbitrage opportunities when an ETF stock price falls below the value of its underlying assets. However, if sustained market turmoil dries up liquidity in the underlying market, therefore sapping arbitrage opportunities, will ETF market makers — motivated only by profit — take to the sidelines, sending index prices into free-fall?
- The GFC demonstrated the dire cost to markets when market makers stumble and retreat. **This is why regulations were put in place to limit big bank market-making abilities. »**

- And because of these new rules and regulations post GFC, all the big banks have drastically reduced their market-making capabilities. ETFs have mainly substituted them with big market-makers « boutiques » (Susquehanna for instance). But profits of these companies exclusively come from the arbitrages they can make. If the ETF arbitrage mechanism is under severe stress, it could totaly disappear….
- Hedge fund manager and ex-Fir Tree director Adam Schwartz, who has staked half his firm's assets along with his own cash betting **credit ETFs will soon "perish in a bloodbath" is indeed very bearsish.** This is the scenario he imagines:
- *« In a rout, where secondary liquidity in the ETF evaporates, authorized participants…will be compelled to redeem shares directly with the funds in exchange for bonds. But **they'll balk at receiving less-desirable securities**…Anxious to maintain orderly trading, the funds will give away their most liquid securities, leaving a portfolio clogged with distressed and illiquid notes. At some point, **APs will refuse to transact with the fund, sending the ETF shares into a death spiral. »***

- **CONCLUSION**

- Although the ETF liquidity problem only started to make the headlines after one of the most famous and well known US markets player expressed his opinions on the subject, it's been a while since an ever growing number of people have been aware of this issue. You'll find in the appendices several recent articles devoted to this problem.
  ETFs are a brillant invention because they allow investors to invest in markets sectors/sub-sectors/niches without having to perform any fundamental analysis, and being liquid enough they are easy to trade. But there are risks:
- ***« Retail investors, attracted to ETFs because they're easy to trade, may not realize how quickly that advantage could change,*** *» said Peter Kraus, former CEO of AllianceBernstein…"The liquidity of the ETF itself relies on market participants who actually trade them," said Kraus…"I don't think investors actually understand that risk." The Financial Stability Oversight Council (created in the Dodd-Franck act) has raised a similar concern, saying* ***the ETF arbitrage mechanism is vulnerable to breakdowns in severe market stress.***
- In our mind, although there has never been any major accident in this sector so far, Fixed Income ETF, with the massive inflows they got during the past 12 months, clearly present a fast growing risk.
- Indeed, as Howard Marks put it already a year ago: « **ETFs' promise of liquidity has yet to be tested in a major bear market, particularly in less-liquid fields like high yield bonds. »**
- **That kind of warning** has not slowed the seemingly ever growing inflows into fixed-income ETFs, especially amongst institutional investors…. At least be aware of that.

- Of course ETPs die hard fans, think Vanguard or Blackrock, claim two-tiered liquidity — exchange-level liquidity combined with asset-level liquidity — makes ETFs inherently more liquid than traditional market structures.
- But just have a look at the « Issuer » Column of the document (in the appendices) which gives you the list of the 20 biggest FI ETFs… Surprised ?

- **So maybe it's just another case of a novel market strategy. Maybe the ETFs appear forever-liquid until they're not…**

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- **APPENDICES**

- HERE IS A LISTE, NON COMPREHENSIVE, OF ARTICLES WRITTEN ON THE SUBJECT DURING THE PAST FEW YEARS.

- https://www.bloomberg.com/news/articles/2019-09-04/michael-burry-explains-why-index-funds-are-like-subprime-cdos
- Michael Burry's original interview in the Bloomberg article
- https://www.morningstar.com/articles/390749/a-brief-history-of-indexing (2011) on the history of index funds.
- https://www.cnbc.com/2019/06/28/80percent-of-the-stock-market-is-now-on-autopilot.html
- https://www.cnbc.com/2018/12/17/gundlach-says-passive-investing-has-reached-mania-status.html
- https://latest.13d.com/risks-passive-algorithmic-transformation-equity-markets-crisis-6ea6f6e9e271
- https://latest.13d.com/etf-market-crisis-qe-liquidity-passive-investing-6af295f4e667
  This one, published in December 2018 is excellent.
- https://seekingalpha.com/article/4290028-parallels-index-funds-subprime-cdos?ifp=0
- https://latest.13d.com/liquidity-new-leverage-regulation-algorithmic-investing-qt-bond-equity-markets-7b7f97c57cc5
- https://www.etf.com/channels/fixed-income-etfs 20 biggest FI ETFs : 10/09/2019.

Table 3: Top five passive mutual fund and ETF managers as of March 2018

	Overall market share (percent)*		Passive fund AUM, March 2018 ($bill.)
	March 1999	March 2018	
Vanguard	11	23	3,404
BlackRock	0	8	1,410
State Street	0	3	613
Fidelity	14	9	422
Charles Schwab	0	1	174

*Asset manager's market share for all (actively *and* passively managed) mutual funds and ETFs.