February 2021

Multi-asset Market Update

Equity market

Last month, we highlighted the notion that "the internet increases variance" by applying it strictly to markets. We observed higher average realized volatility and a higher "vol of vol" since 1995, and that both the speed and recovery of market drawdowns is faster. The subsequent and already well-covered GameStop episode exemplifies that dynamic, leading some of our colleagues to joke that this is the Max Power market.

For those unfamiliar with the reference, in a classic episode of "The Simpsons", Homer attempts to rebrand himself with a sharper image by changing his name to Max Power, whose ethos is summarized in the following quote.

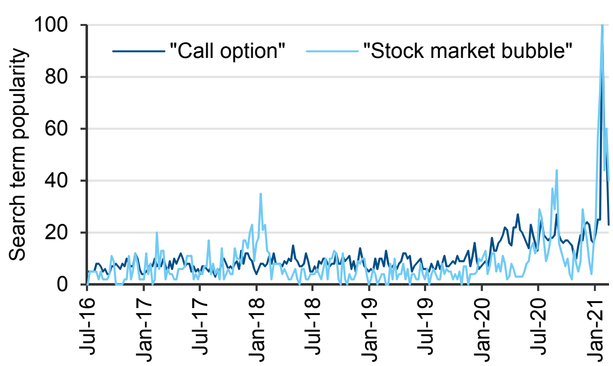
Homer: Kids, there are three ways to do things. The right way, the wrong way and the Max Power Way.

Bart: Isn't that just the same as the wrong way?

Homer: Yes, but faster!

From a long-term institutional investor perspective, there's not much that feels right about the Robinhood and r/WallStreetBets situation, but it has moved fast and seemingly captivated everyone's attention (if not also their participation):

Figure 1: Google trends search term popularity



Source: Google Trends, data as of February 18, 2021.

There are two observations from *Figure 1*. Interest in "call options" was as parabolic as the moves in the meme stonks themselves. But so was interest in whether the market is in a bubble.

Our medium-term view remains constructive, and we'll relate this both to current dynamics and perceived investor sentiment. The fundamental backdrop for equities is very strong. We believe we are clearly in an early cycle environment, we are above consensus on growth and the policy support for the economy is massive. We of course acknowledge that absolute valuations of US equities are stretched and, in many cases, quite extreme; however, international equities are more reasonable. Further, the relative valuation of equities against other asset classes, primarily government bonds and credit, is much more attractive, primarily due to the Fed's commitment to accommodative monetary policy. We believe the primary risks to our view are that the whole story is already priced in—market weakness over the last week coinciding with a +15 basis points move in real rates has not escaped anyone's attention—and that geopolitics (particularly US-China relations) still hang over us like a dark cloud.[1]

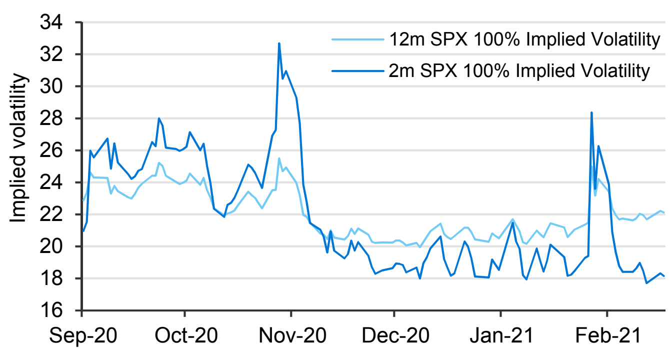
Sentiment dynamics are more conflicting. With pockets of speculative mania coinciding with all-time highs in some valuation measures, caution would certainly be prudent. However, professional and retail investors alike seem to be finely attuned to the possibility of a bubble, which we think paradoxically reduces risk. There is evidence for this in institutional equity positioning, measures of which are far from any extremes, and in index option volatility markets. During the couple volatile days in broad markets since we last wrote, we observed what has become typical widening of index option bid-ask spreads, although this dynamic was not present during the height of the WSB mania (indices were relatively calm then). And in all those cases, broker commentary was commonly focused on hedges being monetized quickly or rolled to more favorable strikes. Not only does this dynamic potentially reduce further realized volatility, but it also indicates that many large investors are hedged or otherwise well-positioned against even small drawdowns.

Taken together, we are cautiously optimistic. We are adding equity exposure opportunistically and certain hedges prudently. For those who wish to add or maintain equity exposure in a more risk-controlled format, we also note that put spread collar strikes offer quite favorable payouts relative to their own history, at least in part thanks to the high demand for call options. Our equity volatility commentary that follows offers more insights**.**

Equity volatility

The relative monotony of an elevated implied volatility premium since the burst of optimism of vaccine news in November was finally shaken. Specifically, the spread of elevated implied volatility to stable-and-low realized volatility briefly inverted. This interruption was attributed to 'de-grossing' by long-short relative value market participants that had to unwind favored longs to offset shorts 'squeezed' higher by supposed concentrated retail traders.

Figure 2: SPX implied volatility



Source: Bloomberg, data as of February 18, 2021.

This activity coincided with a near 5% drawdown in the S&P 500 intraday high-to-low levels during the last week of January. Classic elements of stress in the option market emerged: short-dated implied volatility inverted significantly against longer-dated maturities (pictured) and short-dated realized volatility measures spiked. Trading conditions in the index universe relative to the single stock option market remained very orderly, however. While chaotic activity may have occurred in individual stocks' options, S&P 500 electronic markets remained highly liquid.[1]

Today, the subsequent resolution of this event led, yet again, to a recovery in the broad equity market to new highs. The option market has normalized as well, exhibiting an upward sloping term structure. In fact, the current steepness (the difference between longer-dated implieds and more immediate ones) is at levels that have been historically unsustainable.

This dynamic in the prevailing term structure of elevated long dated implied volatility sustains favorable Put Spread Collar pricing of a costless 1-year 80/95/110% strike structure amidst higher relative spot prices.[1]

Rates market

Rates moved higher and broke through several resistance levels as the yield curve bear steepened and 10-year through 30-year rates are now at levels not seen since the pre-pandemic days of February 2020.

Figure 3: US rate environment

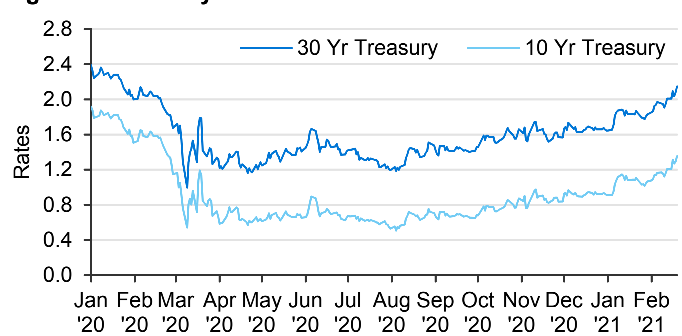
Index (%)	2/18/2021	One month ago	Three months ago	One year ago
Fed Funds Rate	0.25	0.25	0.25	1.75
2-year	0.10	0.13	0.17	1.42
5-year	0.55	0.45	0.40	1.41
10-year	1.30	1.09	0.87	1.57
30-year	2.08	1.83	1.60	2.01

Source: Bloomberg, data as of February 18, 2021.

Rates traded sideways for the second half of January, as President Biden was inaugurated without incident. In her confirmation hearing, Treasury Secretary Janet Yellen stressed the need for bold moves to assist with the economic recovery. She also said she supported issuing longer dated Treasuries (such as a 50-year bond) at these rate levels, but this would clearly take a back seat to getting the economy back on track.[1]

The FOMC meeting on January 27 contained few surprises and leaned dovish as anticipated. The only noticeable changes to the accompanying statement were the addition of the modifier that the pace of recovery has moderated and new language acknowledging the course of the recovery will be dependent on the progress of vaccinations. In the press conference, Chair Powell reaffirmed the Fed's commitment to pandemic recovery. He also stressed that now is not the time to start tapering the Fed's monthly asset purchase program, but when that time does come, the tapering will be gradual and very well communicated to the market.[1]

Figure 4: Treasury rates



Source: Bloomberg, data as of February 18, 2021.

In vaccine news, Johnson & Johnson showed results of yet another promising vaccine. Although this new one has "only" a 70% efficacy, it is a one-shot vaccine that is much cheaper to manufacture and store than what is currently available, which is a huge step forward in speeding up vaccinations, particularly in developing countries.[1]

Data to close out the month was mixed, with GDP growth of 4.0% quarter-over-quarter roughly in line with the 4.2% expectation, while new home sales disappointed but PCE surprised to the upside. The long-end Treasury rate closed out January at 1.83.[1]

The curve started bear steepening the first week of the February as President Biden's $1.9 trillion stimulus continued to move forward. On February 3, Democrats approved a budget resolution, laying the groundwork for passage of the stimulus solely with votes from Democratic members of congress. A hawkish BOE meeting helped spark a bear steeping globally as the BOE kept their policy rate on hold, citing vaccination efforts that will lead to a strong recovery in Q2 to pre-COVID-19 levels. Even non-farm payrolls coming in at a disappointing +49k (vs a +105k expectation and a -90k downward revision to the prior month) didn't slow the selloff, although there was a silver lining as the unemployment rates dropped from 6.7% to 6.3% and average hourly earnings came in higher than expected. The 2s10s Treasury curve steepened out to a four-year high of 105bps and 5s30 steepened out to a five-year high of 150 basis points.[1]

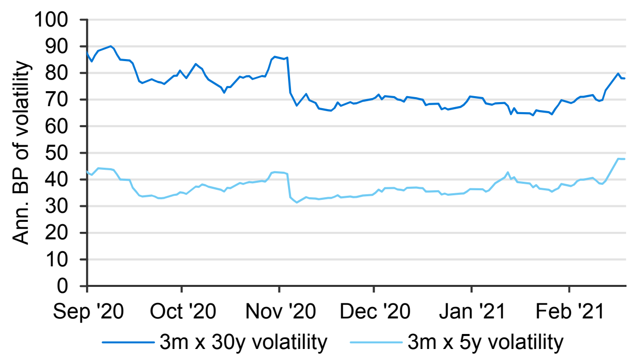
Last week the market shrugged off a weak CPI print as equities continued to hit new highs and record 3, 10 and 30-year issuance hit the market, further fueling the reflation trade as the 30-year auction tailed 1 basis point. The week ended with the 10-year at 1.21 and the 30-year at 2.01, the first time they closed above 1.20 and 2.00 since February of 2020.[1]

After the long holiday weekend, rates jumped higher on the back of positive vaccination numbers globally and aggressive futures selling throughout the day. The selloff may have been exacerbated by short gamma positions on exchange options that expire this week. The past month has also seen swaps spreads in 10-year to 30-year maturities widening out about 8 basis points to multi year highs. Accommodative financial conditions, particularly in the form of cheap balance sheet and lower bond financing costs this year, have helped spark this widening move. If these conditions persist, and at this point there is good reason to think they will, we could continue to see these spreads widen if rates move higher.

Rates volatility

Rate volatility has risen sharply over the past two weeks as rates have hit new post-COVID-19 highs, the reflation trade is going strong, speculators try to time the Fed lift-off, and tail risk protection is trading at a premium.

Figure 6: Implied volatility



Source: Citibank, data as of February 18, 2021.

Volatility mostly traded sideways in the latter half of January as program sellers of short dated options on 10-year and 30-year tails persisted while macro accounts bid up high strike payers on intermediate expiry 30-year tails and real money accounts bought short dated low strike receivers for risk off protection.

The move higher in volatility started with the move higher in rates the first week of February. There was a pronounced

Figure 5: Current implied volatility levels and change over one-month

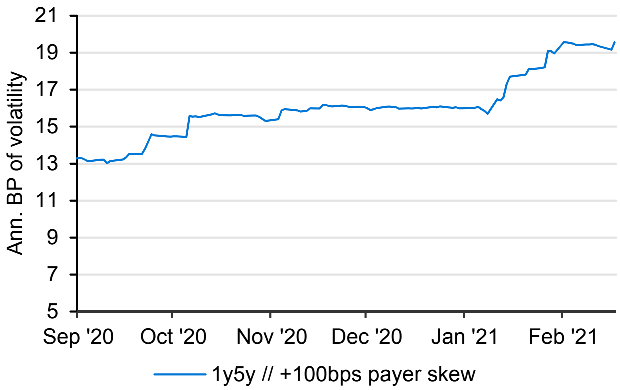
P/Tail	1Y	Change	2Y	Change	5Y	Change	10Y	Change	30Y	Change
1M	13.5	*2.8*	17.0	*4.0*	47.2	*10.3*	72.4	*13.7*	79.7	*14.9*
3M	14.6	*2.4*	17.2	*2.4*	47.9	*9.3*	71.3	*11.7*	78.2	*13.2*
6M	14.8	*2.5*	20.3	*3.0*	52.1	*9.5*	70.6	*10.1*	75.8	*10.4*
1Y	19.9	*4.1*	27.5	*4.4*	57.2	*10.5*	70.2	*9.0*	73.3	*7.8*
2Y	37.7	*10.3*	47.9	*11.0*	62.8	*9.9*	70.2	*8.1*	70.4	*7.2*
3Y	53.3	*10.1*	60.0	*11.2*	65.7	*8.4*	69.7	*7.0*	67.9	*5.7*
4Y	63.1	*9.0*	65.4	*9.4*	67.4	*6.8*	68.7	*5.6*	65.5	*4.7*
5Y	66.5	*7.6*	67.5	*7.5*	67.9	*5.4*	67.1	*4.3*	63.2	*4.0*
7Y	67.3	*5.1*	67.2	*5.3*	66.3	*4.2*	65.3	*3.6*	60.0	*3.4*
10Y	64.5	*3.8*	63.9	*3.4*	63.1	*3.3*	61.2	*2.4*	56.0	*2.5*

Source: Citibank, data as of February 18, 2021.

focus on buying 5-year tails or any structure that extended out five years (2y3y, 4y1y, etc.), presumably as a Fed lift-off play. A large supply of Formosa issuance initially depressed the lower right of the volatility surface, but buyers emerged at these cheap levels to easily take down the supply, mostly in the form of forward volatility buying on 30-year tails. As the yield curve hit multi-year highs in steepness, curve caps went well bid.

The rally in rate volatility took a brief pass on the mildly disappointing January employment report but has continued relentlessly since then as the 10-year rate rose above 1.20 and the 30-year rate rose above 2.00. High strike payers continue to be well bid on 5-year tails - if the selloff continues rate volatility should continue to climb.[2]

Figure 7: Payer skew



Source: Citibank, data as of February 18, 2021.

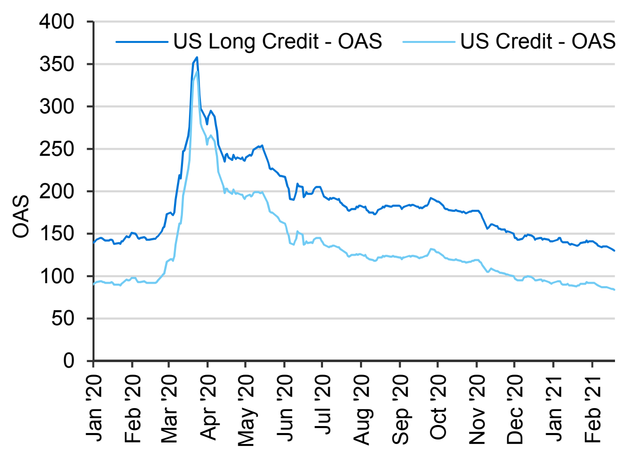
Credit market

Credit markets continue to grind tighter as the US economic backdrop steadily improves and vaccine distribution efforts become more widespread. COVID-19-related hospitalizations are rapidly declining as well, now around 44% below the January highs. The US is administering more than 1 million doses per day, and recently surpassed 50 million doses administered in total. Earnings have also been strong to date. For the 69% of US Investment Grade Issuers that have reported, the market has experienced earnings growth of 3.8%, as well as a revenue increase of 1.5% YoY. Collectively, February conditions have provided a strong macro backdrop for the US Credit market. As of February 17th, the long credit index sits at 131 basis points, 10 tighter on the month.[1]

In the primary market, $60 billion of supply has come to market in February thus far, which has been consistent with estimates. Forecasts for the full month range between $90 and $100 billion. Dealer inventory has slightly increased, but demand from retail and mutual funds has continued to be robust. Taiwan, on the other hand, has displayed inconsistent buying. There has been some tapering in overnight demand, but cross currency basis continues to be favorable. This signals the potential for an increase in buying going forward. Further, with the earnings blackout period, we are expecting the pace of issuance to slow. As such, market technicals continue to be attractive in the near-term.

During a recent conversation at the Economics Club of New York, Fed Chair Jerome Powell reiterated his focus on achieving full employment while insinuating that inflation is not a current concern. We expect the Fed will continue to be accommodative for the foreseeable future. The macro environment continues to provide a Goldilocks backdrop for credit markets. January's US unemployment numbers were weak enough to encourage politicians to press ahead with a significant fiscal package, but not so bad as to undermine the hope of a vaccine-driven recovery in the coming months. Valuation concerns continue to temper enthusiasm for what appears to be an unusually supportive macro-economic backdrop. Indeed, if one were not worried about it already being reflected in asset prices, the combination of accelerating growth on the back of vaccine distribution and extremely supportive-but-patient monetary policy is something of a 'Goldilocks' situation. This is an area we will continue to closely monitor going forward, and as such, our short-term views remain market-neutral for Investment Grade Credit.[1]

Figure 8: US credit spreads



Source: Bloomberg, data as of February 18, 2021.

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1 Source: Bloomberg
2 Source: Citibank

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