

# Neuberger Berman Option Group

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What has transpired over the past 20 days was largely uncharted territory and we believe most investors are still without clarity about what lies ahead, so we wanted to share our latest thoughts and observations.

## Strategy Performance

While uniquely dramatic and unsettling, recent equity market declines have not led to results outside of our strategies' histories nor to losses in excess of the strategies' expectations. On the contrary, recent events may ultimately mark the beginning of one of the better investment environments for our disciplines in over a decade. With the S&P 500 down over -25% YTD (in the midst of a -29% pull back), and the CBOE S&P 500 Volatility Index ("VIX") up over 400% in the last four weeks to highs that have not been seen since 2008-'09, our strategies have held up against both their underlying equity indexes as well as their respective option-based strategy indexes.

The sudden increases in market volatility combined with losses in the underlying indexes over the last few weeks can result in daily returns that follow the broader initial sell-off in equities. It's important to remember a notable portion of losses are mark-to-market losses resulting from the increase in option time values (the strategy is short the options) that occurs when implied volatility levels (e.g. the CBOE S&P 500 Volatility Index) jump. Given our option writing strategies seek to profit from higher implied volatility levels, we believe our strategies are designed to weather the infrequent, yet abrupt, transitions from low volatility regimes to higher volatility regimes.

At current levels of implied volatility, the CBOE S&P 500 Volatility Index ("VIX") in the 70's, our strategies are designed to collect substantial premiums of around 7-8% for writing (selling) 30-day options. That's approximately 75-90% annualized. Prospectively, we believe these premium levels afford the strategies both the ability to earn back short-term losses and an opportunity to earn meaningful profits as the markets remain volatile and equities sort through fundamental issues. Working through these issues should be volatile, providing our strategies with the volatility they seek to thrive on.

## Strategy Implementation

Over the past 10 years we have consistently cautioned investors about strategies that try and navigate the 'derivatives triangle' which we define as leverage, complexity and tactical positioning. In our experience, a mix of all three can lead to potential ruin during extreme market environments, e.g. now. While our systematic unleveraged option writing may seem overly simplified at times, its merits tend to shine bright during periods of prolonged market stress. Our biggest challenge is often patiently waiting for periods of prolonged market dislocation. With one of the most extreme environments now unfolding, our processes and strategies have navigated this environment as we would have hoped.

Liquidity has been ample with option markets supporting significant volumes (\$800 billion in S&P 500 Index option notional on March 13th) despite material changes to their operations. All option settlements and assignments are being processed in normal course with oversight from the Option Clearing Corp. ("OCC"). Short-term U.S. Treasuries held in collateral portfolios have profited during the sell-off in risk assets and there has been ample liquidity to sell short-term U.S. Treasuries to cover option settlements. We believe the key to long-term profits in option writing is being able to write through the storm. While this is a category 5 hurricane, our underwriting business is running at full strength. If a strategy hopes to profit from periods of market stress, then it must be able to first survive the storm.

## A Historical Perspective

Equity market declines and spikes in volatility are not unprecedented in the U.S. equity markets. However, given the combination of the speed of the sell off and the jump in equity volatility, 1987 seems the most analogous. In 1987, the S&P 500 sold off over -30% in an 18 day period through Monday October 19th, while the CBOE S&P 100 Volatility Index ("VXO")<sup>1</sup> closed at an astounding 150. We would note that option markets were markedly different in depth and breadth in 1987 so it's reasonable to think 150 is not a modern day comparison and we suggest the VXO 2008/09 closing high of 87 as a more appropriate reference level for comparison.

Much of the turmoil of 1987 was attributed to portfolio insurance strategies that systematically sold futures as the market declined which fed back into itself. During the sell-off, the CBOE S&P 500 PutWrite Index ("PUT") declined approximately -29%. As you might imagine, the shock was rather long lasting as the VXO Index averaged over 36 for the subsequent 180 trading days from October 1987 to July 1988 with the PUT Index outperforming the S&P 500 Index by approximately 16%, rebounding +36% versus just +20% for the S&P 500.

For comparison, in the current sell-off, the S&P 500 has lost -29% in the last 18 days with the CBOE S&P 500 Volatility Index closing at its all-time high of 82.7 (VIX closed at 93.8) and the CBOE S&P 500 PutWrite Index declining 27%. Given the current stress mounting in the financial system and growing uncertainty as to the duration and depth of the damage to the global economy, it's likely the elevated levels of implied volatility will be with us for the remainder of the year.

While we have no way of predicting the strength or duration of a potential recovery, we believe the steadfastness of our strategies has them positioned to benefit investors. Having spent years toiling away in a world of waning volatility and VIX averaging well below its long-term average of around 19; at the risk of sounding too positive, we are eager to be selling/writing options on behalf of clients at VIX levels north of 50. As we stated at the beginning, we believe most investors are still uncertain and fearful about what lies ahead, but we believe that we are in a position to convert that uncertainty and fear into return.

<sup>1</sup>The popular CBOE S&P 500 Volatility Index ("VIX") only has data available from 1990.

Source: Bloomberg LP, Neuberger Berman

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