January 2021

# Multi-asset Market Update

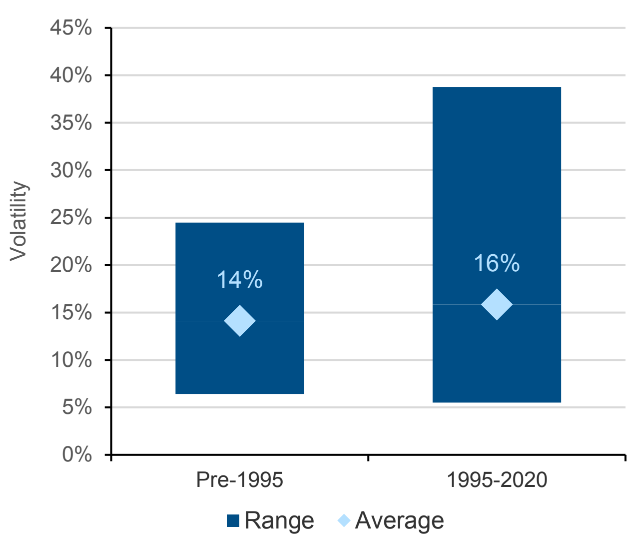
## Equity market

Over the last month, I listened to interviews of Adam Gazzaley, a professor of neurology, psychology and psychiatry at UCSF, and Balaji Srinivasan, former CTO at Coinbase and General Partner at Andreesen Horowitz. Mr. Gazzaley discussed the "price of distraction", and Mr. Srinivasan's interview focused mostly on the pandemic (it was recorded in May 2020) and information filtering. Mr. Srinivasan made a comment that seems obvious but that I appreciated as profound and concise, nevertheless:

"The internet increases variance."

Sticking strictly to the investment world, it seems to be true. *Figure 1* demonstrates that the average annual volatility of the S&P 500 has been higher since the early days of broader internet adoption and access and, importantly, the range of experienced volatility is also much greater.

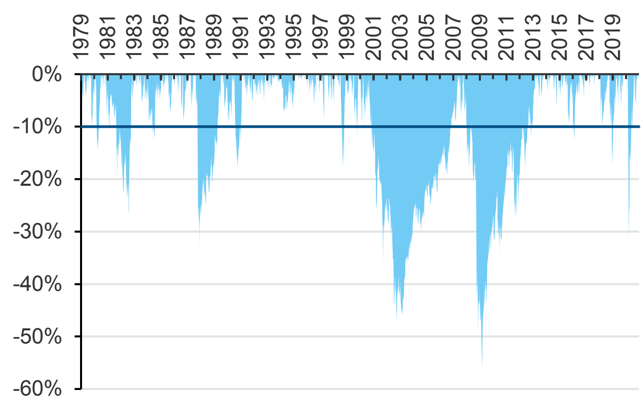
**Figure 1: S&P 500 rolling annual volatility**




Source: Bloomberg, data as of January 19, 2021.

Beyond just the range, the speed at which we experience volatility has also increased. Ignoring the tech bubble and GFC, there are nearly the same number of 10% or worse drawdowns in the pre-1995 period and since, and what strikes me about the chart is how short-lived those experiences have been in the internet era. For example, markets have taken on average half the time to recover from any drawdowns during the internet era (20 weeks versus 42.5 weeks).[1]

**Figure 2: S&P 500 drawdowns**




Source: Bloomberg, data as of January 19, 2021.

This highlights something that I think we all know to be true and certainly most of us feel much of the time. Specifically, information is generated, disseminated and interpreted at a ludicrous and still accelerating rate, which brings us to the most salient point (in my opinion) of Mr. Gazzaley's interview. As a neuroscientist, Mr. Gazzaley noted that there are cognitive limits on the speed at which we can process information. At some point, it all becomes noise; there is no signal. Professional baseball players can train themselves to hit 95mph fast balls, but once the pitch speed meaningfully exceeds 100mph, it's pretty much unhittable. Professional investors and traders can train ourselves to monitor and interpret plenty of data, but when we add multiple social media platforms and hundreds of weekly research pieces from the buyside and sellside alike, it can become overwhelming.

Neither interview offered a prescription for how to handle our world of information stress-free or to be a prescient investor, but there are some interesting implications. First, as individuals, we are motivated by ego and profit to be right first, but according to Mr. Gazzaley, adding more information may be counterproductive to those ends. Second, as teams, we have the ability to specialize team members' roles (to encourage greater focus), and to structure interactions and decision making to counteract the behavioral biases that can be triggered by the arrival of new information (e.g., fear, greed, confirmation bias, etc). Third, and last, large organizations such as institutional asset allocators typically have structural limitations on how quickly they can react to new information, even if the information is interpreted perfectly. If the speed at which a market can adjust—upward or downward by 10% or more, for example—is much faster than an institution can react, then adding value to the organization is much more challenging.

There are several approaches for institutions to address this last point. For example, capital can be allocated to skillful macro managers at sizes meaningful enough to impact the total portfolio, or you can partner with a manager to add active views more directly (e.g., through an overlay). We believe it also reinforces the case for strategic use of equity structures or hedging programs, possibly also including monetization triggers as appropriate relative to the objectives and needs of the institution. And, of course, it all starts with a strategic asset allocation that minimizes volatility relative to the institution's objective. We frequently partner with clients and their consultants across these dimensions, and, as always, are happy to share our insights from those experiences in response to your needs or questions.

## Equity volatility

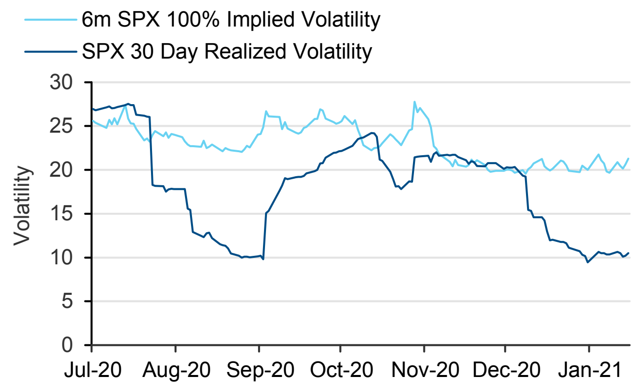
Last month's equity volatility commentary still applies surprisingly well one month hence. Implied volatility remains stabilized at cyclically elevated levels, while recent historical realized volatility remains comparatively subdued.

At-the-money implied volatility with maturities longer than 3 months remains between 20-22%, or +/-1.3% a day, as expressed in daily percentage price breakeven terms. While such elevated implied volatility can remain in option market pricing for some time, this dynamic expresses no complacency among participants. Specifically, all else equal, it is typical for at-the-money implied volatility levels to decline as the underlying spot price rises. Currently, however, previously out-of-the-money strike call options have reset to higher implied volatility levels today.[1]

In line with the sustained spread of anchored realized historical volatility below elevated implied volatility, we've observed more commentary suggesting that the equity volatility risk premium is at an attractive structural juncture. Regardless, there is still reticence (or inability) among market participants to re-enter volatility selling strategies following the events of 2020.

Client hedging activity has picked up this month, with plans opening new spread transactions that meet 2021 calendar year allocations. Implied volatility conditions line up more favorably than last month for spread transactions that buy and sell varying legs to meet outcome objectives.

**Figure 3: Realized vs. implied volatility**




Source: Bloomberg, data as of January 19, 2021.

## Rates market

Long-end rates traded sideways into year-end before selling off at highs - not seen since pre-COVID-19 - on the back of reflation trades, corporate supply, the blue wave sweep in Georgia, and optimism over COVID-19 vaccines.

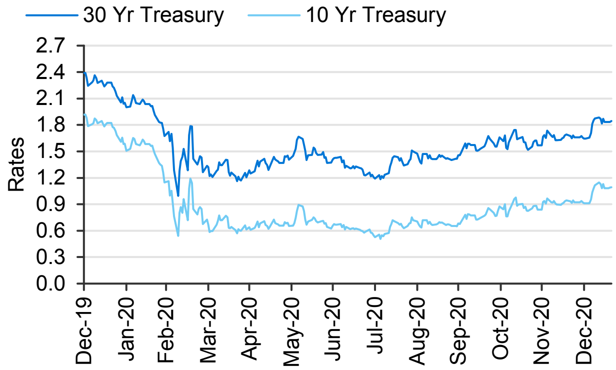
**Figure 4: US rate environment**

| Index (%) | 1/19/20210 | One month ago | Three months ago | One year ago |
|---|---|---|---|---|
| Fed Funds Rate | 0.25 | 0.25 | 0.25 | 1.75 |
| 2-year | 0.13 | 0.12 | 0.15 | 1.57 |
| 5-year | 0.45 | 0.38 | 0.33 | 1.62 |
| 10-year | 1.09 | 0.95 | 0.77 | 1.81 |
| 30-year | 1.85 | 1.69 | 1.56 | 2.26 |

Source: Bloomberg, data as of January 19, 2021.

Right before Christmas, a $900 billion stimulus package was passed with $600 direct payments checks and $300 billion devoted to unemployment aid, which helped temper the increasing rates of COVID-19 infection globally which had lead many countries to reinstate harsher lock down restrictions. The last FOMC meeting of 2020 was essentially a non-event. The dots were mostly unchanged while the economic growth projections were slightly more optimistic. The Fed did not make any mention of extending the duration of their portfolio. Chair Powell continued to emphasize patience with rates staying low and the Fed's goal of overshooting their 2% inflation target before they would start raising rates. The long-end closed out the year at 1.64, about 75 basis points lower than where it started at the beginning of the year.[1]

**Figure 5: Treasury rates**




Source: Bloomberg, data as of January 19, 2021.

Democrats needed to pick up both Senate seats in Georgia to get 50 seats and control of the Senate with Vice President elect Harris casting any tie breaking votes. While betting markets favored Republicans to win at least one seat going into the runoff election, Democrats Jon Ossoff and Raphael Warnock both won by a little more than 1% of the vote. The following day, the 10-year sold off to above 1% for the first time since March and has stayed above the level since then. Blue Eurodollar futures (representing LIBOR rates in 2024) sold off 18 basis points after the Georgia elections.[1]

At the end of the week, the market shrugged off an NFP print of -140k (compared to +50k consensus), the first negative print since April 2020. The lower than expected headline number was tempered by a +120k revision of the prior month and a more detailed parsing of the data showing that virtually all the losses were in restaurants and amusement & recreation facilities, two sectors hit hard by colder weather (restaurants had to close off some outdoor seating) and increased lock down measures. With the vaccine rollout underway, both sectors are expected to recover this year.

Despite the protest that turned into a storming of the Capitol Building in D.C., Joe Biden was confirmed as the next President-elect. This, combined with heavier than expected corporate issuance in the first full week of January and an OPEC agreement to cut Saudi oil production, all helped pushed bond yields higher. The 10-year Treasury rate reaching 1.19 and the long bond reaching 1.91 intraday on January 12.[1]

Fed minutes and Fed speak later in the month continued to beat the drum for patience and rates remaining low. Fed minutes mention a potential for asset purchase tapering once "substantial further progress had been made toward the dual goals of maximum employment and price stability." At a Princeton Economic webinar, Powell stated the Fed would "let the world know well in advance on tapering." At her confirmation hearing this week for the role of Treasury Secretary, former Fed Chair Janet Yellen gave her support for added stimulus, noting, "… with interest rates at historic lows, the smartest thing we can do is act big." President-elect Biden outlined a $1.9 trillion stimulus plan, although it remains to be seen how much of that will get quickly passed through Congress. A record $110 billion in 3-year, 10-year, and 30-year Treasuries were auctioned last week. But despite the record setting issuance, the 10-year auction stopped 0.8 basis points rich to pre-auction levels and the 30-year auction came through 1.4 basis points, indicating that even with all these inflationary pressures, there is a still a bid for long-dated US Treasuries, which have settled back down to 1.83.[1]

## Rates volatility

Over the past month, rate volatility has traded directionally with rates for 5-year tails and inward but remained more subdued on longer tails as event risk passed and program sellers sold any pops in volatility.

**Figure 6: Current implied volatility levels and change over one-month**

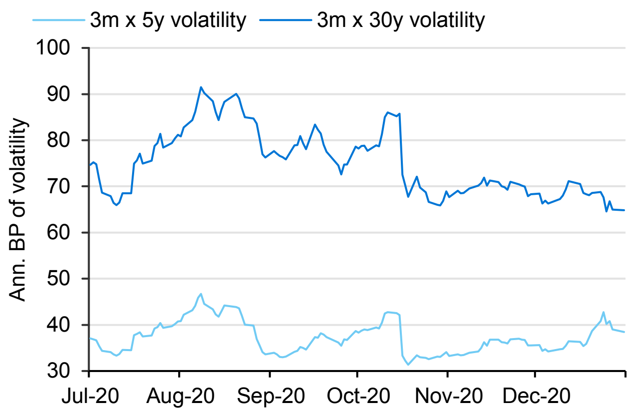
| P/Tail | 1Y | Change | 2Y | Change | 5Y | Change | 10Y | Change | 30Y | Change |
|---|---|---|---|---|---|---|---|---|---|---|
| **1M** | 10.7 | *-0.5* | 13.1 | *-0.6* | 37.0 | *3.0* | 58.7 | *-0.9* | 64.9 | *-5.7* |
| **3M** | 12.1 | *-0.1* | 14.7 | *0.4* | 38.6 | *1.7* | 59.6 | *-0.1* | 65.0 | *-5.1* |
| **6M** | 12.3 | *-0.5* | 17.3 | *-0.6* | 42.6 | *2.7* | 60.4 | *1.1* | 65.4 | *-3.5* |
| **1Y** | 15.8 | *-0.6* | 23.0 | *1.3* | 46.8 | *3.6* | 61.3 | *2.2* | 65.5 | *-0.9* |
| **2Y** | 27.4 | *1.2* | 36.9 | *3.0* | 52.9 | *3.2* | 62.1 | *1.7* | 63.2 | *-1.0* |
| **3Y** | 43.3 | *4.3* | 48.9 | *3.9* | 57.3 | *2.9* | 62.8 | *1.3* | 62.2 | *-0.4* |
| **4Y** | 54.1 | *5.0* | 56.0 | *3.4* | 60.6 | *2.3* | 63.1 | *1.0* | 60.8 | *-0.6* |
| **5Y** | 58.9 | *2.8* | 60.1 | *2.6* | 62.6 | *1.6* | 62.8 | *0.6* | 59.2 | *-0.9* |
| **7Y** | 62.2 | *1.6* | 61.9 | *1.7* | 62.0 | *0.4* | 61.6 | *-0.1* | 56.6 | *-1.2* |
| **10Y** | 60.7 | *-0.9* | 60.5 | *-0.7* | 59.8 | *-1.2* | 58.9 | *-1.4* | 53.5 | *-1.6* |

Source: Citibank, data as of January 19, 2021.

As the 5-year Treasury rate moved above 50 basis points and the blue Eurodollar strip sold off nearly 20 basis points in the wake of the Georgia runoff election, implied volatility on the left-hand side of the surface went bid for shorter dated options on 5-year tails and intermediate expiries on 2-year tails. Amongst record issuance, Democrats controlling the White House and both bodies of Congress, and continued stimulus plans in the trillions of dollars all point to higher rates, the Fed is still on hold for the foreseeable futures and the recovery is expected to be slow and take years to fully materialize.[1]

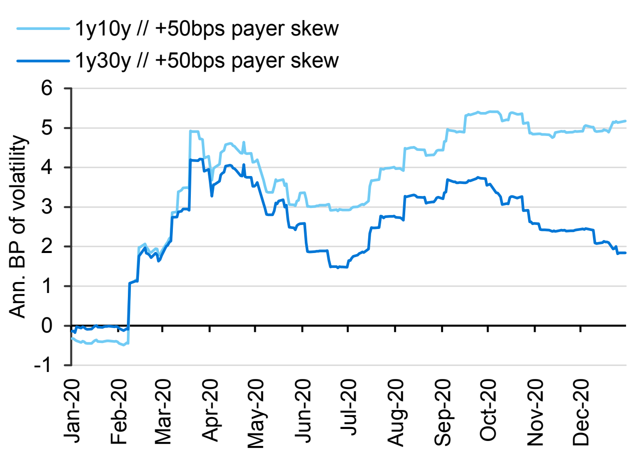
Rates-on-hold forecasts always lead to program gamma selling - which puts a lid on how high volatility can move outside of some major unexpected surprises. And, as the selloff in the belly stalled out and rates retreated lower towards the end of last week, belly volatility quickly gave back a large portion of their gains. High strike payers continue to be well bid, particularly in 5-year and 10-year tails

**Figure 7: Implied volatility**




Source: Citibank, data as of January 19, 2021.

**Figure 8: Payer skew**




Source: Citibank, data as of January 19, 2021.

On the exchange, there has been a lot of activity in green March mid-curve contracts (options that expire in March of 2021 on the forecasted 3-month LIBOR rate in March of 2023). Although the rate is currently forecasted at 29 basis points, put options on the rate getting above 1.125% by March have been trading at more than triple the usual daily average, according to Bloomberg. A much higher than anticipated Formosa issuance in the first week of the year pushed longer-dated volatility, but it quickly bounced back to year end levels.[1]

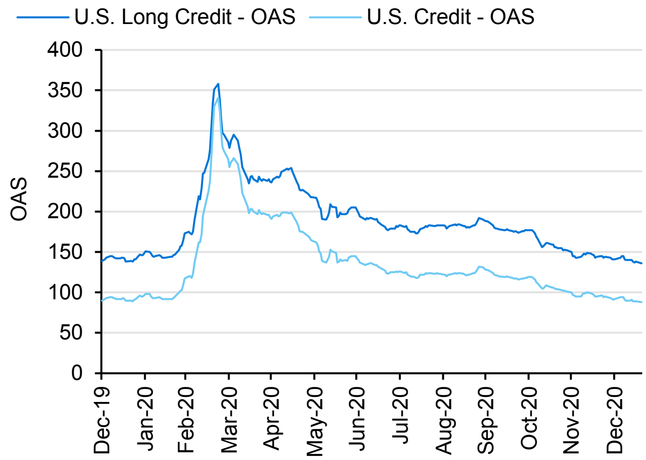
## Credit market

As many investors returned from their holiday break, they were greeted with the materialization of a Blue Wave, widening credit spreads, and a broad risk asset sell-off. Various Fed officials also suggested that certain monetary approaches, such as asset purchasing programs, might need to be reassessed sooner than anticipated. This is especially relevant, as additional fiscal stimulus and increased vaccine distribution have substantially improved growth estimates. Economic consensus for US GDP growth in 2021 have now risen to 4.0%, with some sell-side institutions estimating growth to be as high as 6.6%. Although the start of the year was a bit tumultuous, the market has largely recovered from its early January wobble and spreads at the index level are now tighter than where they entered the year by 3 basis points.[1]

As of year-end, US Investment Grade Supply came in right at $1.7 trillion, which was 61% more than 2019's issuance level. Month to date, we have seen $75 billion come to market. This is relatively higher compared to 2020's pace, but only another $40 billion is expected for the month. The total amount of ~$115 billion would be lower than 5-year average for January issuance. After a little selling in the first week by Taiwan, foreign buying of IG credit has resumed as we enter earnings season. M&A volume has been relatively robust and we expect demand to be sizable in the US, for the time being. As such, market technicals continue to look favorable.[1]

From a macroeconomic standpoint, initial jobless claims remain elevated, as more than one million people filed for traditional unemployment benefits last week. CPI increased 0.4% in December, but the aggregate level still seems to be well below the Fed's 2% inflation target. With that being said, there are still valid inflation concerns. The national debt is currently 100.1% of GDP, which is the highest level relative to US production since the Second World War. The economy has been supported by a $900 billion stimulus, and another round is likely in the cards, given the Georgia Senate victories. Biden recently unveiled a $1.9 trillion fiscal package on January 14. If passed, this stimulus would be very supportive of Credit markets in the near-term, but we will carefully assess the inflation impacts over the long-term. As we enter earnings season, bottom-up consensus estimates for 4Q anticipate an earnings decline of -7.9% YoY and a revenue decline of -1.0% YoY.

**Figure 9: US credit spreads**




Source: Bloomberg, data as of January 19, 2021

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1 Source: Bloomberg
2 Source: Citibank



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