In a Bloomberg interview earlier this month, Michael Burry who came to fame as the hero of "The Big Short" for correctly identifying the mortgage and collateralized debt obligation (CDO) bubble before the financial crisis in 2008, made several comments on passive investing. As our clients know, our approach relies heavily on the use of index funds, so we wanted to take this opportunity to address some of his statements. Here are Burry's main comments (in italics) with our thoughts below:

"The recent flood of money into index funds has parallels with the pre-2008 bubble in collateralized debt obligations, the complex securities that almost destroyed the global financial system... index fund inflows are now distorting prices for stocks and bonds in much the same way that CDO purchases did for subprime mortgages more than a decade ago. The flows will reverse at some point, he said, and "it will be ugly" when they do ... 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 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."

There's a lot to unpack in those comments but, in our view, he's raising four fundamental questions about passive investing:

1) Are there parallels between the CDO bubble and passive index investing?

2) Has passive index investments created a bubble in financial markets?

3) Are passive investments more dangerous than active investments?

4) Has passive investing created other distortions in financial markets?

1) Are There Parallels Between The CDO Bubble And Passive Index Investing?

The only commonality is that they both provide exposure to a pool of underlying assets and that, at different points, they both saw dramatic capital inflows and a large increase in assets under management (AUM). Otherwise, everything else is different, starting with the simple fact that CDOs are highly complex instruments which are sliced into tranches of risks, while index funds are straightforward asset-pooling vehicles. Therefore it's not appropriate, in our view, to call passive investing a bubble and even less to compare it to the CDO bubble. As our good friend Nir Kaissar recently wrote in Bloomberg "It's a frivolous claim [that index funds are a bubble] because index funds are merely a vehicle, not an investment per se. It's like calling brokerage accounts or safe deposit boxes or wallets a bubble — it's not the container that matters, but what's inside it." It is important to understand that CDOs were not the underlying cause of the crisis. CDOs were one of multiple investment products that enabled the growth of the subprime mortgage market alongside more traditional mortgage backed securities and adjustable rate mortgages. It was the subprime mortgage bubble when combined with other factors including but not limited to low bank capital ratios, poor behavior by credit rating agencies, intertwined risk taking and lending activities inside banks, and cross contamination from derivatives contracts which led to the severity and depth of the crisis.

Further, CDOs were highly complex instruments, poorly understood by investors, mischaracterized by Credit Rating Agencies that enabled a dramatic increase in leverage by Financial Institutions; they masked their underlying risks and accelerated the real underlying problem which was the loosening of credit standards and a huge inflow of capital to subprime borrowers. By contrast, passive investing provides greater transparency to its investors than active managers, and has been generally taking money that would otherwise have gone to active equity investment managers, rather than fueling a dramatic increase in capital to a new asset class. The flows into CDOs and the flows into passive index funds are of a very different nature:

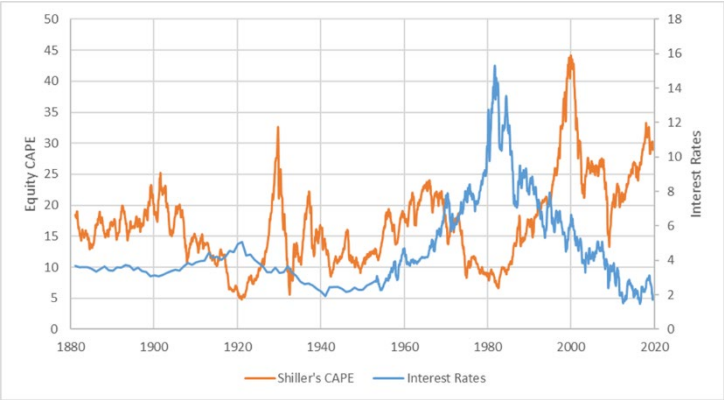
- For CDOs, investors in senior tranches were driven by greed, the promise of much higher yields vs. similarly -

- rated cash bonds. This was in part due to the failure of rating agencies to correctly assess the risk of the senior tranches. By contrast, no investor in index funds expects the fund to outperform the index; investors are merely trying to avoid unnecessary underperformance from higher fees paid to active managers.

- The higher yields of CDO tranches fueled further demand for CDOs, which in turn led to greater demand for subprime loans from banks which consequently loosened their credit standards to meet the increased demand for loans. The CDO issuers tolerated a decrease in underwriting standards because they too stood to benefit from the structuring fee. To give an order of magnitude, global CDO issuance went up from $157B in 2004 to $500-$550B in 2006 (Source: The Credit Rating Crisis, Benmelech-Dlugosz, NBER 2010). No such self-propagating issue has occurred with index funds—meaning no corporation has issued equity on the premise that index funds will buy newly issued equities. In fact, companies have actually been buying back their stock at record levels.

2) Has Passive Index Investments Created a Bubble in Financial Markets?

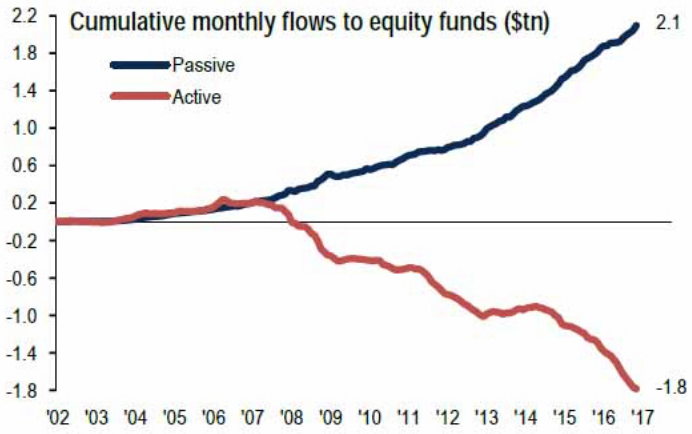
No, but financial markets are certainly overvalued. Valuations in both equity and debt markets are at extreme levels although it is debatable if either should be considered a bubble. On some metrics, stocks are as rich as they were in 1929 and 1999, however on others they only seem slightly expensive. Bond yields, on the other hand, are at the lowest they've been in history but there are macro factors including aging demographics, low growth and low inflation that are at least a partial explanation.



Source: *http://www.econ.yale.edu/~shiller/data.htm*

Shiller's CAPE measure is a valuation metric that looks at the cyclically adjusted price earnings ratio of US Equities over a 10 year period.

However, it is highly unlikely that the richness of capital markets is caused by the growth of passive index investing vehicles. While the flows into CDOs came from increased leverage and capital flowing out of other asset classes, the flows into index funds and ETFs have come from actively managed funds—meaning they ultimately went into the same place (e.g. equities or fixed income) they otherwise would have gone, just through more client friendly, lower fee vehicles. If passive index investing was the cause of the richness of markets, we would see a large positive net inflow into markets primarily through passive index funds, but this hasn't been the case.



Note: based on EPFR Global's monthly dataset (more comprehensive coverage)
BofA Merrill Lynch Global Investment Strategy, EPFR Global

Passive index funds are generally either mutual funds or ETFs but we will focus on ETFs since there have been net outflows in the mutual fund space and ETFs are the faster growing market by far. The entire ETF market globally was $5.6 trillion as of April 2019 while it stood at roughly 25% of that size or $1.4 trillion in 2011. This might seem very large, but keep in mind that global stock and bond markets total over $150 trillion in market value so ETFs still represent less than 4% of the global capital markets. Also, if one were to look at trading volumes, ETFs represent roughly the same percent of overall stock volume (between 25-35%) as they did in 2010. Further, some of the most expensive markets (ie. European bond markets) have very little passive investing. If it was indeed passive investing pushing markets higher, you'd expect to see the large passive investment participation in those markets.

Finally, futures markets which also represent a (levered) form of passive index investing have been a large fixture in financial markets for decades. In 2007 SPX futures open interest represented $260bn worth of SPX exposure, comparable to the size of SPY S&P 500 passive ETF today, yet no one (to our knowledge) points to the size of these -

- futures markets as the cause or accelerant of the crisis in 2008 or a concern today. In fact, if you look at the assets represented by SPX futures open interest and SPY together, they have only grown from $357bn in 2007 to $587bn in 2018, a 64% growth over those 11 years. However market capitalization of SPY has grown by over 100% during that same time period.

It is much more likely that excessively low interest rates and unabashed corporate buybacks are the main culprits distorting stock and bond prices. An investor's choice of structure to get access to stocks and bonds is of minor importance to the fundamental reason they are investing in those assets to begin with – that the hurdle rate (the return on cash) is so low.

3) Are Passive Investments More Dangerous Than Active Investments?

ABSOLUTELY NOT. The fear in some investors' minds, likely created by active managers trying to prop up demand for their challenged products, is that there will come a day when passive index ETFs will collapse and individual stocks will be left unharmed (or harmed less). To understand why this isn't likely (for longer than a few minutes or hours), one needs to understand that ETFs are created/redeemed through a process which allows the exchange of the basket of stocks underlying the fund to be exchanged for shares of the ETF. So if an ETF goes down in price and the underlying individual stocks do not, there are many market participants that will sell those individual stocks and use those short positions to redeem shares of the ETF, which will have the effect of pushing down the price of the individual stocks and pushing up the price of the ETF.

One other point is to understand that one of the main selling points of passive index investing is that it is a lot more tax efficient than active management for long term investors. On average, passive index investing is more likely to attract individuals who have long term horizons and won't make the same knee jerk reactions as those who invest in active managers. This, together with the certainty of paying lower fees over time, arguably makes passive index investing far less dangerous than active investing

4) Have Passive Investments Created Other Distortions In Financial Markets?

Yes, but distortions are limited to specific asset classes, and some are just occasional. We've written about this before in our quarterly commentary. Some asset classes and companies are expensive because they are included in well-marketed ETFs while other asset classes and companies have lagged behind because they are underrepresented. In other words, as Nir mentioned earlier, it's not the structure but what is inside it that matters. Take high yield and leveraged loans for example, the two larger high yield ETFs have a combined $30B in assets under management. Considering that the monthly high yield (HY) issuance is between $15B and $20B, a sudden outflow from HY ETFs could put a lot of bonds on the market. While the same is possible with mutual funds, the fact that ETFs trade intra-day could put a lot of supply on the market when institutional buyers may not be keen to transact. The Bank Loan ETFs is even more problematic, as the ETF trades instantaneously whereas the underlying loans can take weeks to settle. And here too, a sudden and unexpected outflow could have unexpected consequences. However, while these specific ETFs could create distortions in their specific asset classes at certain time, we do not see a systematic issue that could impact the markets overall.

The average daily volume of the index fund market in those asset classes has grown to be a substantial proportion of the total volume of the underlying market traded on a daily basis (almost 40% and over 10% respectively). This growth has been at least in part from new retail entrants whom now have access to asset classes that were previously dominated by large institutions.

Asset Class	Size of Underlying Market (millions)	Size of ETF Market (millions)	ETF as a % of Underlying Market	ADV of Underlying Market (millions)	ADV of ETFs (millions)	ETF ADV as a % of Underlying
Municipal Bonds	$3,850,700	$39,700	1.0%	$10,800	$343	3.2%
US Treasury/Agency	$16,403,500	$125,186	0.8%	$714,300	$3,047	0.4%
US Investment Grade Corporates	$8,826,400	$139,620	1.6%	$30,700	$1,990	6.5%
US Inflation Linked Bonds	$1,200,000	$40,607	3.4%	$16,500	$276	1.7%
US High Yield Bonds	$1,221,000	$41,893	3.4%	$7,000	$2,769	39.6%
Leveraged/Senior Loans	$1,700,000	$13,116	0.8%	$2,600	$271	10.4%
EM Bonds	$15,000,000	$28,108	0.2%	$60,000	$696	1.2%
US Equities	$27,900,000	$1,040,285	3.7%	$380,000	$44,038	11.6%
EAFE Equities	$13,410,860	$402,116	3.0%	$200,000	$5,698	2.8%
USRE	$1,302,000	$58,830	4.5%	$6,800.0	$1,753	25.8%

Sources: 2019 JPM Global ETF Handbook, 2018 SIFM Fact Book, MSCI, Reuters

Conclusion

Burry's claim makes the argument that index funds buy stocks as a function of their market cap while active managers buy them as a function of their expected return. The implication is that active managers will make better choices and outperform passive indexing. Of course, there is plenty of research that shows that it is not the case (e.g. https://www.spglobal.com/_assets/documents/corporate/us-spiva-report-11-march-2019.pdf). And should this reverse, it will be first page of all newspapers. But it's also worth remembering that market cap weighted indices, like the ones that dominate passive investing, are incorporating the views of all market participants as reflected in current company pricing into the relative security weightings. If active investors bid up Apple and down GE because one is a better business with better forward looking return prospects, this insight is reflected almost immediately in the index itself.

This raises an interesting question as to why trained professionals managing active funds cannot outperform their low cost passive counterparts. The main reason is that markets are sufficiently efficient that the additional cost required to pay active managers is greater than the edge they bring to bear in delivering added performance. Moreover, the increased availability of corporate data (both quantitative and qualitative), the advances in AI and Natural Language Processing (which allows bots to read through quarterly filings and earnings call transcripts) all contribute to greater market efficiency, resulting in fewer analysts and portfolio managers needed for price discovery.

Lastly, ETFs and index funds have evolved from purely passive (i.e. market-cap based) to thematic, sector-based and "smart-beta" funds. If small cap value stocks are cheap as Michael Burry suggests, it is now possible to invest in them through a low cost ETF or fund.

The equity market is, no doubt, increasingly technically driven. Algorithmic trading, factor model investing, and, yes passive investing, will change the nature of returns going forward.

And there may indeed be more opportunity as capital in active strategies decline for fundamental research to gain an edge in certain pockets of the market. And in some markets, such as leveraged loans and high yield as mentioned above, or volatility, given the foreseeable failure of inverse VIX ETFs, investors should be very wary of passive ETFs and index funds. But, in our view, to paint the entire passive investment landscape as dangerous is woefully misguided. Passive investing is, in our view, clearly the best way for investors to get core diversified long term exposure to risk assets in their portfolio.

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