November 2021

Multi-asset Market Update

Equity market

Our portfolio manager chat yesterday was focused on various future states of the world and market paths that could reconcile nominal 30-year Treasuries at 2.0%, 30-year break-even inflation at 2.5% and recent realized inflation at 6.2%. In the background, I was listening to a music channel playing peak Gen X-era hard rock, which I turned off when a song by the band Limp Bizkit came around. Limp Bizkit's music is objectively bad. It was also a transitory feature of a period and genre of music about which I otherwise have many fond memories and positive feelings.

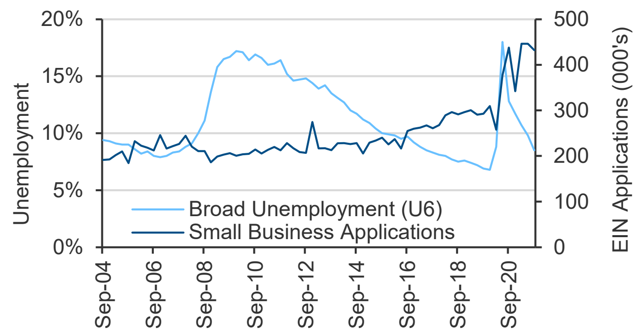
Inflation is our economic Limp Bizkit. Everything about it sounds pretty terrible; we're hearing and seeing a lot of it; and we're just hoping it won't stick around, at least not this aggressively. Meanwhile, we maintain our pro-risk tilt (we're going to keep listening to this channel) but we are becoming more cautious about where we are in the cycle (our finger is hovering above another preset). More formally, in the words of our global Head of Asset Allocation, Emiel van den Heiligenberg:

"Our confidence about the current position of the cycle is lower than normal due to the unique nature of the pandemic, the extraordinary policy response and, as we get closer to an unknown full capacity, the unique nature of the supply disruptions. Though we stick with a mid-cycle view for now we see the risk that the US and some other economies are later in the cycle than realized and currently high inflation acts as a catalyst for more persistent inflation, which in the end will prompt a policy response.

Even though uncertainty is increasing, our research shows that even a late cycle view isn't necessarily bad for risk assets as long as recession risk remains very low. We think 12-month recession risk will increase only marginally from close to zero at the moment. Our trust is that recession indicators will be able to give us a good read on when that risk is increasing. We are wary to take off risk too soon, especially as in our scenario analysis we see the majority of the possible outcomes as above trend growth and equity positive for now."

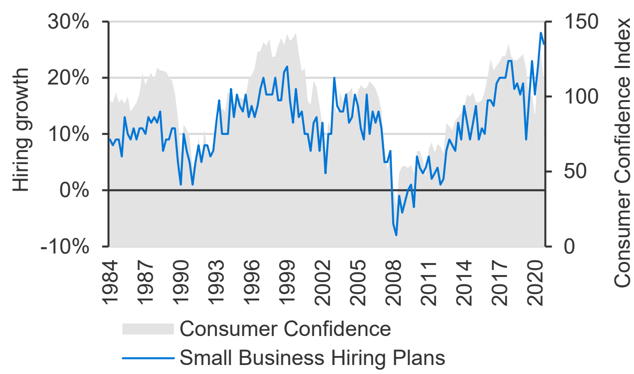
As we reflect on where we are in the cycle, it is also an opportunity to inventory all the good that has happened and is happening that has led us here, in spite of the pandemic (like the other great bands from the late-90s that drown out Limp Bizkit). In fact, it was our November 2020 report where we first noted the incredible sentiment and employment trends that were just developing even when we were just beginning to experience the second wave of COVID-19. We have updated those charts for the last year's data both in acknowledgement that the maturation of those trends may be signposts for the cyclical shift we're wary of, but more so in the spirit of gratitude and as a testament to remarkable human and economic resilience.

Figure 1: Employment statistics



Source: Bloomberg, data as of September 30, 2021.

Figure 2: Consumer Confidence relative to SMB Hiring Plans



Source: Bloomberg, data as of September 30, 2021.

Equity volatility

Since mid-last month, US equities rose about 5% with very low realized volatility.[1] We can express this with a 30-day measure of about 8% annualized, or only +/- 0.5% daily spot moves.[1] Such a dynamic can be described as a "Goldilocks" of positive returns with low levels of variation. Setting new all-time highs in this context then almost seems natural.

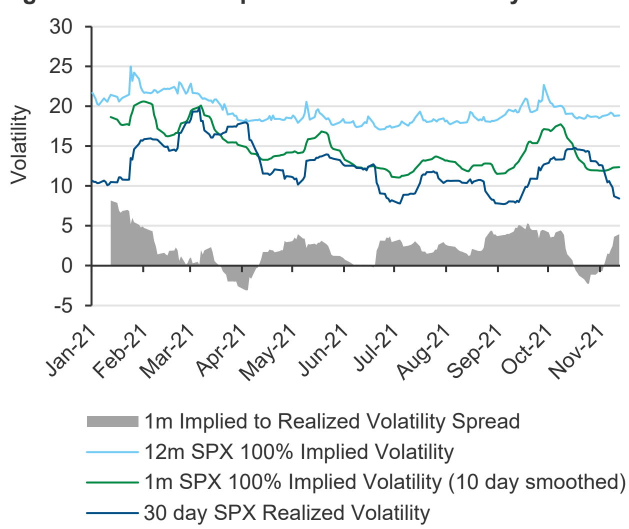
Nonetheless, pricing in the option market remains divergent to what might otherwise be expected under such conditions. Namely, one would expect overall implied volatility levels to decline, particularly if trends such as low realized volatility (the dark blue line in *Figure 3* below) are sustained (as we've seen through all of 2021).

Admittedly, the spread between one-month implied to realized volatility (green and dark blue lines) remains only moderately positive. This reflects a responsive option market that tracks short-dated movements. Likewise, each of these two components has tracked uptrends in equities with softening premiums. This drives an upward sloping term structure, which is "normal" such that there is more uncertainty priced for longer dated optionality.

Nonetheless, two bipolar segments of the option market are supporting volatility: long term hedgers on the put side, and suspected speculative retail on the call side. Long dated implied volatility remains stubbornly elevated and has remained bounded by a high floor since the 2020 crash. We have been highlighting this throughout the year as clients more willingly spending premium for protection, and regularly observing dealer commentary stating that "the market is well hedged."

The flip side of these institutional hedgers are regularly maligned retail traders chasing single stock call leverage. This activity has been so intense so as to flatten S&P 500

Figure 3: S&P 500 implied v. realized volatility



Source: Bloomberg, data as of November 15, 2021.

skew, not so much from a relative cheapening of protection, but from a relative chase for upside, supporting all elements of the volatility surface.

Rates market

Figure 4: US rates environment

Index	11/15/2021	One month ago	Three months ago	One year ago
Fed Funds Rate	0.25	0.25	0.25	0.25
2y	0.52	0.39	0.21	0.18
5y	1.25	1.13	0.76	0.41
10y	1.61	1.57	1.27	0.91
30y	2.00	2.04	1.93	1.66

Source: Citi, data as of November 15, 2021.

Front end rates continue to hit new highs and the curve continued to flatten on the back of global central bank rhetoric and decades-high inflation prints. Prior to the November 3 FOMC meeting, Chair Powell made comments at a virtual conference stating that above target inflation would persist longer than the Fed had anticipated, as supply chain issues and delays persevered. While he did give a strong indication that it was time to taper, he continued the emphasize that the end of tapering does not signal the start of rate hikes. This, coupled with hawkish statements from the BOE and Bank of Canada (which ended its bond buying program and pulled forward their rate hike timing), pushed the 2-year treasury rate up to 0.50 to end October, up about 23 basis points from where it started the month.

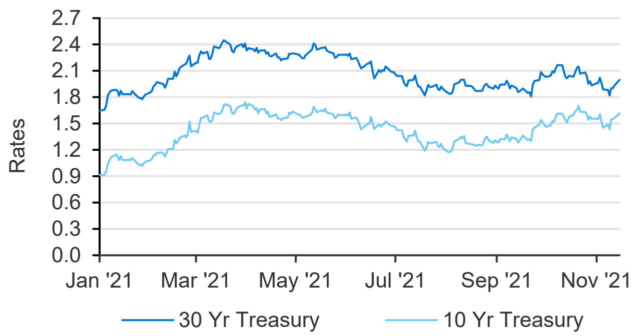
The long end of the yield curve rallied on the month, closing out October at 1.93. The moves in the 30-year treasury rate were puzzling at times; it seemed counterintuitive for that yield to be falling when inflation concerns continue to mount. Most argued that this was due to positioning – too many speculators were short the long end and when it didn't sell off, they closed out positions, which led to a rally and further stop outs that further precipitated more rallying. Overall, the 2s30s curve flattened about 30 basis points over the last week and a half of October.

The first week of November saw a slew of central bank meetings that all came in dovish to expectations, starting with the RBA. Next up was the Fed, and while there were no big surprises, overall, the tone of the statement and ensuing press conference was dovish. The taper was announced as expected with a $15bln/month pace. More telling though was that the FOMC statement still contained the word "transitory", which many had expected to be dropped. Chair Powell emphasized flexibility in the timing of rate hikes in the future.

The following day the BOE had perhaps the most dovish surprise, keeping rates unchanged despite near universal expectations for a 15 basis point increase. The October jobs report came in strong on almost all measures – a

+531k job gain versus a +450k consensus expectation, the unemployment rate moving down 0.2% to 4.6%, and average hourly earnings up another 0.4% month-over-month. It should be noted that part of the dip in unemployment was due to the labor force participation rate staying steady rather than ticking up as many economists expected, echoing labor shortage concerns many corporations have been seeing.

Figure 5: US Treasury rates



Source: Bloomberg, data as of November 15, 2021.

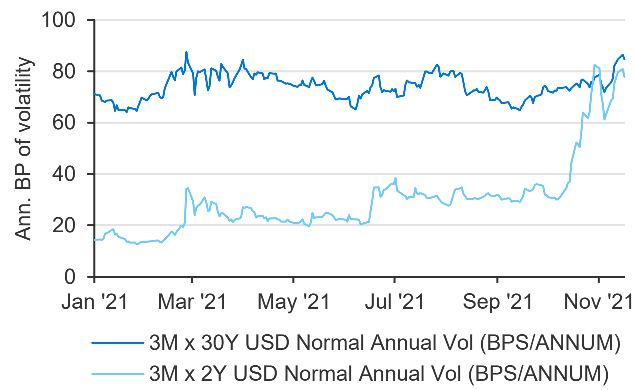
Despite these blockbuster numbers, the US yield curve (either moving in sympathy with Europe or from another round of short squeezes) had an aggressive bull flattening. The following week the long end continued to rally with the 30-year treasury dipping below 1.80 as global yields moved lower and the market started assigning a non-zero probability to a more dovish Brainard-led Fed. All these bullish moves quickly reversed course with a decades-high CPI print. The headline print was +0.9% month-over-month and +6.2% year-over-year, the fastest growth since 1990 while the +4.6% year-over-year core CPI print was the highest since 1991. The entire curve sold off about 10 basis points in near parallel fashion. After the Veterans Day shortened week, the long end has continued selling off this week to get back above 2.00, fueled in part by a heavy supply of long dated IG issuance.

Rates volatility

The rollercoaster moves in rates were mirrored in the rate volatility market (*Figure 6* below). While the left-hand side implied vols rose and fell with short end rates, vol on longer tails was fueled by high realized moves over the past month. The end result is that short dated options across all tails are at or near their 1-year highs. For most of October, the focus in the rate vol market remained on the upper left and signs of rate hikes getting pulled forward.

There was a big spike in upper left vols at Powell's virtual conference a week and a half ahead of the FOMC meeting. The options market looked to him to calm some of the front-end price action, but that didn't occur. The forwards continued to move higher in yield and the vols shot up as well. The final week of October vols remained well bid, particularly in the aftermath of the hawkish Bank of Canada meeting. 3m2y started October at an implied vol of 32 and ended the month around 84 as that forward rate rose nearly 40bps on the month. Outside of the upper left, October saw buying interesting in higher rates on belly tails and outright buying of vol on 30y tails, driven by the high delivered vol we've seen in the back end of the curve with all the twist flattening moves.

Figure 7: Volatility spreads



Source: Citi, data as of November 15, 2021.

In the wake of universally dovish central bank meetings, vols cratered the first week of November, particularly on the upper left. Vols came down sharply ahead of the FOMC meeting. A subsequent front-end selloff the following week saw 3m2y bounce back to 70abpv. Gamma on longer tails followed a similar pattern to start November although much more muted. 3m30y dropped 6 annuals leading up to and after the FOMC, but saw a small recovery post non-for profits due to the unexpectedly high delivered vol in the bull flattening of the curve.

Figure 6: Rate volatility

Exp/Tail	1Y	Change	2Y	Change	5Y	Change	10Y	Change	30Y	Change
1M	52.9	*28.2*	81.9	*41.1*	86.0	*22.3*	85.5	*13.3*	88.0	*14.7*
3M	52.6	*25.0*	77.9	*33.8*	84.1	*17.8*	84.2	*11.4*	84.9	*11.3*
6M	63.9	*26.1*	82.4	*29.6*	82.5	*13.3*	83.0	*9.9*	82.2	*9.5*
1Y	77.4	*21.5*	84.0	*16.1*	82.4	*8.5*	81.0	*7.1*	79.3	*7.9*
2Y	86.3	*12.0*	85.7	*9.9*	81.1	*5.3*	78.4	*4.8*	74.4	*5.8*
3Y	86.0	*6.1*	84.6	*6.6*	79.5	*3.3*	76.5	*3.5*	70.8	*4.2*
4Y	84.4	*5.6*	82.9	*5.4*	78.8	*3.3*	74.6	*2.6*	68.8	*3.7*
5Y	82.0	*3.7*	80.8	*4.1*	76.8	*1.7*	72.7	*1.6*	66.1	*2.6*
7Y	77.0	*2.1*	76.5	*2.5*	73.6	*1.3*	69.3	*1.1*	62.0	*1.9*
10Y	70.7	*1.4*	70.4	*1.4*	67.7	*0.7*	64.1	*0.4*	57.1	*1.2*

Source: Citi, data as of November 15, 2021.

Not surprisingly, the highest headline CPI print in 30 years sent vols screaming higher. The entire gamma surface was up 10-20abpv in the days following the CPI release. 3m2y rallied back to 81abpv, closest to the highest level of the year as the red and green ED packs hit new highs for implied yields. Gamma across all tails is basically at the YTD highs.

While this level of vol is about what we saw in spring of this year when 10y rates were only 10-15bps higher, the 30y rate is 50bps off its Q1 highs but still at the highest vol of the year, at 5.4bps/day. And while this level does seem elevated, the delivered vol on the 30y rate has exceeded that over the past month. Longer dated vol has been dragged higher in sympathy with the rest of the surface, resulting in a highly inverted surface on the 30-year tails. This could lead to increased calendar spread or forward vol trading in 30-year tails given the attractive entry point. The breakdown of the historic correlations between front end and back end rates, illustrated by the several days of twist flattening experienced over the past month, have led to a strong bid for curve options.

Figure 8: Trailing one-month realized volatility

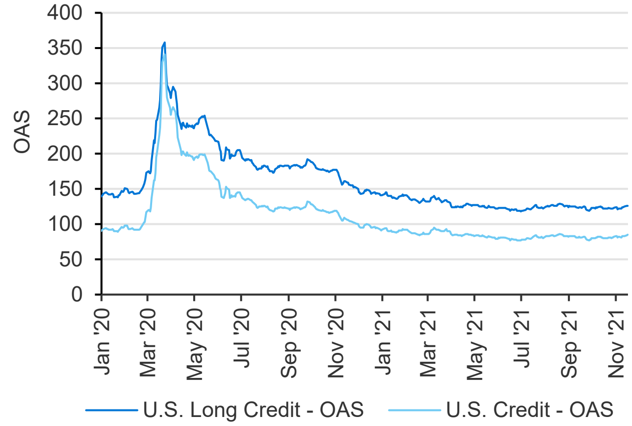
Source: Bloomberg, data as of November 16, 2021.

Credit market

Throughout the first half of November, spreads have been modestly range-bound. The US Long Credit index tightened to 121 in the first week of the month, before retracing back to October month-end levels. Relative sector moves were minimal over the past month, with marginal underperformance seen in TMT while banks outperformed. Similar to last month, the BBB-to-A-rated spread ratio at the long end is trading at the 4th percentile. As of November 12th, the US Long Credit Index OAS currently stands at 125 basis points, 1 basis point wider on the month and 16 basis points tighter on the year.

Despite a below consensus GDP print of 2% for the third quarter, the US appears to be emerging from the Delta-induced slowdown. The loss of economic momentum during this most recent wave will likely be recovered as inventories are rebuilt in the coming quarters. The big question is how quickly the US will return to trend-like growth over the next few years. The ending of excessive

Figure 9: US credit spreads



Source: Bloomberg, data as of November 16, 2021.

fiscal support could act as a drag on growth as soon as next year; however, growth tailwinds could emerge from the deployment of excess consumer savings, the inventory restocking effect, and government spending from bills such as the bipartisan infrastructure plan.

The rising impact of inflation will also be important to monitor, as it could require an earlier than expected hiking cycle. With tapering now underway, investor focus has shifted to the timing of Fed liftoff from the zero bound. If inflationary pressures remain robust into 2023 with economic growth running above trend, there is a case to be made that the pace of hikes might need to exceed that observed in the previous cycle and revert to the pre-financial crisis pace of once per meeting.

So far in November, we've seen a touch over $33 billion in new issuance come to market. This brings total issuance for the year to roughly $1,251 billion. While gross supply continues to surprise to the upside, liability management exercises have kept net supply in check. Foreign demand has remained robust, while retail demand continues to fade. Next year, we expect net supply to drop for both investment grade and high yield credit. Furthermore, we expect rising stars to be a major theme in 2022 as ratings agencies catch up to improved conditions.[2]

With roughly 90% of the S&P 500 having reported, 3Q earnings season continues the streak of strong revenue and earnings growth following the pandemic. Revenue growth over the quarter is expected to exceed 16% while EPS growth is currently trending above 37%.[1] So far, earnings have managed to show less disruption than many market participants feared in the wake of Delta concerns. With that said, notable risk factors remain on the horizon, ranging from monetary policy to valuation levels, that lead us to remain moderately bearish on the US credit market going forward. ■

Contributors

Don Andrews, Head of Distribution and Client Solutions
David Chapman, Head of Multi-asset and LDI
Michael Kuszynski, Multi-asset Portfolio Manager
Revanta Pawar, Multi-asset Portfolio Manager
Neil Olympio, Senior Solutions Strategist
Anthony Woodside, Senior Solutions Strategist
Matt Cohen, LDI Portfolio Manager
Arin Bratt, Senior Research Analyst

1 Bloomberg
2 Bank of America

LGIM America