

ETFs:

Correlation, Causation, & Confusion | Clark, Behette, Dale, Vidot



At the intersection of markets and technology, Insights provides ITG's global perspectives on market structure, analytics and research, and liquidity.

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Over the past several months, as markets have ridden the European Debt Crises rollercoaster, there has been a growing outcry over the alleged harm being done to markets by Exchange Traded Funds, or "ETFs". Critics of ETFs have claimed they do everything from increase volatility and correlation, to create new systemic risk, and even to undermine the critical market for initial public offerings. The recent drumbeats have become so loud that industry powerhouses, such as Blackrock, have been forced to defend the integrity of the product.

While the ETF world has seen rapid innovation and growth over recent years, leading to some new products of questionable design and stability, the traditional cash-based index replication ETF is tried and tested. We believe it does not deserve the many charges against it. Below, we examine perhaps the most curious criticism: that ETFs have created a correlation bubble. While we can not prove with scientific certainty that ETFs aren't a key driver in historic stock correlations, we offer data and arguments to better inform the conversation.

To understand the potential impact ETFs may have on the marketplace it is important to first understand the relative size of the products. According to Blackrock's most recent ETF Landscape report,¹ at the end of the first half of 2011 there were 2,825 ETFs globally with total assets under management ("AUM") of US\$1.442 trillion. Of this, US\$1.151 trillion were in equity-based ETFs. This number has grown by 58% since the end of 2007. This awesome growth in ETF assets is often used as proof of the growing impact that ETFs have on our marketplace. However, it is vital to consider not just the total AUM in ETFs, but also in all index products. While total AUM in indexed assets is a difficult number to produce – it is tricky to account for closet indexers and other non-declared index replication strategies – we will argue that total assets replicating equity indexes have not risen dramatically over the last few years.

Chart 1 below shows the estimated AUM for a variety of S&P and Russell-based indices as of the end of 2006 and 2010. While the AUM of the S&P based ETFs (and ETFs in general) has risen sharply, the AUM of the indices has decreased. S&P estimates that during this time the total assets benchmarked to (not strictly replicating) the S&P 500 grew modestly from US \$4.91 trillion to US \$5.58 trillion. (Other global indexers have suggested their numbers would likely show the same trends.)

Chart 1: Index AUM, 2006 & 2010

AUM (\$US Billions)		
Index	2006	2010
S&P 500	1,315	1,318
S&P US Indices	1,449	1,439
S&P 500 ETF	109	172
Russell 1000	77	94
Russell 2000	332	286
Russell 3000	203	148
Russell Total	612	529

[Source S&P and Russell]

¹ <http://www.blackrockinternational.com/CompliancePage/index.htm?originalUrl=/InstitutionalInvestors/InvestmentInsight/ETF-Landscape/index.htm>

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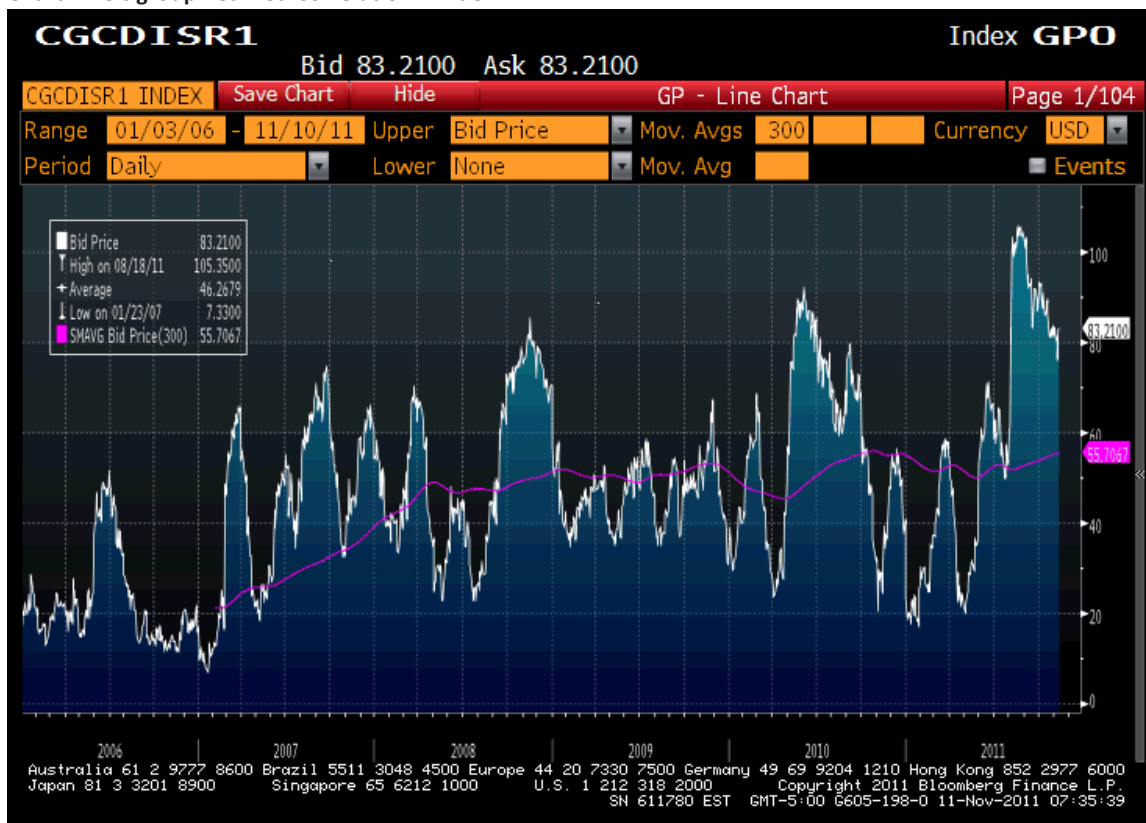
So why do we care about the total funds replicating or indexed to various indices? Correlation is caused by investors all buying or selling groups of assets at the same time. The act of buying an ETF theoretically has the same market impact as buying any other index replication product. Whether you buy an index mutual fund, ETF or derivative product that product will eventually be hedged out with a position in the underlying cash markets. If investors decide en masse to swap out of S&P 500 based mutual funds and into S&P 500 ETF product the intermediate to long term impact on the market should be nil. (There will be short term churn as mutual fund providers and ETF market makers hedge their positions).

While the net percentage of passive investments may have increased during market selloffs – flat AUM during a large market sell off equals a higher net percentage of the market – the percentage of passive investments accounted for by ETFs remained relatively low.

So if ETFs aren't causing correlation, what is? Charts 1 and 2 below depict the stock price correlation in the U.S. markets. The first is a Bloomberg chart depicting the Citigroup Realized Correlation 1 Index (which measures US stock correlation). We clearly see that correlation has exploded upwards in the last few years. We also discover how volatile correlation is. Any student of recent economic history should be able to look at the chart and identify the underlying driver of the largest spikes – whether it be Bear Sterns, Lehman Brothers or the Greek debt crisis crisis.

Those that blame ETFs for correlation are ignoring the impact that technological innovation has had on market liquidity and investor ability to inexpensively trade the world at unprecedented speed. Arguably, it is this very change that has facilitated the growth of the ETF industry.

Chart 2: Citigroup Realized Correlation 1 Index



[Source Bloomberg]



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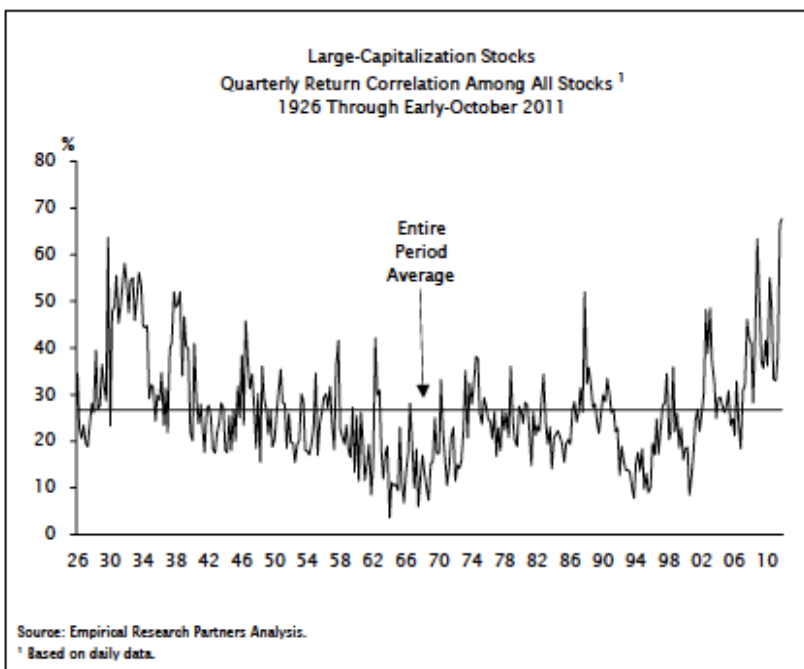
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Chart 3: Correlation of US Large Caps 1926 - 2010



If we look at a longer term chart – the one to the left (created by Empirical Research Partners) shows the correlation of US large cap stocks going back to 1926 – we see correlations trading at or near all time highs. Again any student of economic history can easily identify the spikes with economic events such as the Great Depression, the Oil Embargo, Long Term Capital, the Asian Contagion and Lehman Brothers bankruptcy. The recent correlation charts look very much like the charts of the mid 1930's, almost 60

years before the first ETF was created in Toronto, Canada. (The TSX 35 Index participation fund started trading in March 1990).

Correlation is a result of macro factors outweighing micro factors in stock valuation. When large economic events cause investors to rethink the risk premium they place on equities or cause consumers to spend more conservatively then all equities will act in sync. As markets have become more global the impact of a single event affects more companies. The recent tsunami in Japan disrupted the supply chains of scores of companies, which further impacted hundreds more. What ETFs have created is a quicker, more liquid instrument for investors and speculators to trade on these disruptions. Compared to the older, more mature, futures market ETFs offer a simpler, and often cheaper, vehicle for buying market beta. While this may result in more violent moves immediately after a surprise event, there is little or no evidence that it results in increased correlation lasting beyond a few trading sessions.

Finally, we would suggest that any unjustified or artificial increase in correlation – a move driven by market mechanics, as opposed to a change in market risk or a true increase in correlation of earnings – creates investment opportunities for informed investors. Passive investors create value by wisely choosing where to invest, either geographically or by asset class, while active investors create value by defining relative value within a geography or asset class. Artificial changes—in prices, correlations, or anything else—revert to the mean eventually.

While the growth of ETFs is not without issues—indeed Blackrock's call for a tighter definition of ETFs to help prevent poorly-designed structures from harming the industry²—we don't believe a convincing case has been made that ETFs cause increased correlation. The growth of ETFs has not repealed the law of gravity. Recent high levels of correlation are driven by macro events and will eventually return to a more normal level.



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² https://www2.blackrock.com/webcore/litService/search/getDocument.seam?venue=FP_GENERIC&ServiceName=PublicServiceView&ContentID=1111150014



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