2021 Investment Outlook

Managing Portfolio Risk During a Period of Equity Highs and Interest Rate Lows

Market Backdrop

The pandemic drove the S&P 500 Index to drawdown significantly in Q1, with the index making a full round trip by Q3 and ultimately finishing the year up over +16% driven in large part by the strong positive momentum in the technology sector. Equity investors benefitted from the recovery after Q1, while bond investors squeezed out the last bit of total returns from their holdings as the Fed took interest rates to near 0%. As we begin 2021, stocks remain at record highs while interest rates are at all-time lows—clearly this current market environment does not set up well for the traditional 60/40 portfolio. Investors who relied on the long-held assumption of consistently negative correlations between stocks and bonds may find it challenging to produce similar results for their portfolios vs. previous years to the extent that markets begin to normalize.
Across major Wall Street firms, the consensus estimate is for a positive return for the S&P 500 Index in 2021—though with a less bullish tilt relative to last year. Morgan Stanley’s house view, per Mike Wilson, is that the S&P 500 Index will close this year at a level of 3,900—implying a 3.8% 2021 return for the S&P 500 Index, putting our House view squarely in the sideways market camp. Separately, equity volatility has reset somewhat higher relative to what we saw at the start of 2020. Within the interest rates space, it is also well documented that inflation continues to become an even more prevalent driver of nominal yields.

Against this backdrop, investors interested in new ways to not just create, but also to protect their wealth, may want to consider risk management tools which do not rely solely on the equity vs. rates diversification assumption. Rotation from Delta-1 equity strategies into select structured investment strategies may provide a downside buffer, to the extent markets selloff, and also leverage on the upside, to the extent markets trade sideways. Active managers may also seek out opportunities in this space by tactically allocating to select structured investment issuers to achieve more favorable upside terms at trade given the divergence in credit spreads of U.S. vs. non-U.S. banks.

**View Into Equity Volatility**

Coming out of 2019 and into early 2020, volatility (“vol”) remained subdued and then, not surprisingly, both realized and implied volatilities exploded higher as the pandemic-driven market drawdown accelerated through March. Traditionally, the term structure of volatility is upward sloping, the intuition being that longer-dated options should theoretically command a higher premium spend as they have more time to trade in-the-money. That said, this relationship doesn’t always hold as we typically see the largest reactivity to market events expressed at the front of the volatility curve. This played out in March with the S&P 500 Index (“SPX”) 100% at-the-money implied volatility term structure sharply inverting across the first three years of maturities (see Display 1)—with 1-month implied volatility closing out March at 46.7, well over 30 points higher from where it started in 2020.

**WHAT DID THIS MEAN FOR INVESTORS?**

In the short-dated options space, the extreme richness at the front of the curve in the first quarter made buying options a very expensive proposition, but clearly for option sellers the opposite rang true—
with some investors harvesting elevated option premiums by implementing short options trades.

After Q1, the V-shaped recovery almost immediately took hold as the S&P 500 Index rallied back in Q2 and made new highs as we moved towards year end. As markets recovered, volatility began to normalize, given its mean-reverting tendency over the long term. That said, despite volatility coming down throughout the remainder of 2020, the spread between the VIX Index and the S&P 500 Index 30-day realized volatility has remained positive and trended upwards near year end (see Display 2).

**WHAT’S DRIVING THE IMPLIED VS. REALIZED VOL DECOUPLING?**
With the VIX Index over 20 at the end of the year, it’s become clear that options investors are not complacent and instead have been buying index options for protection. Protection buyers have pushed up the SPX put/call option ratio as well as SPX 3-month 95%-105% skew (see Display 3)—indicating investors were positioning more defensively in the S&P 500 Index option space in the run up to 2021.

**DISPLAY 2**
*Positive End of Year SPX Implied Volatility vs. Realized Volatility Spread*

| Absolute Spread = VIX Index Level - Rolling 30-Day S&P 500 Index Realized Volatility |

![Graph showing positive end of year SPX implied volatility vs. realized volatility spread](image)

Source: Bloomberg; Data as of 12/31/2020

**DISPLAY 3**
*More Defensive Investor S&P 500 Index Option Positioning Heading Into 2021*

| SPX 3-Month 95%-105% Skew vs. SPX Put/Call Ratio |

![Graph showing more defensive investor S&P 500 index option positioning](image)

Source: Bloomberg; Data as of 12/31/2020
**HOW DOES THIS IMPACT IMPLIED VOL?**

Against this backdrop, implied volatility has been both elevated and somewhat sticky, with numerous days in 2020 exhibiting the counterintuitive “spot-up-vol-up” dynamic.

Conversely, when we look under the hood of the S&P 500 Index, we’ve seen higher dispersion relative to prior years across index constituents, which has pushed realized volatility lower (despite implied volatility remaining elevated).

**WHAT’S THE INTUITION BEHIND THIS?**

The COVID-19 pandemic has exacerbated the difference between strong vs. poor performing sectors in an extreme way. As a proxy to help illustrate this, we show that the correlation between Growth vs. Value stocks has never been lower in recent history (see Display 4), with episodes over 2020 of the rolling 30-day correlation between the Russell 1000 Growth Index vs. the Russell 1000 Value Index flipping to negative—a highly unusual event.

**WHERE DO WE GO FROM HERE?**

In 2021, to the extent that there is a continuation of low constituent correlations—this could act as an anchor for realized index volatility given the continued uncertainty around the success of the COVID-19 vaccine rollout and the sector-level implications of a new Democratic federal government. On the implied volatility front, despite term structure normalizing after the sharp Q1 inversion, the curve remains higher across the board vs. December 2019 and is notably flat beyond the 3-month tenors—implying investor expectations of extended higher implied volatility moving forward. All-in, we remain constructive on select S&P 500 Index-linked investments that implicitly express a short implied volatility position—specifically in the 1-2 year tenors—which may benefit from the dynamics mentioned above, all else held equal.

**DISPLAY 4**

High Constituent Dispersion Has Anchored Realized Index Volatility

_Rolling 30-Day Correlations of Russell 1000 Growth Index vs. Russell 1000 Value Index_

Source: Bloomberg; Data as of 12/31/2020

**DISPLAY 5**

All Global Developed Central Bank Interest Rates Are Now Floored At Zero Or Negative

_G4 Central Bank Interest Rates (U.S., Europe, Japan, & the U.K.)_

Source: Bloomberg; Data as of 12/31/2020
Interest Rates Review

Interest rates this year took their cue from the easy monetary policy stance from the Federal Reserve (Fed) and other Central Banks globally. As the pandemic escalated in Q1 and states and municipalities called for shutdowns to curb the spread of the virus, small businesses were forced to shed costs quickly to preserve capital, resulting in a massive wave of layoffs. To help support these businesses and the newly unemployed and ultimately shore up markets, the Fed quickly cut rates toward zero and announced a number of massive liquidity facilities and lending programs (see Displays 5 & 6). The fiscal response in the U.S. was also large in scale arriving shortly after the Fed’s actions to further push the economy towards recovery. This dual combination of loose monetary and fiscal policy caused markets to reprice for a reflationary narrative into the latter half of the year. This can be evidenced by the sustained rise in 5yr5yr forward breakeven rates in the U.S. (see Display 7), which is closely watched by the Fed. As bond yields are typically driven by the state of the economy, a rise in breakeven inflation can be viewed as a function of a pickup in growth and earnings expectations coupled with improving investor sentiment.

This narrative was further emboldened after the Democratic sweep in the U.S. November elections under the presumption of an even further fiscally loose policy agenda that could more easily be passed through both sides of Congress.

WHERE DO WE GO FROM HERE?

If the Fed continues to run a high pressure economy with their policy shift toward flexible average inflation targeting (FAIT), many market participants could view this as a catalyst for a continued upward move in inflation breakeven rates. The adoption of this new framework by the Fed is designed to allow inflation to overshoot their long term price stability goal for periods of time in an effort to extend the economic expansion, which the Fed has vocally committed to as confirmed by the

DISPLAY 6
Federal Reserve Balance Sheet Expansion Has Helped Markets To Price In Economic Recovery

Federal Reserve Balance Sheet vs. S&P 500 Index

Source: Bloomberg; Data as of 12/31/2020

DISPLAY 7
Increased Inflation Expectations Due to Monetary and Fiscal Response

U.S. 5 year/5 year Breakeven Inflation Rate

Source: Bloomberg; Data as of 12/31/2020
December FOMC minutes. Additionally, the Fed has made it very clear that they will provide a long lead time between communicating their intention of tapering and their action of actual tapering to prepare the market for future policy tightening so as to avoid a repeat taper tantrum scenario as experienced from the Fed’s tapering communication in May 2013.

**WHAT DOES THIS MEAN FOR INVESTORS?**

It is also a widely held view that pent up demand could lead to higher personal consumption as the economy continues to reopen and COVID-19 vaccinations become more widely available. As personal consumption has historically been a large percentage contributor to U.S. GDP one could extrapolate higher consumption should lead to higher GDP. The combination of easy policy and pent up demand could continue to push breakevens higher and help to dial the needle for real interest rates to inflect higher from here (see Display 8). Given longer dated bonds are more sensitive to inflationary pressures, a move higher in nominal yields may potentially take the back end of the curve higher in steeping fashion with the front end of the curve anchored by the Fed at the zero lower bound. As such, shorter-dated debt securities could help to insulate investors from any more meaningful moves higher in nominal rates.

**Credit Market Musings**

As the U.S. began shutting down in the midst of the pandemic, corporate liquidity and solvency both became real concerns for credit markets. Corporations were faced with significantly reduced revenues, creating a backlog of inventory which forced them to preserve capital and reduce costs through a combination of layoffs and halted shareholder distribution programs. The credit market was quick to reprice credit spreads higher, recognizing the shutdowns could have some lasting impact on corporations' liquidity and solvency. In fact, S&P Global Ratings long-term issuer credit rating downgrades in Q2 surpassed the prior peak in Q1 2009 at the height of the credit crisis (see Display 9). The rapid and
targeted measures taken, both monetarily and fiscally, to support businesses provided the necessary backstop to ease market concerns, and corporates were quickly bought as the recovery began to take hold (see Display 10).

WHERE DO WE GO FROM HERE?
Given credit spreads haven’t fully recovered to pre-pandemic levels that could suggest spreads could further mean revert toward those levels as the economy continues to get back on solid footing. For context, the financial sector traditionally would be a net benefactor of higher interest rates and curve steepening. With front-end rates held at the zero lower bound and with the potential for curve steepening, banks could in theory be able capitalize by lending at higher rates to long-term borrowers while accepting deposits from short-term savers at lower rates.

This macro dynamic is paired with an already robust housing market and with employers becoming more open to worker mobility, mortgage origination revenues could provide an additional tailwind for the sector. Financials are already showing signs of strong earnings momentum after successfully weathering the pandemic with large portions of their workforce still working remotely.

HOW DOES THIS RELATE TO FINANCIAL ISSUERS?
If we take a closer look at the financial sector, both domestic and offshore bank credit spreads were negatively affected by the pandemic, but to varying degrees.

Being a global pandemic as it were and as worst case scenario events got priced into credit markets, credit spreads spiked globally and across all sectors. However, in the ensuing recovery it was domestic banks’ spreads that were slower to recover and remain higher into the end of the year (see Display 11). We can begin to explain this by highlighting that

![Display 10](image)

**DISPLAY 10**

**Corporate Credit Recovery Following the Risk-Off Investor Sentiment in 1Q20**

*U.S. Corporate Investment Grade Index and CDS Spread*

Source: Bloomberg; Data as of 12/31/2020

![Display 11](image)

**DISPLAY 11**

**Foreign Bank Credits Recovered More Quickly vs. Domestic Bank Credits**

*Domestic Bank Option Adjusted Spread (OAS) Ratios vs. Foreign Banks and U.S. I.G.*

Source: Bloomberg; Data as of 12/31/2020
The sponsor of the underlier may add, delete, any amount owed to you under the terms of the leveraged upside securities. The issuer to satisfy its obligations as they come due and is not guaranteed by obligation of any third party. Any payment to be made on the leveraged upside debt obligations of the issuer, and are not, either directly or indirectly, an Credit of issuer.

A capped percentage of the stated principal amount) of the initial underlier more than the cap (in the case where the maximum payment at maturity is less than the $10 stated principal amount of each leveraged upside securities by a percentage equal to the percentage decrease from the initial underlier value to the final underlier value beyond the buffer amount. You may lose up to 90% of your initial investment in the leveraged upside securities.

The leveraged upside securities do not pay interest and provide a minimum payment at maturity of only 10% of your principal. The terms of the leveraged upside securities differ from those of ordinary debt securities in that the leveraged upside securities do not pay interest and provide a minimum payment at maturity of only 10% of your principal. If the final underlier value is less than the initial underlier value by more than the buffer amount of 10%, the payment at maturity will be an amount in cash that is less than the $10 stated principal amount of each leveraged upside securities by a percentage equal to the percentage decrease from the initial underlier value to the final underlier value beyond the buffer amount. You may lose up to 90% of your initial investment in the leveraged upside securities.

The appreciation potential of the leveraged upside securities is limited by the maximum payment at maturity. The appreciation potential of the leveraged upside securities is limited by the maximum payment at maturity based on respective cap per each leveraged upside securities. The actual maximum payment at maturity will be determined on the pricing date. Although the leverage factor provides 200% exposure to any increase in the final underlier value as compared to the initial underlier value, because the payment at maturity will be limited to at least a maximum return of the stated principal amount for the leveraged upside securities, any increase in the final underlier value as compared to the initial underlier value by more than the cap (in the case where the maximum payment at maturity is a capped percentage of the stated principal amount) of the initial underlier value will not further increase the return on the leveraged upside securities.

Credit of issuer. The leveraged upside securities are unsecured and unsubordinated debt obligations of the issuer, and are not, either directly or indirectly, an obligation of any third party. Any payment to be made on the leveraged upside securities, including any repayment of principal, is subject to the ability of each issuer to satisfy its obligations as they come due and is not guaranteed by any third party. As a result, the actual and perceived creditworthiness of the issuer may affect the market value of the leveraged upside securities and, in the event the issuer were to default on its obligations, you might not receive any amount owed to you under the terms of the leveraged upside securities.

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value to be used as the closing level of the underlier. Any of these actions could adversely affect the value of the underlier and, consequently, the value of the leveraged upside securities. Hedging and trading activity by the issuer and its affiliates could potentially adversely affect the value of the leveraged upside securities. The hedging or trading activities of the issuer’s affiliates and of any other hedging counterparty with respect to the leveraged upside securities on or prior to the pricing date and prior to maturity could adversely affect the value of the underlier and, as a result, could decrease the amount an investor may receive on the leveraged upside securities at maturity. Any of these hedging or trading activities on or prior to the pricing date could potentially increase the initial underlier value and, therefore, the value at or above which the underlier must close on the valuation date so that the investor does not suffer a loss on their initial investment in the leveraged upside securities. Additionally, such hedging or trading activities during the term of the leveraged upside securities, including on the valuation date, could potentially affect the value of the underlier on the valuation date and, accordingly, the amount of cash an investor will receive at maturity, if any.

The market price of the leveraged upside securities will be influenced by many unpredictable factors. Several factors will influence the value of the leveraged upside securities in the secondary market and the price at which the issuer may be willing to purchase or sell the leveraged upside securities in the secondary market. Although we expect that generally the value of the underlier on any day will affect the value of the leveraged upside securities more than any other factors that may influence the value of the leveraged upside securities include:

- the volatility (frequency and magnitude of changes in value) of the underlier;
- dividend rates on the securities composing the underlier;
- interest and yield rates in the market;
- time remaining until the leveraged upside securities mature;
- supply and demand for the leveraged upside securities;
- geopolitical conditions and economic, financial, political, regulatory and judicial events that affect the securities composing the underlier and that may affect the final underlier value; and
- any actual or anticipated changes in our credit ratings or credit spreads.

The value of the underlier may be, and has recently been, volatile, and we can give you no assurance that the volatility will lessen. You may receive less, and possibly significantly less, than the stated principal amount per leveraged upside securities if you try to sell your leveraged upside securities prior to maturity.

The estimated value of your leveraged upside securities is expected to be lower than the initial issue price of your leveraged upside securities. The estimated value of your leveraged upside securities on the pricing date is expected to be lower, and may be significantly lower, than the initial issue price of your leveraged upside securities. The difference between the initial issue price of your leveraged upside securities and the estimated value of the leveraged upside securities is expected as a result of certain factors, including the estimated cost that the issuer may incur in hedging its obligations under the leveraged upside securities, and estimated development and other costs that may be incurred in connection with the leveraged upside securities.

The estimated value of your leveraged upside securities might be lower if such estimated value were based on the levels at which our debt securities trade in the secondary market. The estimated value of your leveraged upside securities on the pricing date is based on a number of variables, including internal funding rates. Internal funding rates may vary from the levels at which benchmark debt securities trade in the secondary market. As a result of this difference, the estimated values referenced above might be lower if such estimated values were based on the levels at which benchmark debt securities trade in the secondary market.

The estimated value of the leveraged upside securities is based on internal pricing models, which may prove to be inaccurate and may be different from the pricing models of other financial institutions. As a result, the secondary market price of your leveraged upside securities may be materially different from the estimated value of the leveraged upside securities determined by reference to internal pricing models.

The estimated value of your leveraged upside securities is not a prediction of the prices at which you may sell your leveraged upside securities in the secondary market, if at all. The estimated value of your leveraged upside securities, the tax consequences of the ownership and disposition of the leveraged upside securities, and we do not plan to request a ruling from the Internal Revenue Service (the “IRS”). Consequently, significant aspects of the tax treatment of the leveraged upside securities are uncertain, and the IRS or a court might not agree with the treatment of the leveraged upside securities as described by the issuer in the relevant offering documents. If the IRS were successful in asserting an alternative treatment for the leveraged upside securities, the tax consequences of the ownership and disposition of the leveraged upside securities could be materially and adversely affected. In addition, in 2007 the Treasury Department and the IRS released notice requesting comments on various issues regarding the U.S. federal income tax treatment of “prepaid forward contracts” and similar instruments. Any Treasury regulations or other guidance promulgated after consideration of these issues could materially and adversely affect the tax consequences of an investment in the leveraged upside securities, possibly with retroactive effect.

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The U.S. federal income tax consequences of an investment in the leveraged upside securities are uncertain. There is no direct legal authority regarding the proper U.S. federal income tax treatment of the leveraged upside securities, and we do not plan to request a ruling from the Internal Revenue Service (the “IRS”). Consequently, significant aspects of the tax treatment of the leveraged upside securities are uncertain, and the IRS or a court might not agree with the treatment of the leveraged upside securities as described by the issuer in the relevant offering documents. If the IRS were successful in asserting an alternative treatment for the leveraged upside securities, the tax consequences of the ownership and disposition of the leveraged upside securities could be materially and adversely affected. In addition, in 2007 the Treasury Department and the IRS released notice requesting comments on various issues regarding the U.S. federal income tax treatment of “prepaid forward contracts” and similar instruments. Any Treasury regulations or other guidance promulgated after consideration of these issues could materially and adversely affect the tax consequences of an investment in the leveraged upside securities, possibly with retroactive effect.

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