Executive Summary

WHEN THE DUST FLIES...
How Volatility Events Affect Asset Class Performance

April 2018

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We investigate asset class performance before, during and after sharp increases in equity market volatility, and examine specifically how stocks and bonds perform during such events and whether asset class performance leading into such an event is different than after the event.

We define two types of volatility events: “spikes” and “post peaks.” A volatility spike event is a significant, sudden increase in volatility, and we measure asset class performance while “the dust is flying.” In contrast, a volatility post-peak event is a period of high volatility that is followed by volatility returning to its pre-peak level, and we measure asset class performance “after the dust has settled.” While both types of events are of interest to investors, some may act at the onset of a volatility event (i.e., a spike), whereas others may wait until market volatility has calmed (i.e., after the peak). An investor can identify both events contemporaneously, using currently available information. Consequently, any investment decisions made in reaction to these volatility events are implementable.

History shows that while spike events produce large negative returns for equities and credit bonds (with positive returns for Treasuries), markets recover relatively quickly, approximately by the seventh month following the spike month. While the increase in volatility and accompanying equity and credit market declines may be unnerving to some investment committees, these investors may wish to wait until the “dust settles” – either out of caution or time needed for deliberation – before re-examining their investment strategy. Once volatility has smoothed out, equity and credit markets tend to perform well, often better than before the volatility event.

Identifying Volatility Events

There are many possible ways to define a “volatility event,” and we consider two types:

1. VIX Spike Event. A VIX spike event is a significant, sudden increase in the VIX. An example might be a 1.5x change in the average VIX over two months. Some investors may view a spike event as an immediate signal to act, even though it is unknown whether the volatility event is transitory or a harbinger of further increases.

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Volatility may continue to increase, producing consecutive spike events, one month after the next.

2. VIX Post-Peak Event. A VIX post-peak event occurs when, after a period of several months, the VIX has fallen significantly from its recent peak toward pre-peak levels. The post-peak event period includes the two months leading into the peak month and the nine months following the peak month. Consequently, we assume a post-peak event has a duration of 11 months.

We examine equity market volatility events (both spikes and peaks) over the past 68 years, spanning many market environments, including 26 volatility spike events and 25 post-peak events (Figure 1).

We examine broad equity and bond market performance pre- and post-volatility spikes. Figure 2 (left panel) shows that on average, equity markets displayed similar 21-month cumulative performance both before and after spikes. The average S&P 500 cumulative monthly total return at the end of the pre-spike period was 20.3%, and a bit higher, at 26.7%, in the post-spike period. Figure 2 (right panel) provides results for the individual spike events. Of the 15 events covered by the S&P 500 index, only one event (8/07) has a significant negative return in the post-spike period. This event had the misfortune that its post-spike period included the 2008 financial crisis. Our definition of a spike event does not rule out the potential for further increases in volatility following the initial volatility spike.
We also looked at the broad equity and bond markets preceding and following post-peak events. Figure 3 (left panel) shows that equity markets displayed similar performance both before and after post-peak events. The average S&P 500 cumulative total return at the end of the “quiet” period was 21.7%, and higher at 25.3% in the “dust settled” period. This seems to suggest that reducing equity exposure in reaction to a traumatic volatility spike event may not be a good strategy. Figure 3 (right panel) shows that average credit market excess returns were broadly similar between the “dust settled” and “quiet” periods. Average HY and IG cumulative excess returns were 13.6% and 1.7%, respectively, in the “quiet” period, compared to 10.8% and 3.0% in the “dust settled” period. 10-year Treasury returns were stronger in the “quiet” period with cumulative total returns of 14.8%, but only 6.5% in the “dust settled” period.

Note: In the “quiet” period prior to the start of the post peak event (month \( t_{0-2} \)) we measure cumulative monthly returns beginning in month \( t_{0-22} \) up to and including \( t_{0-2} \), a 21-month period. In the “dust settled” period after the end of the post peak event (month \( t_{0+9} \)) we measure cumulative returns beginning in month \( t_{0+10} \) up to and including \( t_{0+30} \), also a 21-month period. The vertical grey bar represents the 11m period between after the “quiet” period ends and before the “dust settled” period begins.

Source: Barclays POINT, Datastream, FRB St. Louis (FRED), Global Financial Data, PGIM IAS.
All asset classes are less volatile in the “dust settled” period compared to the “quiet” period. This is opposite to the pre- and post-spike period volatilities in which the volatility pattern was higher after spike events. This result highlights that market volatility in the “dust settled” period has materially declined from the level before the volatility event. The “dust has clearly settled.”

**Conclusion**

For post-peak events, while the markets behave similarly to spike events around the peak month, our attention is on asset class performance after the dust has settled, as this may be when investment committees re-evaluate their portfolio allocation and may take action. History shows that once the dust has settled, equity and credit markets tend to perform well, often better than before the volatility event.

The evidence from both types of volatility events suggests that the damage from those periods is transitory and is likely to be repaired after a reasonable period. These results provide support for investment committees who intend to “stay the course,” and possibly re-balance with increased allocations to risky assets.
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