MOAD: The Mother Of All De-leveraging

First Quarter Review and Outlook

Most quarters I like to lead off with some glib comment about the recent market activity, economic conditions, or other social commentary. This is not one of those quarters. The world has been struck by an epidemic of a level not seen since 1918. The human cost has been terrible, with thousands afflicted every day, while at the same time, necessary measures to arrest the further spread of the disease take from us the comfort of companionship that we rely on in such times. Everyone has been affected in some way, if not directly by the disease, then indirectly.

The tragedy aside, from an societal perspective, the effect of the COViD-19 outbreak has been dramatic. The crisis has exacerbated many trends that were already in place, many not for the better. The wealth gap. The demise of the local retail store. De-globalization. And in combination with disagreement on production cuts among OPEC member nations, a turn away from fossil fuels as an energy source.

A critical accelerated trend is the overall direction of the global and domestic economy. Even before lockdowns were put in place, economic leading indicators such as Purchasing Manager Indices (PMIs) and inversions of the yield curve argued that the US economy was headed towards a summer recession. With the adoption of social distancing and a lockdown of many businesses, the discussion is not if but how deep.

Market activity has reflected these concerns. While you can describe the volatility of the equity market as "never seen before", a better description is a combination of several different past market episodes combined. The market behavior of 2020 combines features of the Global Financial Crisis of 2008-2009, 9/11, the technology-led market of 1999-2000, and other, smaller market events.

Small Cap Equity Review

For our own small cap equity strategy, there is no escaping the reality of performance during the quarter – we struggled. The small cap strategy had the worst quarter in our history and suffered the 2nd largest drawdown in our history. Past experience tells us that this will be followed by a period of outperformance. As with anything, time will tell, but evidence is there.

Over the nearly eleven years we have used our process to manage the small cap equity strategy, investors have often asked is under what market conditions will our process underperform. Our answer has been consistent: the process has been designed to deliver outperformance in all market environments. However, spikes in volatility often cause short-term underperformance in our strategy due to characteristics of our stock selection criteria.

Our stock selection process is built on information. Specifically, we aggregate analysis of data and behavior from well-informed segments of the market: management, investors, and analysts. The idea is that taken together these sources will provide a broad-based, stock specific perspective on each company's future.

When volatility spikes, one of the sources of our informed analysis, investors, is no longer driven by information, but by the need for liquidity. Investors on the short side are a key component of this analysis, and many of these investors have leveraged portfolios that target certain risk levels. When volatility spikes, risk levels go up, margin requirements rise, and these portfolios are forced to sell positions, both long and short, to satisfy margin requirements and bring their risk level back to the targets their investors expect.

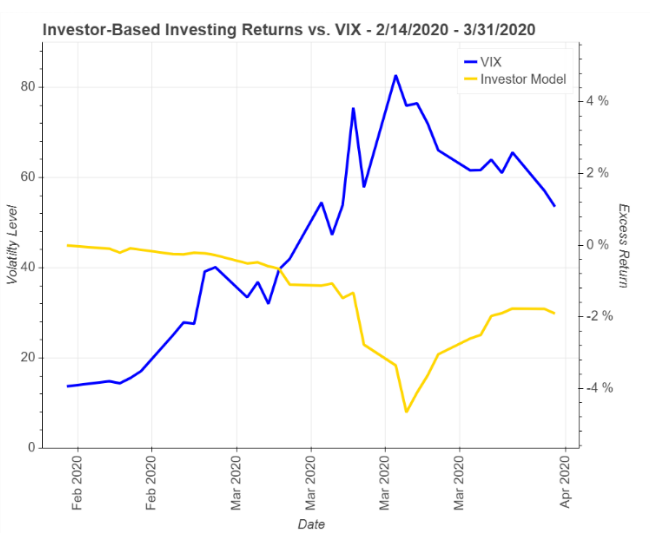
When this happens, our signal is no longer driven by information but by the need for liquidity. These informed investors are closing these positions based on how easy or liquid they are, not because of their beliefs on how the stocks might perform.

The results are clear. As the coronavirus crisis unfolded, market volatility levels rose slowly off low levels. The VIX rose from the mid-teens to the low 30s by early March. As the extent of the spread of the virus became apparent and measures to combat the contagion began to take place, the rise in the VIX accelerated, peaking at over 82 on March 16th. (blue line in Figure 1)

This accelerated rise triggered a de-leveraging among long/short investors at levels unseen before. Our investor-based model, unhinged from the valuable source of information provided by informed investors, was now driven by a quest for liquidity. Over one week, the investor-based segment of the strategy underperformed by nearly 5%. (gold line in Figure 1)

By March 18th, the deleveraging was complete. The dust did not settle right away. As the deluge of selling and covering subsided, market action reversed, and these same affected stocks rebounded. Through the end of the quarter, these positions recovered more than half of what they had lost.

Figure 1 – The COVid Crisis



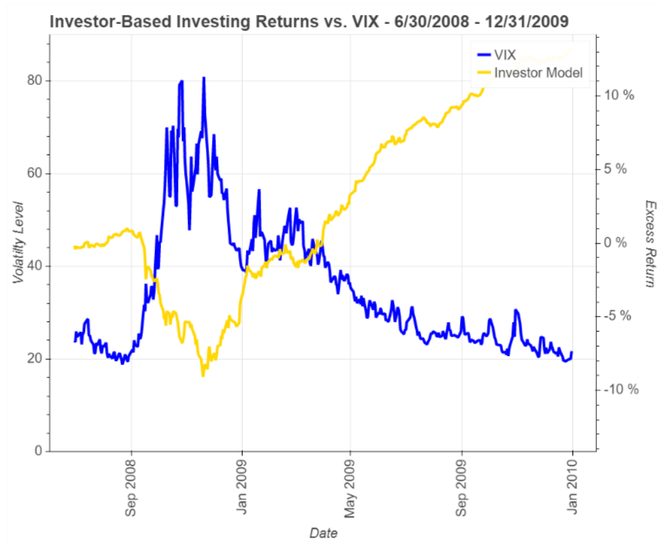
We are aware of this behavior because we have seen this cycle before. In several past instances volatility rose and our investor-based analysis suffered. In every past case, once the volatility had subsided, this same component of our strategy would recover and, in most cases, exceed that by which it had underperformed.

The Global Financial Crisis

The greatest example of the volatility/deleveraging phenomenon was from the Global Financial Crisis of 2008 and 2009. While volatility moved around a bit during the summer of 2008, the breaking point was the Lehman collapse in mid-September. The VIX exploded from the low twenties to the 70s in a matter of weeks, peaking at 81 on November 20th. In those two months, the Investor-based segment of our strategy (the gold line) underperformed by 10% as investors delivered their portfolios in response to higher volatility expectations.

November 20th was the turning point (for volatility, not for the market, which would not bottom until March). As the VIX fell, the volatility futures curve slope rose above -2 in December, and our investor-based model began to deliver performance again, dramatically. From then through the end of June, this segment of our process would not only make back the 10% it has lost but add another 6% on top of it.

Figure 2 - The Global Financial Crisis



US Debt Crisis

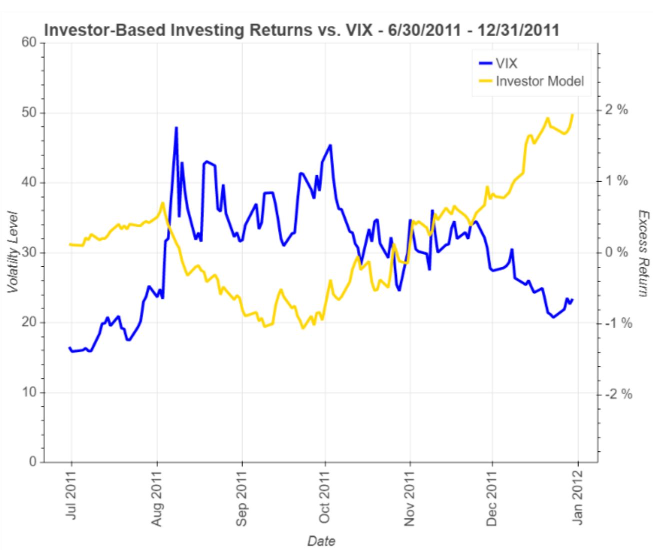
In the fall of 2011, Congress and the US President battled over government spending and the use of the debt ceiling limit as a political weapon. Republicans in Congress refused to authorize an extension to the debt ceiling and thus the ability of the government to operate and disburse funds. After much negotiation, a compromise was reached and on July 31, 2011 a spending bill was approved and signed to prevent a government shutdown.

Episode	Volatility Cycle Start	Peak	End	VIX Peak	Returns Before Peak	After Peak
Global Financial Crisis	Sep 2008	Dec 2008	Dec 2009	82	-10.0%	22.0%
U.S Debt Crisis	Aug 2011	Oct 2011	Jan 2012	48	-1.6%	3.0%
China/Oil Tubulence	Sep 2015	Feb 2016	May 2016	41	0.8%	3.8%
VIX ETN Implosion	Feb 2018	Mar 2018	Jun 2018	38	-0.5%	0.5%
COViD Crisis	Feb 2020	Mar 2020	??	82	-4.0%	??

Financial markets were not amused, and on August 5th, Standard and Poor's downgraded the rating on US government debt from AAA to AA+. Market sold off worldwide, volatility spiked, and the volatility curve went negative, indicating long-term concerns.

The de-levering in this instance was mild but returns to our investors-based segment of our process did underperform by just short of 2%. By October, the concerns had subsided, the volatility curve began to stabilize, and our investor model began to deliver again, gaining 3% by the end of the year and 4.5% by the next summer.

Figure 3



The strategy experienced two other volatility episodes over the last ten years. In late 2015 through 2016 volatility was triggered by a combination of fears of a Chinese currency devaluation, and a credit cycle related to a rapid decline in the price of oil. The second one was the implosion of VIX-based volatility ETNs in February of 2018. In both cases the same pattern held true: short term weakness, followed by a rebound and further rise.

Performance

In the 1st quarter of 2020, the Vitruvian Small Cap Equity Strategy returned -35.57%, underperforming the Russell 2000 index return of -30.61% by 4.96%.

Most, if not all the performance can be attributed to the de-leveraging event we described above. In addition, direct effects of the COViD crisis and the economic response also affected the portfolio. Overweights in energy, underweights in pharmaceuticals and health care technology detracted from performance, while absence of any hotel and leisure positions as well as an underweight in banks were beneficial. On the margin we leaned toward lower leverage firms during the quarter. Overall, performance not related to the deleveraging was positive.

Most of the individual stock performance was distributed across the positions of the portfolio. A notable contributor was Inovio (INO), a pharmaceutical firm in the thick of the race for a coronavirus vaccine. On the other side was Performance Food Group (PFGC), supplier to restaurants, a business that has born the brunt of the lockdown.

Outlook

We expect that performance of our strategy will mimic the same patterns we have seen in the past – short, dramatic bout of underperformance followed by a more gradual but ultimately greater period of outperformance.

Moderating volatility levels are an important driver of performance. As long-term expectations of volatility decline, more trading will be driven by the information contained in informed investor holdings, and any re-leveraging of long-short portfolios will only create further support.

There may be fits and starts as setbacks are encountered, such as a 'second wave' of infections. Generally, these relapses do not trigger second rounds of de-leveraging. The trades were made based on long term levels of volatility, and margin requirements are already elevated. There is little de-leveraging left to do.

Beta and Alpha

While small cap stocks have always been a good market segment for stock selection, the crisis has also improved the outlook for small cap stocks as an allocation.

The last several years have seen considerable underperformance by small cap stocks relative to large, typical for periods of moderating economic growth. Large cap stocks such as technology and health care have more reliable earnings growth, and as that growth becomes scarce, investors move towards these positions. Small cap stocks have more cyclical, economically sensitive companies in the industrial, financial, and real estate sectors.

When COViD-19 crisis struck and we went from a moderating economic environment to a contraction. exacerbating the small versus large performance gap. At the end of March, The Russell 1000 index of large and mid-cap stocks lost 20.22%, 10% less than the Russell 2000 Index. This comes after 2019, where larger stocks outperformed by 6%, and 2018 where large caps outperformed by 6% as well.

This extended underperformance leaves small cap stocks with an even larger gap in valuation versus large caps. Using Price to Book, *small caps have a lower relative valuation to large caps since any time since 2001!*

Eventually all economic cycles turn. During such recovery phases is when small cap stocks shine. The cyclical stocks that populate small cap indices rise with the fortunes of the economy, often in anticipation of the better times ahead.

The last time small cap stocks outperformed large cap stocks was 2016. Coincidentally, 2016 was a period where the economy recovered from a mild downturn related to energy and emerging market weakness. Small caps also led markets out of the downturn of the Great Financial Crisis during the three final quarters of 2009.

With the combination of dramatic underperformance of small cap stocks, a historical valuation discount versus large caps, and an impending recovery in economic activity, <u>small caps are posed for an extended period of outperformance</u>. While it is difficult to tell when the effects of the coronavirus will abate, and markets will recover, within any investment plan, small caps should be a larger share of the equity allocation.