

US Fixed Income Markets Weekly

Cross Sector *Alex Roever, Alix Floman*

September has brought renewed energy to the bond markets, along with new supply. But old concerns linger. Market focus remains on FOMC and its taper plans, on Congress and its spending plans, and the debt limit. Yields on bills may higher and coupon yields may move lower the longer the debt limit.

Governments *Jay Barry, Phoebe White, Mike Fu*

We project Treasury will exhaust extraordinary measures and cash by the end of October. The risks of a technical default remain very low, but we review the ramifications as the drop dead date approaches. The 3-year sector is cheap along the curve. Near-term inflation risks have increased, but TIPS remain somewhat rich.

Interest Rate Derivatives *Alex Roever, Veronica Mejia Bustamante*

We turn neutral on spreads, unwinding swap spread narrowers as seasonal narrowing has not materialized. We turn neutral on short gamma as the rebound in market depth helped drive implied volatility to the lower end of recent ranges. We initiate 10s/30s swap spread curve steepeners.

Short-Term Fixed Income *Teresa Ho, Alex Roever, Holly Cunningham*

Bank CP/CD outstandings have grown by \$178bn YTD, driven likely by opportunistic funding and the attractiveness of the USD CP/CD markets. However, we don't anticipate supply to meaningfully grow from here. Corporates have shifted more of their cash investment portfolios into marketable securities versus deposits/MMFs.

MBS and CMBS *John Sim*

We remain neutral on mortgages versus rates. Under conservative CPY and our Flush and Extend scenario, we think 2012 vintage LCF AAAs can offer attractive spreads at expected WAL under 1yr.

ABS and CLOs *Amy Sze, Rishad Ahluwalia*

Strong technical momentum carries with tighter spreads this week as the primary ABS market fires up once again.

Investment-Grade Corporates *E. Beinstein, N. Rosenbaum, P. Talreja*

HG investors easily digested a very busy week of well telegraphed supply, as is typical for early September. HG technicals and fundamentals remain robust, in our view.

High Yield *Nelson Jantzen, Tony Linares*

Our new forecasts for FY21 institutional loan gross and non-refi/repricing issuance are \$825bn (from \$775bn) and \$350bn (from \$265bn). And our forecasts for 2021 HY bond gross and non-refinancing related issuance are \$525bn (unchanged) and \$175bn (+\$15bn).

Municipals *Peter DeGroot, Ye Tian*

The municipal market struck an uneasy tone in the week's holiday shortened session, with light customer purchases against elevated selling in both tax-exempt and taxable municipal markets.

Emerging Markets *Luis Oganés, Trang Nguyen*

In EM fixed income, we are OW EM sovereign credit, OW EM corporates and MW EM local rates. EM bond flows were +\$1.7bn (+0.30% of weekly AUM, up from +\$997mn).

U.S. Fixed Income Strategy

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See page 130 for analyst certification and important disclosures.

Summary of Views

| SECTOR | CURRENT LEVEL Sep 10, 2021 | YEAR-END TARGET Dec 31, 2021 | COMMENT |
|--|-------------------------------|---------------------------------|---|
| Treasuries | | | |
| 10-year yield (%) | 1.34 | 1.75 | Hold 10-year duration shorts and 3s/7s steepeners |
| 5s/30s curve (bp) | 112 | 135 | |
| Technical Analysis | | | |
| 10-year yield (%) | 1.34 | 1.75 | The bearish price pattern progression favors increased bearish pressure through 2H21 Late-2Q21 flattening looks overdone, we expect curve to steepen through the summer |
| 5s/30s curve (bp) | 112 | 135 | |
| TIPS | | | |
| 5-year TIPS breakevens (bp) | 240 | 245 | Stay short Apr-26 TIPS versus notional-neutral long in Apr-22 TIPS |
| Interest Rate Derivatives | | | |
| 2-year swap spread (bp) | 9 | 7 | We now recommend turning neutral on swap spreads and unwinding swap spread narrowers |
| 5-year swap spread (bp) | 9 | 7 | |
| Agencies | | | |
| 5Y Agy spd to Tsy (bp) | 0 | 4 | Remain underweight 5-year Agencies vs. Treasuries |
| Agency MBS | | | |
| FNMA 30yr 2.5% Front Tsy OAS (bp) | -10.4 | 0 | We remain neutral on mortgages versus rates |
| RMBS Credit | | | |
| CRT M2 | 1ML + 165bp | 1ML + 185bp | 2.0 PTs offer OAS pickup to comparable CK. Faster speeds improve spread profile of new issue non-QM, particularly subs. We prefer seasoned CRT B1s with SSRA structure which are insulated from any changes to DQ trigger pass dates and modification losses. |
| RMBS 2.0 PT | 1-05bk of CK | 0-31bk of CK | |
| AAA RPL | N + 65bp | N + 70bp | |
| AAA Non-QM | N + 60bp | N + 55bp | |
| ABS | | | |
| 3-year AAA credit cards fixed (bp) | 2 | 4 | Our top pick across senior high quality ABS is AAA/AA market place lending (MPL) ABS; in subordinates of riskier assets, we still prefer sticking to top tier sponsors |
| CMBS | | | |
| 10yr new issue LCF AAA (bp) | 68 | 60 | We think there is still some room for conduit to tighten and for the credit curve to flatten further |
| Investment-grade corporates | | | |
| JULI spread to Treasuries (bp) | 109 | 105 | HG bond spreads have rebounded from the growth scare of two weeks ago and continue to trade well, in a narrow range near the YTD tightest level |
| High yield | | | |
| Domestic HY Index spread to worst (bp) | 379 | 360 | |
| Credit Derivatives | | | |
| High Grade (bp) | 49 | 50 | CDX.HY versus CDX.IG spreads have decompressed considerably in July. The spread ratio between the two indices has increased by 0.2x since the start of the month to 5.8x, around its highest level YTD |
| High Yield (bp) | \$109.8/279 | \$110.5/270 | |
| Short-term fixed income | | | |
| SOFR (%) | 0.05 | 0.05 | |
| 3m T-bill (%) | 0.04 | 0.05 | |
| 3m Libor (%) | 0.11 | 0.20 | |
| HG corp FRN (bp) | 12.3 | 0 | |
| CLOs | | | |
| US CLO Secondary AAA (bp) | 103 | 90 | CLO absolute returns are tempered by the near-complete spread recovery, low Libor, near-par pricing, and eventual call risks (34% exit reinvest 2021-2022) |
| Municipals | | | |
| 10-year muni yield (%) | 0.94 | 1.35 | The fundamental underpinnings of the municipal market will continue to be supported by the reopening of the economy and sizable Federal assistance. The potential passage of infrastructure legislation inclusive of direct pay bonds could be accretive to taxable municipal bond issuance |
| 30-year muni yield (%) | 1.53 | 1.85 | |
| Emerging Markets | | | |
| Hard currency: EMBIG Div ex Venezuela (bp) | 342 | 310 | OW EMBIGD |
| Hard currency: CEMBI Broad (bp) | 251 | 225 | OW CEMBI Br |
| Local currency: GBI-EM yield (%) | 5.09% | 5.06% | MW overall |

Source: J.P. Morgan

Cross Sector Overview

- September has brought renewed energy to the bond markets, along with new supply. But old concerns linger. Market focus remains on FOMC and its taper plans, on Congress and its spending plans, and the debt limit. Yields on bills may move higher and coupon yields may move lower the longer the debt limit remains unresolved.
- **Rates:** The Treasury market remains priced for sub-trend growth over the coming year. Ten-year Treasury yields are trading more than 25bp below their model-implied fair value. To be fair, yields tend to mean-revert with relatively low frequency, but this is one of the largest gaps we have observed in recent years.
- **Credit:** The traditional post-Labor Day supply surge is on. Through Thursday, High Grade (HG) markets saw over \$72bn of new supply, bringing YTD gross supply to \$1.055tn. However, net HG issuance (new issue less maturities, refinancing's, etc.) is expected to decrease about 47% from 2020's record level.
- **Technical:** The reduction of overbought conditions and a lack of setup that would suggest an imminent technical flow to push all points of the curve to higher yield levels leave us looking for something else to drive a bearish pattern break and trend to higher yields.
- **Near-term catalysts:** COVID/vaccination/hospitalization (ongoing), PPI (9/10), CPI (9/14), FOMC (9/22).

With summer over, markets reawaken

September in the bond markets has a way of quickly making up for the slow summer days, often bringing a renewed sense of urgency that August usually doesn't reflect. This week's activity definitely points to busier markets. There is plenty of new supply for both Treasuries and corporates. Markets are focused on the FOMC and its September 22 meeting, as well as on the return of Congress and what it means for the infrastructure bills and the debt limit.

Must Read This Week

[Back to school essentials: Downside risks to growth but stay with the deflation and recovery trade](#)

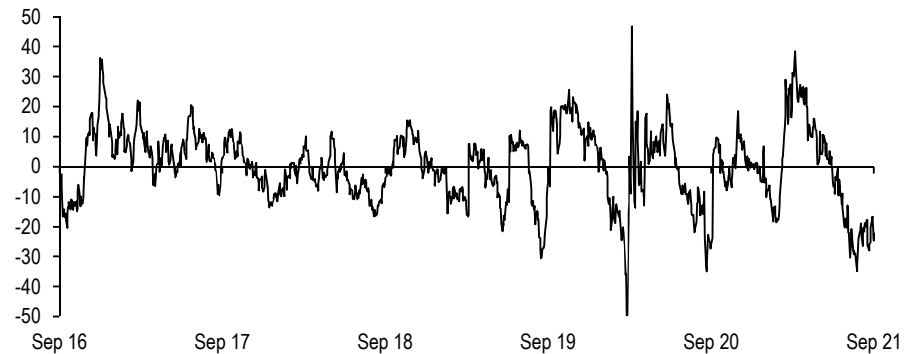
Joyce Chang, et al, 9/7

[US Credit Strategy Snapshot](#)

Eric Beinstein, Nelson Jantzen,
Rishad Ahluwalia, 9/9

Exhibit 1: Intermediate yields remain more than 25bp below their model-implied fair value

Residual of J.P. Morgan 10-year Treasury Fair-Value model*; bp



* Regression of 10-year Treasury yields on 5Yx5Y seasonally-adjusted TIPS breakevens (%), 3m3m OIS rates (%), Fed policy guidance (months), J.P. Morgan US Forecast Revision Index (%), and CFTC spec positions in interest rate futures (3y z-score). Regression from 9/10/16-9/10/21. R-squared = 97.0%, SE = 12.0bp
Source: J.P. Morgan, CFTC

Since the beginning of September, intermediate Treasury yields have moved only modestly higher, while the front- and back-ends have done precious little. Month to date, 2-, 5- 10-, and 30-year Treasuries rose 1bp, 4bp, 3bp, and 0bp, respectively. Our Treasury strategists note that short covering and increased demand by foreign investors likely contributed to the strength of this past week's auctions. On top of this, the continued high level of COVID-19 infections and recent disappointments in economic data have weighed on yields. The Treasury market remains decidedly priced for sub-trend growth over the coming year. **Exhibit 1** shows that 10-year Treasury yields are trading more than 20bp below their model-implied fair value. To be fair, yields tend to mean-revert with relatively low frequency, but this is one of the largest gaps we have observed in recent years. Putting the pieces together, we continue to think that the spread of the Delta variant will have a more limited impact on US growth, and there are early indications that this fourth wave of infections is peaking. Moreover, with valuations still rich, we recommend maintaining shorts in 10-year Treasuries (see Treasuries).

While it's hard to say yields are close to breaking out of their recent ranges, we continue to think the ultimate direction of travel for the yield curve is higher and steeper — but the Treasury market has some issues to work through first. Most notably, these include the September FOMC meeting and the debt limit. The September FOMC could present an upside risk to yields. OIS forwards continue to imply Fed liftoff will occur in late 1Q23, but are afterwards pricing in only 2.5 additional 25bp hikes by the end of 2024. With the latest SEP already projecting the unemployment rate below 4% and inflation above 2% in 2023, it's likely the 2024 dots project a more aggressive path of tightening when they are introduced on September 21 (see *Economics*).

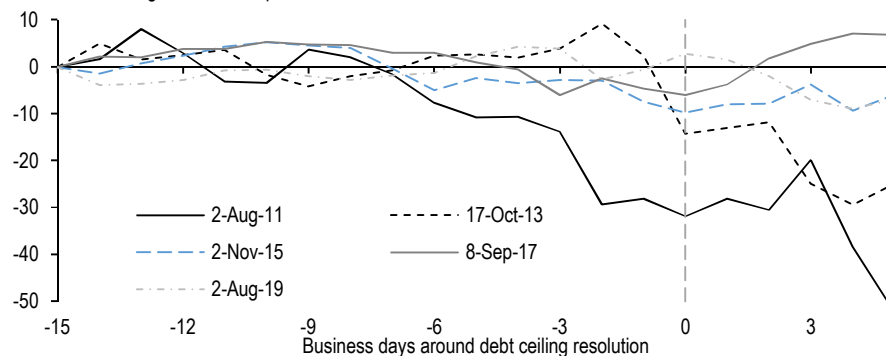
As for the debt limit, time and funding are running down, which is the way these affairs often tend to go before a resolution is found. Earlier this week, our Treasury strategists found that Treasury has used approximately \$275bn in extraordinary measures in August and, on its current path, is likely to exhaust all available resources to continue borrowing normally under the debt limit by late October. While a pending limit isn't reassuring to markets or voters, rising fiscal anxiety can be a useful political lever in the halls of Congress. We know Congress has many balls in the air right now: the bipartisan infrastructure package has been passed by the Senate, but the House will not take this up for a vote until later this month. Moreover,

Congressional leadership continues to debate the size and scope of what will be included in the \$3.5tn budget resolution passed by the House late last month. Finally, Congress needs to pass a new continuing resolution to authorize spending for FY22 by the end of the month, or else it risks a government shutdown. Amid all this, the debt ceiling has taken a back seat, which has concerned investors that negotiations will run into October. Indeed, the House isn't even back in session until September 20, which would seem to imply that several weeks of discussions could potentially precede a debt limit resolution.

For a more complete overview of the market dynamics of the debt limit, please see the discussion in this week's *Treasuries* section. But, the closer the drop dead date grows, the high level implications for yields are 1) the potential for a delayed payment tends to push bill yields higher for maturities around the expected date, and 2) in previous episodes, yields on coupons have moved lower as overall risk aversion increases as available funds approach zero (**Exhibit 2**).

Exhibit 2: Treasury yields have tended to decline during contentious debt ceiling debates, particularly 2011, 2013, and 2015

Cumulative change in 10-year Treasury yields, adjusted for the Fed and inflation expectations*, in the business days around debt ceiling resolutions; bp



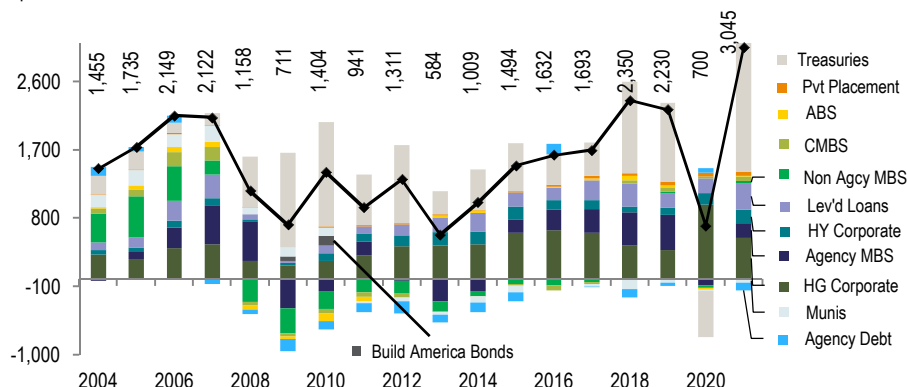
* 10-year yields regressed on 3m3m OIS rates and 5y5y TIPS breakevens over rolling 2-year period
Source: J.P. Morgan

Aside from the activity in the Treasury market, the end of summer often features a strong seasonal narrowing in swap spreads, which had been a factor in our recent tactical bias towards narrower swap spreads. But this year, just as in 2020, the expected seasonal narrowing in spreads has not materialized despite the fact that recent High Grade issuance has been quite strong. The window for this seasonal narrowing bias is thus likely now past. In addition, swap spreads are also likely to resist narrowing in the coming weeks due to the lack of an imminent resolution to the debt ceiling. And, as we just noted, Treasuries are likely to remain well bid in the coming weeks, at least until a debt limit resolution seems imminent. Only when a resolution is imminent have swap spreads tended to narrow in prior episodes. Therefore, we now recommend turning neutral on swap spreads and unwinding spread narrowers (see *Interest Rate Derivatives*).

Corporate spreads unmoved by September supply surge

Exhibit 3: Seasonally, September tends to be the heaviest month of the year for duration supply, and we expect an uptick in spread product issuance next month

Gross duration supply in UST, MBS, HG Credit and Munis by month, 2016-2020 average; \$bn of 10-year Treasury equivalents



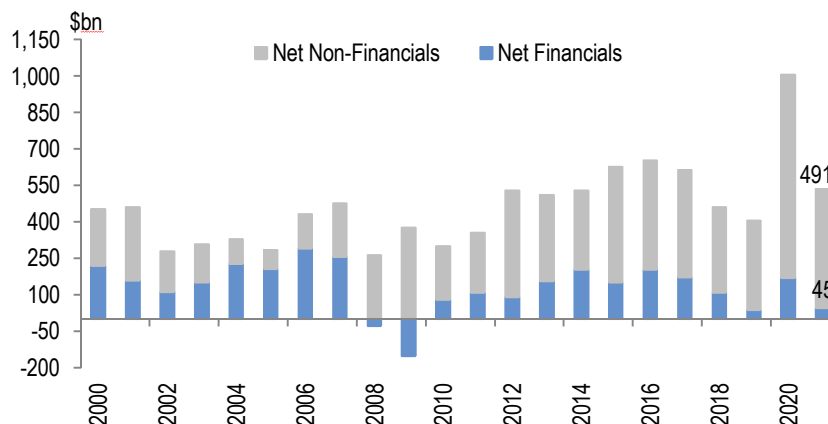
Source: J.P. Morgan, SIFMA, adjusted for changes in Federal Reserve balance sheet holdings

September is often a big supply month, especially for corporates. So far, this appears to be true for this year as well. But before we even start to talk about September, it's worth noting that 2021 has figured to be a big supply year for many asset classes. Exhibit 3 reflects our current gross duration supply forecasts full-year 2021 by sector. Still, it is notable that most of the net supply increase is in Treasuries, and that in aggregate, corporates are not likely to be out of step with years prior to 2020.

As for the credit markets, the traditional post-Labor Day supply surge is on. Through Thursday, High Grade (HG) markets saw over \$72bn of new supply (~\$65bn/\$7bn fixed vs. FRN), bringing YTD gross supply to \$1.055tn. However, net HG issuance (new issue less maturities, refinancing's, etc.) is expected to decrease about 47% from 2020's record level (Exhibit 4).

Exhibit 4: Net HG issuance is expected to decline 47% vs 2020's record level

HG Corporate net issuance by year, separated by issuer type. \$bn.



Source: J.P. Morgan and Dealogic

Our strategists note that the September supply is coming so quickly and early in the month that investors may get comfortable with the notion that the heaviest supply

period is behind them by mid-month. But neither the pace of supply nor recent volatility in equity markets is translating into wider spreads. At current tight valuations in many markets including HG credit, there is not much room for spreads to tighten, but we still believe the trend is modestly tighter to year-end. HG spreads (JULI at 112bp) are currently close to the middle of the 9bp trendless range (107-116bp) of the past 3 months. Over the past 3 months the US economy has been subject to yet another COVID-19 wave, modest shifts in Fed rhetoric, lower UST yields, and \$278bn of HG supply, all of which have been insufficient to move spreads much in either direction. We don't foresee any near-term catalysts that would leave us inclined to have the view that this range is likely to break. But those readers looking to explore the current state of credit technicals and fundamentals will find a thorough discussion in this week's [Credit Markets Outlook and Strategy](#).

The story in High Yield (HY) markets is very similar. Supply is having little discernable effect on spreads. HY bond yields and spreads decreased 6bp and 4bp on Thursday to 4.30% and 378bp. Yields had reached a record low of 4.22%, and spreads a multi-year low 369bp in early July. By rating, BB, B and CCC spreads are now 251bp (-2bp d/d), 420bp (-6bp d/d), and 672bp (-5bp d/d) which is 0.3%, 3.6%, and 9.9% above their year-to-date lows of 250bp, 405bp, and 611bp (see *High Yield*)

The surge in credit supply in HG and HY also extends to CLOs. Our CLO strategy team this week has raised its US CLO supply forecast to \$145-155bn (from \$130-140bn), and we raise our European CLO new supply forecast to €30bn (from €25bn, €23bn YTD). Globally, new CLO supply is expected to reach about \$185bn in 2021, setting a record and surpassing the previous global high of \$161bn in 2018. New US CLO supply remains on a record trajectory with \$112bn YTD, and by year-end, CLO net supply growth is expected to be 20%. In 2021, CLO supply has averaged \$13.6bn per month and there have been 6 months, and the new supply forecast implies about \$9-10bn per month. While we are expecting there will be healthy demand, we also slightly adjust our US CLO AAA primary spread forecast from 100bp to 110bp (currently 119bp midpoint). Our revised spread target is only partly related to supply, but importantly, it is also a function of low yields relative to plain vanilla US Treasuries (see *CLO*).

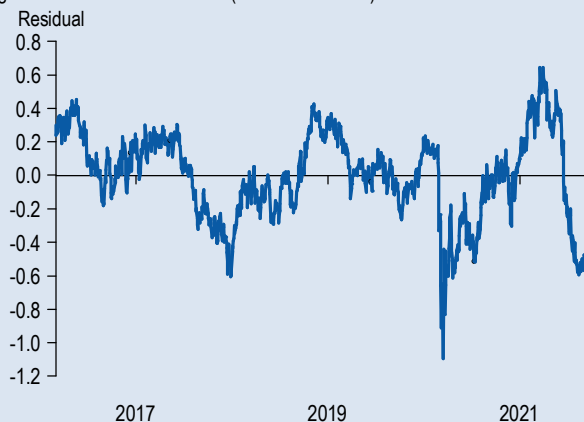
Technical analysis

Chart based technicals remain generally unchanged for Treasuries, as the market retains the same range parameters. For the 10-year note, yields look to be bearishly basing in front of key support parameters surrounding 1.40%. In our view, a move through support would shift medium-term trend momentum back to bearish for the first time since early-spring. Similar patterns are present in other cyclically sensitive markets, most notably WTI crude and the Energy sector in US equity markets, as well as commodity sensitive FX pairs. With technical conditions now neutral, we look to either improved economic surprise index trends to underpin any developing bearish trend momentum, or upside breakouts in commodity markets to suggest a broader array of market participants are looking past the current lull in the data.

The ratio of industrial to precious metals has a longstanding correlation to global bond yields. During the COVID-19 era, industrial metals 12-month performance appears to have a stronger relationship. The renewed strength in industrial metals this week adds some confidence to our view. The Aluminum rally accelerates after the break from a multi-month consolidation pattern, Copper moves back toward the upper end of its multi-month consolidation, and the Copper/Gold ratio also recovers back toward the May-Jul cycle highs. The regression models in **Exhibit 5** and **Exhibit 6** look at long duration yields and specifically the projected Fed Funds Terminal rate in the context of the commodity price action. Linear regressions since Mar 2016 and Mar 2020 both show longer duration yields too low and near the lower-end of their residual ranges, roughly 60bp and 30bp respectively. At minimum, we expect the market to retest the 1.79% 2018 50% retrace and Mar yield high into the fourth quarter. We also still see the prospects for that trend to extend to the next zone of support in the 1.90s in the months ahead.

Exhibit 5: The ratio of industrial to precious metals has a longstanding correlation to global bond yields. During the COVID-19 era, industrial metals 12-month performance appears to have a stronger relationship...

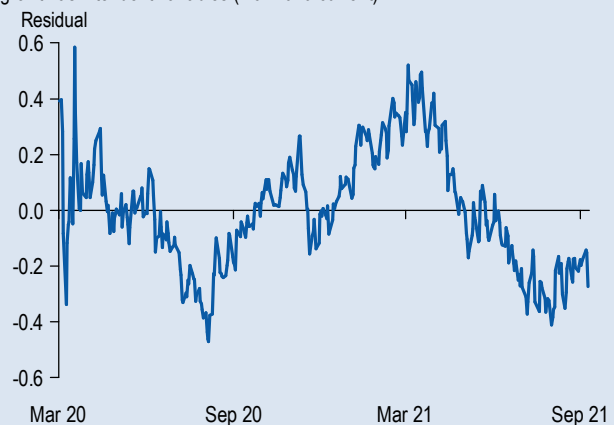
Residual of projected Fed Funds Terminal rate (Max 1m OIS rate in forwards over a ten year period) from a regression that uses the J.P. Morgan Industrial Metals/Precious Metals Index ratio and J.P. Morgan Industrial Metals Index YoY growth as intentent variables (Mar 2016-current)



Source: J.P. Morgan, CQG

Exhibit 6: ...With industrial commodities showing some signs of life recently, a multivariate analysis using both of those factors as independent variables shows long duration yields 30-60bp too low.

Residual of projected Fed Funds Terminal rate (Max 1m OIS rate in forwards over a ten year period) from a regression that uses the J.P. Morgan Industrial Metals/Precious Metals Index ratio and J.P. Morgan Industrial Metals Index YoY growth as intentent variables (Mar 2020-current)



Source: J.P. Morgan, CQG

Cross-Sector Monitor

Exhibit 7: Since our last publication, the Treasury curve bear steepened; credit spreads tightened overall

Current level, change since 8/27/21, 1-year average, minimum, maximum, and current z-score for various market variables; units as indicated

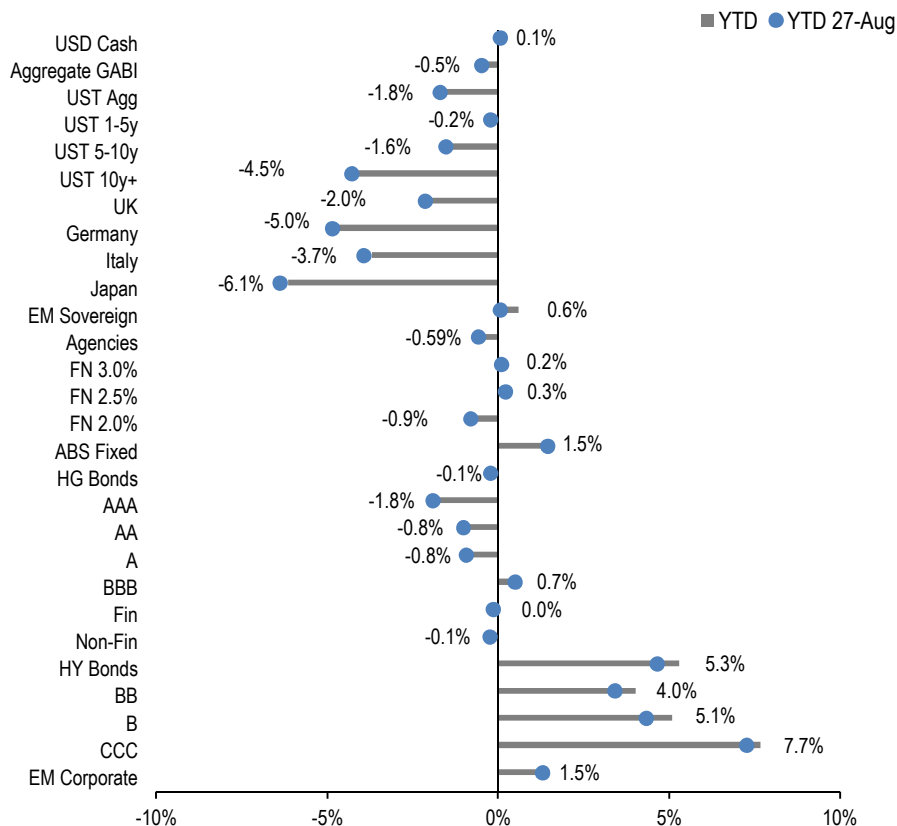
| | | Current | Chg from 8/27 | 1Y avg | 1Y min | 1-year range | | | 1Y max | Z-score |
|-------------------------|---|---------|---------------|--------|--------|--------------|-----------|------------|--------|---------|
| | | | | | | ● 9/10/21 | ▲ 8/27/21 | ■ 1M range | | |
| Global equities (level) | S&P 500 | 4459 | -1.1% | 3948 | 3237 | | | | 4537 | 1.4 |
| | E-STOXX | 4170 | -0.5% | 3760 | 2958 | | | | 4232 | 1.2 |
| | FTSE 100 | 7029 | -1.7% | 6679 | 5577 | | | | 7220 | 0.8 |
| | Nikkei 225 | 30382 | 9.9% | 27543 | 22977 | | | | 30468 | 1.3 |
| Sovereign par rates (%) | 2Y US Treasury | 0.22 | 0.8 | 0.17 | 0.11 | | | | 0.27 | 1.5 |
| | 2Y Germany | -0.75 | 2.7 | -0.74 | -0.85 | | | | -0.67 | -0.1 |
| | 2Y JGB | -0.12 | 1.0 | -0.13 | -0.16 | | | | -0.10 | 0.9 |
| | 10Y US Treasury | 1.35 | 2.5 | 1.25 | 0.64 | | | | 1.78 | 0.3 |
| | 10Y Germany | -0.37 | 8.2 | -0.42 | -0.65 | | | | -0.10 | 0.3 |
| | 10Y JGB | 0.06 | 2.1 | 0.06 | 0.01 | | | | 0.17 | -0.2 |
| Funding spreads (bp) | 2Y EUR par swap/gov't spd | 29 | 0.2 | 25 | 20 | | | | 34 | 1.3 |
| | 2Y USD par swap/gov't spd | 10 | 0.1 | 9 | 6 | | | | 13 | 0.7 |
| | EUR FRA-OIS spd | -5 | 1.4 | -5 | -7 | | | | 1 | -0.1 |
| | USD FRA-OIS spd | 9 | 0.6 | 10 | 3 | | | | 24 | -0.2 |
| | 1Y EUR-USD xccy basis | -7 | 0.6 | -8 | -14 | | | | -4 | 0.4 |
| | 1Y USD-JPY xccy basis | -17 | 0.7 | -20 | -30 | | | | -13 | 0.9 |
| Credit spreads (bp) | 30Y FNCL 2.5% Front Tsy OAS* | -6 | 2.0 | -8 | -32 | | | | 11 | 0.2 |
| | 10Y AAA new issue CMBS spd to swaps | 68 | 0.0 | 71 | 60 | | | | 97 | -0.3 |
| | 3Y AAA card ABS spd to Libor | 11 | 0.0 | 19 | 11 | | | | 33 | -1.2 |
| | JULI portfolio spd to Tsy | 110 | -2.6 | 127 | 107 | | | | 175 | -0.9 |
| | JPM US HY index spd to worst* | 378 | -15.5 | 445 | 369 | | | | 628 | -1.0 |
| | EMBIG Div spd to worst | 339 | -6.7 | 360 | 328 | | | | 439 | -0.7 |
| | CEMBI Broad spd to worst | 248 | -4.7 | 270 | 235 | | | | 350 | -0.7 |
| | iBoxx Euro HG spd to govies* | 61 | -0.9 | 60 | 54 | | | | 68 | 0.4 |
| | US Financials spd to Tsy | 76 | -2.1 | 88 | 75 | | | | 126 | -1.0 |
| | Euro Financials spd to govies | 78 | -1.0 | 79 | 72 | | | | 99 | -0.2 |
| | 10Y AAA muni spd to Tsy | -40 | 0.1 | -34 | -68 | | | | 23 | -0.2 |
| | 10Y AA taxable muni spd to Tsy* | 49 | 1 | 65 | 44 | | | | 106 | -0.8 |
| Currencies | EUR/USD | 1.183 | 0.4% | 1.195 | 1.162 | | | | 1.230 | -0.7 |
| | USD/CHF | 0.917 | 0.4% | 0.909 | 0.880 | | | | 0.943 | 0.5 |
| | USD/JPY | 109.84 | -0.1% | 107.28 | 102.79 | | | | 111.54 | 1.0 |
| | JPM Trade-weighted USD index | 119.50 | -0.4% | 119.62 | 117.20 | | | | 124.80 | -0.1 |
| | GBI-EM Global FX index | 89.37 | 0.7% | 88.74 | 85.19 | | | | 90.77 | 0.5 |
| | Bitcoin spot | 45078 | -7.9% | 35815 | 10224 | | | | 63410 | 0.6 |
| Commodities | Gold futures (\$/t oz) | 1798 | -1.1% | 1826 | 1678 | | | | 1962 | -0.4 |
| | Brent oil futures (\$/bbl)* | 71.45 | -1.7% | 60.32 | 37.65 | | | | 76.49 | 0.9 |
| | LME Copper 3M rolling forward (\$/tonne)* | 9388 | -0.2% | 8557 | 6387 | | | | 10460 | 0.7 |

* 9/9/21 levels for 30Y FNCL, US HY, iBoxx Euro HG, AA taxable munis, Brent oil, and copper; 9/10/21 level for all others

Source: J.P. Morgan, Bloomberg Finance L.P., ICE, IHS Markit

Exhibit 8: Total returns were mixed since we last published

Year-to-date returns on various fixed income indices current and as of last publication; %



Source: J.P. Morgan

Economics

-
- **The labor market tightened as job openings jumped to an all-time high in July**
 - **COVID-19 case growth has slowed recently and airline spending data show early signs of recovery**
 - **PPI inflation was firm overall in August, though some PCE-related categories were soft**
 - **We forecast the CPI rose 0.4% in August while nominal retail sales fell by 0.2%**
-

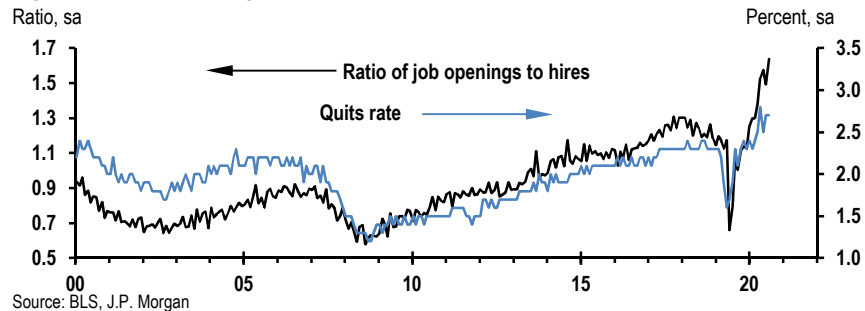
Job openings rose to new heights in July even as hires declined. This labor market tightening occurred as COVID-19 cases rose rapidly in July, suggesting that labor demand was relatively unaffected by the Delta variant even as pandemic-related factors further constrained labor supply. Such Delta-related headwinds to economic activity may subside soon, with case growth declining in recent weeks. Airline spending in the [Chase card spending data](#) is perhaps beginning to recover from its Delta-induced decline. PPI inflation prints were firm across the board in August, as expected, with the headline index up 0.7%/m/m and the core index up 0.6%/m/m. Prices for used vehicles declined in August while auto inventories fell further. Weaker-than-expected inventory data present some downside risk to our 7.0% saar GDP growth forecast for 3Q.

Next week we expect another firm CPI print, with the headline index up 0.4%/m/m (5.4%oya) in August and the core index up 0.31%/m/m (4.2%oya). While such rates of inflation are strong by pre-pandemic standards, they are softer than the rapid increases reported earlier this year. In part this cooling is expected now that pandemic-induced swings in prices for some sectors of the economy are normalizing. We also expect that nominal retail sales declined by 0.2%/m/m in August, with some pullback associated with the spread of the Delta variant. The September reading from the University of Michigan Consumers Survey, which fell sharply in August, may provide clues to how persistent Delta concerns are in weighing down sentiment.

Tight labor markets and declining claims

Job openings continued to rise rapidly in July, jumping by 749,000 to 10.934mn, evincing sustained growth in labor demand despite the coincident rise in COVID-19 cases. The number of hires, by contrast, edged down in July. Thus, the ratio of openings to hires—which measures labor market tightness and the ease with which firms can find workers—moved up to 1.64, a historically high level. The rate of quits, which tends to co-move with tightness, was unchanged in July at 2.7%—remaining at a level higher than any attained prior to the pandemic (Figure 1).

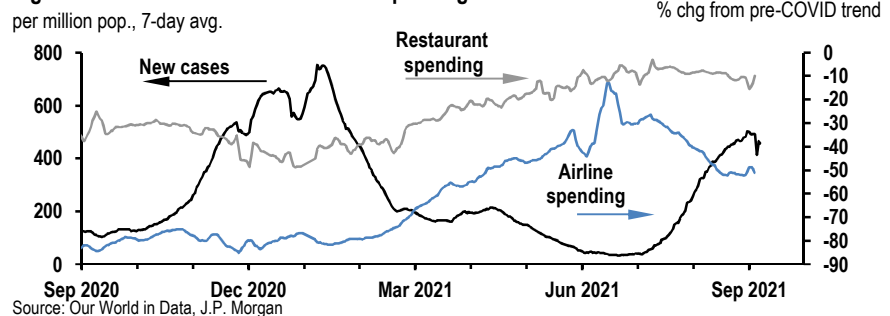
Figure 1: Labor market tightness and quits rate



This additional tightening of the labor market in July after easing in June suggests that labor demand is continuing to outpace labor supply. Evidence from sectoral measures of labor market tightness suggest that [much of the pickup in wage growth in recent months is attributable to elevated labor market tightness](#).

The loss of momentum in July hiring may be attributable to the resurgence of COVID-19 cases, which increased more than sixfold that month. Indeed, the Delta-variant-led rise in cases [contributed to a decline in consumer spending in some entertainment and travel sectors](#) in the latter half of July. The [unexpected deceleration in employment growth](#) in the August jobs report likewise appears attributable to Delta-related concerns weighing on activity. There are signs that the Delta headwinds are beginning to abate, with case growth declining and airline spending perhaps beginning to recover in recent weeks (Figure 2).

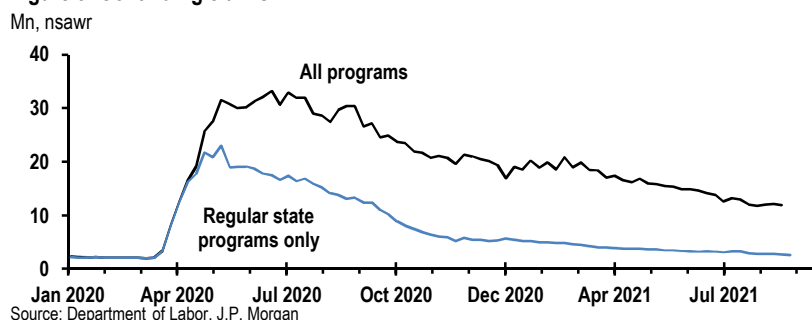
Figure 2: COVID cases and Chase card spending



Underlying chase card data can be found [here](#)

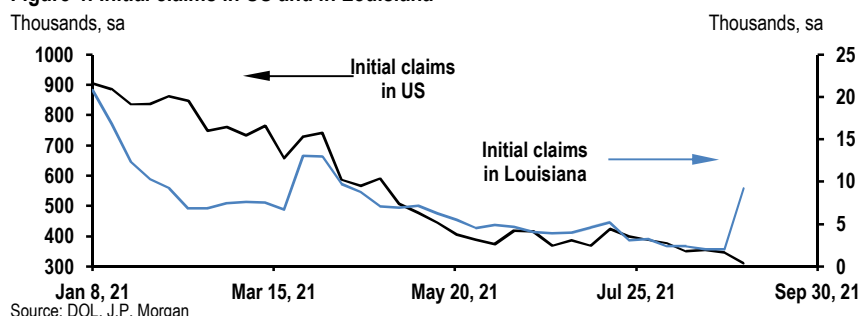
Despite the loss of momentum in employment growth in August, continuing claims for unemployment insurance in both regular and pandemic-related programs fell consistently through the month (Figure 3). We expect the broader count of continuing claims to drop sharply now that the PUA and PEUC programs have ended at the federal level, although it will be another few weeks before we see the data on filings for the period following the federal expiration. In the latest data currently available, for the week ending August 21, there were over 5mn claims filings for PUA and almost 4mn claims filings for PEUC. Given that states that ended expanded benefits early had no faster job growth in July than the rest of the country, the end of federal benefits is unlikely to affect labor market conditions through September although we will be watching related issues closely.

Figure 3: Continuing claims



While Hurricane Ida brought devastation to parts of the country, so far there are few signs that it has had an impact on the aggregate economy. Initial claims in regular state programs in Louisiana spiked for the week ending September 4. By contrast, initial claims for the entire country actually beat expectations, falling to 310,000 from 345,000 in the prior week (Figure 4). The impact of the hurricane may become material in the aggregate over time as it is likely to add some strain to already-stressed supply chains. The academic literature has documented that such severe natural disasters tend to [impose substantial losses among firms further along the supply chain](#).

Figure 4: Initial claims in US and in Louisiana

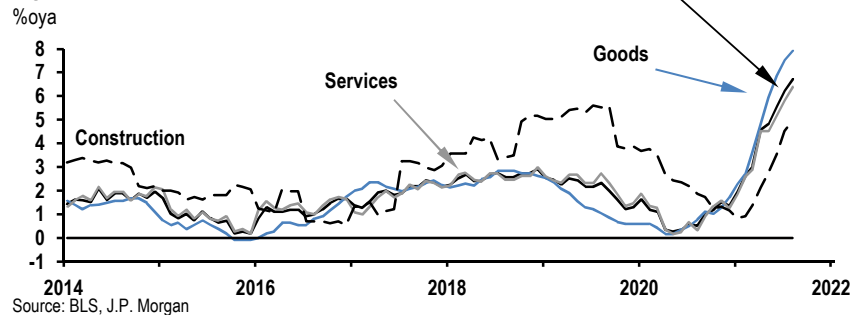


Firm PPI inflation across the board

PPI inflation was firm again in August, albeit with softness in some categories used to estimate PCE inflation. The headline producer price index (PPI) increased 0.7% in August while the core rose 0.6% away from food and energy. These gains matched our forecasts, but the headline was a tick above the consensus expectation.

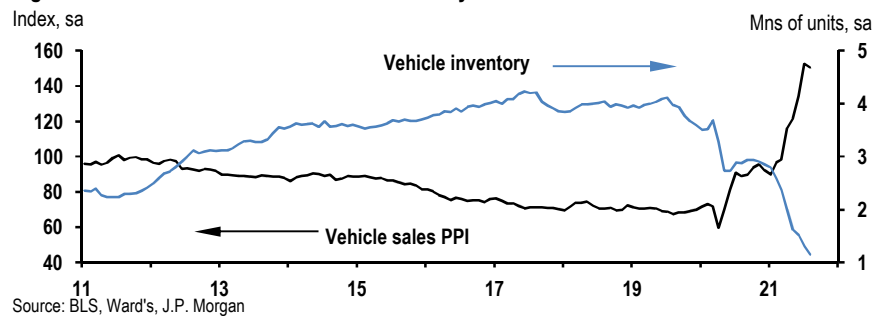
Both the headline and the core index continued to increase at solid rates through August, although the August monthly changes were somewhat softer than a few of the other recent monthly gains. With the strong recent run of price increases, the headline PPI jumped 8.3%oya in August while the core increased 6.7% (Figure 5). Our tracking estimate of the core PCE price index points to a 0.15% gain in August (3.4%oya) with next week's CPI release providing additional important information to help refine this estimate.

Figure 5: Core PPI components



In part, the softness in PCE-related components of the PPI report was due to prices for used vehicles declining somewhat in August after having surged in earlier months. This contributed to a decline in seasonally adjusted prices for vehicle sales overall despite another monthly increase in prices for new vehicles. Elsewhere, there remain signs of supply chain issues weighing on the auto sector. Auto inventories plunged further in August (Figure 6). Overall, the persistent weakness in inventories represents some downside risk to our 3Q GDP growth forecast of 7.0% saar.

Figure 6: Vehicle sales PPI and vehicle inventory



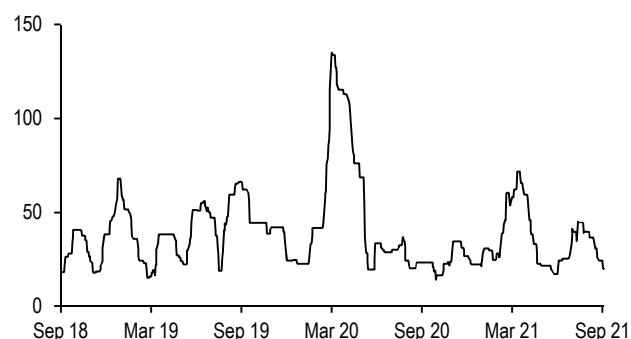
Treasuries

- **Treasuries remain firmly entrenched in the range they have held for the past two months, despite heavy Treasury and corporate supply this week. Though growth has decelerated somewhat, high-frequency data indicate the labor market continues to tighten. Moreover, with COVID cases peaking, the impact on growth should be relatively fleeting**
- **Meanwhile, the Treasury market remains priced for sub-trend growth over the next year. We recommend maintaining shorts in 10-year Treasuries. Near term, downside risks are likely to stem from domestic political debates around the debt ceiling, and upside risks from a potential hawkish outcome at the September FOMC meeting**
- **The House will not return from recess for another 10 days and Congress has a number of legislative balls in the air. Thus, it's unlikely new debt ceiling legislation is passed before late-September. The risks of a technical default remain very low, but the ramifications are far reaching, and there are early signs of stress in the T-bill market. As we approach the drop-dead date, we expect short-dated T-bills to underperform further, while risk aversion could lead long-end Treasury yields to decline**
- **The 3-year sector is cheap along the curve: initiate 146:25 weighted old 2s/old 3s/5s belly-richening butterflies**
- **Treasury released its MSPD for August, which showed P-STRIPS outstanding rose \$3.1bn over the month**
- **We estimate Treasury has approximately \$111bn in extraordinary measures available, which should last well into the second half of October. After extraordinary measures are exhausted, it could draw down on its cash balance in order to spend normally through the end of October**

Market views

Exhibit 1: Yields have been trading inside a narrow range

Rolling 40-day range volatility for 10-year Treasury yields; bp



Source: J.P. Morgan

Exhibit 2: All three mid-month auctions cleared through pre-auction levels amid above-average end-user demand

Statistics for this week's Treasury auctions; units as indicated

| | | 3s | 10s | 30s |
|---------------------|-------------|------|------|------|
| Auction tail (bp) | Sep | -0.3 | -1.3 | -2.0 |
| | Aug | -0.1 | -2.9 | 1.2 |
| | Prev 3M avg | 0.1 | -1.4 | 1.6 |
| End-user demand (%) | Sep | 75.6 | 87.7 | 86.9 |
| | Aug | 73.8 | 90.4 | 81.7 |
| | Prev 3M avg | 72.6 | 85.2 | 80.5 |
| Bid-to-cover ratio | Sep | 2.45 | 2.59 | 2.49 |
| | Aug | 2.54 | 2.65 | 2.21 |
| | Prev 3M avg | 2.47 | 2.54 | 2.23 |

Source: US Treasury, J.P. Morgan

Yields have been notably range-bound this summer and the last two weeks were no exception. **Exhibit 1** shows how the range over the last 40 trading days, roughly

20bps, is close to the lows we've seen over the last few years. This week's Treasury auctions all stopped rich relative to pre-auction levels, with 30-year bond attracting record-user demand (**Exhibit 2**). As we pointed out earlier this week (see [US Treasury Market Daily](#), 9/08/21) our most recent Treasury Client Survey is flagging that positioning has turned more bearish once again: on a net basis, 28% of the clients we survey are short, the highest since June 14. Thus, we think the strength of end-user demand could reflect short covering. On top of that, recent allotment data shows that foreign investors have been responsible for the pick-up in end user demand and while we won't get the breakdown for this week's auctions for another two weeks, that bid has likely remained part of the story, further explaining the strong auction results. On balance, 2-year yields were relatively unchanged over the past two weeks, while, 5-, 10-, and 30-year yields rose 2bp, 3bp, and 2bp, respectively.

After the lackluster August nonfarm payrolls number which has been rightfully attributed to Delta concerns, next week's CPI and retail sales data for the month of August will provide important clues as to whether the recent deterioration in confidence metrics is translating to actual individual behavior changes. The blackout period ahead of the September FOMC meeting starts tomorrow, so we won't hear back from Federal Reserve officials until Chair Powell's press conference following the meeting on September 22.

As we look forward, our core views are relatively unchanged. The deceleration in payroll growth in August does suggest some downside risk to our recently downwardly revised 7.0% real GDP forecast for 3Q21 (see [Job growth hits the skids, but u-rate keeps on falling](#), Michael Feroli, 9/3/21). However, we are encouraged that high-frequency data have not shown any further signs of deterioration: initial claims declined 35k to 310k in the week ending September 4, and are nearly 39k lower since the survey week for the August employment report, indicating the labor market continues to recovery (see [US: Regular jobless claims filings keep trending lower](#), Daniel Silver). Moreover, there is burgeoning evidence that this wave of infections is cresting, as the 7-day average of new cases has declined from a peak of 167k on September 1 to 150k as of yesterday, and the effective reproduction number has declined back toward 1 from its peak of over 1.3 in early August (see [QED: Global COVID Tracker](#), 9/10/21). **Thus, if these trends hold, any drag on activity should be short-lived, and we continue to forecast significantly above-trend growth into 2022.**

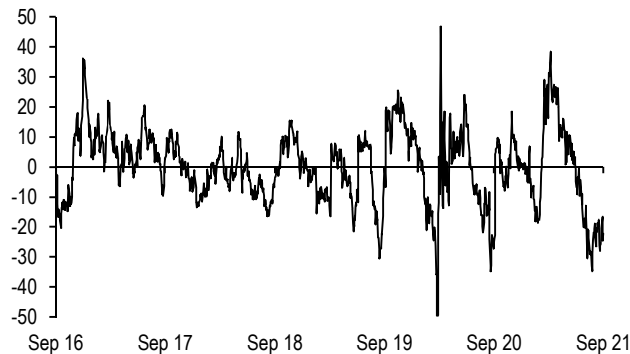
Meanwhile, the Treasury market remains decidedly priced for sub-trend growth over the coming year. **Exhibit 3** shows that 10-year Treasury yields are trading more than 20bp below their model-implied fair value. To be fair, yields tend to mean revert with relatively low frequency, but this is one of the largest gaps we have observed in recent years. Putting the pieces together, we continue to think that the spread of the Delta variant will have a more limited impact on US growth, and there are early indications that this fourth wave of infections is peaking. **Moreover, with valuations still rich we recommend maintaining shorts in 10-year Treasuries.**

The risks to this view mainly stem from political developments—as we discuss below, it does not appear Congress will fashion a debt ceiling solution over the near term, and it's likely this debate leaks into October, getting closer to the drop-dead date for a potential technical default. This could result in increased risk aversion, higher T-bill yields around the potential technical default date, and a flight-to-quality longer out the curve. However, on the flip side, we think the September FOMC meeting could present upside risks to yields. OIS forward continue to imply Fed

liftoff will occur late in 1Q23, but after that, are pricing in only 2.5 additional 25bp hikes by the end of 2024. With the latest SEP already projecting the unemployment rate below 4% and inflation above 2% in 2023, it's likely the 2024 dots project a more aggressive path of tightening when they are introduced on September 21.

Exhibit 3: Intermediate yields remain more than 20bp below their model-implied fair value

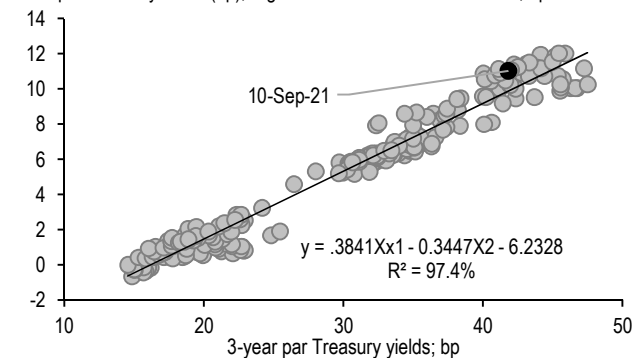
Residual of J.P. Morgan 10-year Treasury Fair-Value model*; bp



* Regression of 10-year Treasury yields on 5Yx5Y seasonally-adjusted TIPS breakevens (%), 3m3m OIS rates (%), Fed policy guidance (months), J.P. Morgan US Forecast Revision Index (%), and CFTC spec positions in interest rate futures (3y z-score). Regression from 9/10/16-9/10/21. R-squared = 97.0%, SE = 12.0bp
Source: J.P. Morgan, CFTC

Exhibit 4: The 3-year sector appears cheap along the curve, after adjusting for rate levels and curve slope

2s/3s/5s par Treasury butterfly regressed on 3-year par Treasury yields (bp) and 2s/5s par Treasury curve (bp), regression over the last 12 months; bp



Source: J.P. Morgan

Turning to relative value, we find value in the 3-year sector along the curve. Exhibit 4 shows the 2s/3s/5s butterfly appears nearly 2bp cheap after adjusting for the level of yields and the slope of the curve at the front end (**Exhibit 4**). **Thus, we recommend positioning for outperformance of the 3-year sector by initiating 146:25 weighted old 2s/old 3s/5s belly-richening butterflies (see Trade recommendations).**

The debt limit is beginning to impact the Treasury market

The August MSPD released this week showed that since the debt issuance suspension period (DISP) was declared on August 2, Treasury has used \$275bn in extraordinary measures with nearly all of this coming from the Thrift Savings Plan (**Exhibit 5**). Moreover, we estimate it has approximately \$111bn in extraordinary measures available, assuming the DISP lasts through the end of October. **Based on our forecast, we project that these measures will last well into the second half of October (Exhibit 6). At that time, Treasury could draw down its cash balance, allowing spending to continue through the end of October.**

This topic has been on the mind of market participants this week, as it does not appear that Congress is anywhere close to passing new debt limit legislation. We know Congress has many balls in the air right now: the bipartisan infrastructure package has been passed by the Senate, but the House will not take this up for a vote until later this month. Moreover, Congressional leadership continues to debate the size and scope of what will be included in the \$3.5tn budget resolution passed by the House late last month. Finally, Congress needs to pass a new continuing resolution to authorize spending for FY22 by the end of the month, or else it risks a government shutdown. Amid all this, the debt ceiling has taken a back seat, which has concerned investors that negotiations will run into October, drawing near to the drop dead date discussed above.

Exhibit 5: We think Treasury has approximately \$111bn in extraordinary measures to draw on over the next two months...

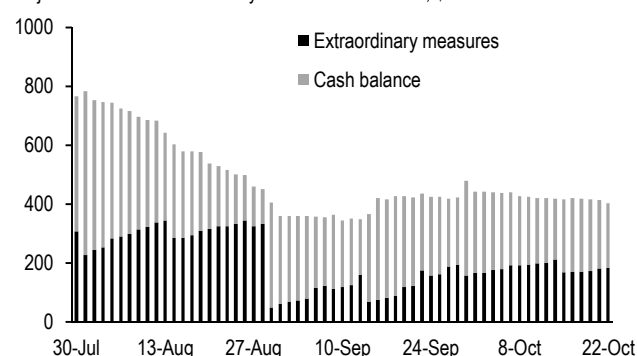
Treasury borrowing capacity under extraordinary actions; August usage vs. Sep-Oct projections; \$bn

| | Outstanding Jul 2021 | Outstanding Aug 2021 | Borrowing Headroom | |
|--------------------------------|-------------------------|-------------------------|--------------------|-------------------|
| | | | Aug '21 Used | 2021 Projected |
| TSP | 277 | 20 | 257 | 20 |
| CSRDF/PSRHHF | 946 | 928 | 18 | 63 |
| Exchange Stabilization Fund | 23 | 23 | 0 | 23 |
| Federal Financing Bank | 6 | 6 | 0 | 6 |
| Total | 1252 | 976 | 275 | 111 |

* Assumes Debt Issuance Suspension Period of 3 months: August 1 through October 31
Source: US Treasury, J.P. Morgan

Exhibit 6: ...and those are likely to last well into the second half of October, after which time it could draw down on its cash balance

Projected estimates of Treasury's available resources; \$bn



Source: US Treasury, J.P. Morgan

In an extreme scenario where Congress does not pass legislation to raise the debt limit before all of Treasury's available resources are depleted, this would result in a "technical default," where Treasury would miss a coupon or principal payment on an outstanding obligation, but where the delay is quite short-term (less than a few days) and is not viewed by the market as reflecting a real deterioration in the solvency of the US. Though such a default would be brief, the impact on financial markets and the economy could be lasting. **Given the experience of the debt ceiling debate in 2011, we think a technical default is extremely unlikely, but such an event could impact markets and the economy in a number of permanent ways.**

First, a technical default would likely negatively impact the sovereign ratings of the United States. Though S&P downgraded the US in 2011 to reflect concerns over policymaking, the other major ratings Agencies maintained their top rating, and any default, though brief, would likely result in a rating downgrade. Previous work has shown that there have been four other "grace period defaults" in recent history, and in each case, the default was accompanied by a ratings downgrade (see [The Domino Effect of a US Treasury Technical Default](#), Terry Belton, et al, 4/29/11).

Second, a technical default would likely impair demand for Treasuries. Foreign ownership has declined from its peak earlier this decade, but **Exhibit 7** shows that international investors still own nearly one-third of the Treasury market. Even if a technical default is cured immediately, foreign demand for Treasuries would likely be adversely impacted. There is already historical precedent, as Fannie Mae and Freddie Mac's move into conservatorship in 2008 has led to permanently lower foreign sponsorship for GSE debt. As a result, a technical default would likely weaken foreign demand, resulting in higher Treasury yields.

Third, it would likely have adverse implications for financing markets. The repo market plays a pivotal role in maintaining liquidity in fixed income markets, particularly the Treasury market: it allows dealers to finance long positions and source securities for setting shorts in order to perform their function as market-makers. Repo secured by Treasury collateral amounts to \$1.6tn and comprises almost 75% of the total repo market (**Exhibit 8**). A sharp repricing of Treasury collateral in response to a technical default would likely increase haircuts, potentially leading to significant margin calls, some forced deleveraging, and a decline in lending capacity.

Exhibit 7: Foreign investors own nearly a third of the Treasury market, through that share has fallen from its peak a decade ago

Ownership of Treasury securities (excluding savings bonds) by investor type, %

| Institution Type | 2010 | 2015 | 2019 | 2021 |
|----------------------|------|-------|-------|-------|
| Foreign Investors | 50% | 46.2% | 39.2% | 32.9% |
| Federal Reserve | 12% | 20.1% | 14.9% | 24.7% |
| Money market funds | 4% | 3.6% | 6.1% | 11.1% |
| Household | 10% | 6.4% | 11.3% | 7.2% |
| Money managers | 5% | 6.3% | 7.7% | 5.9% |
| Banking institutions | 3% | 4.0% | 5.2% | 5.9% |
| Pension funds | 4% | 3.6% | 4.6% | 2.3% |
| State and local govt | 5% | 4.5% | 3.9% | 4.9% |
| Others* | 2% | 1.4% | 2.0% | 1.5% |
| Insurance companies | 3% | 2.3% | 2.2% | 1.8% |
| ETFs | 1% | 0.6% | 1.4% | 1.3% |
| Broker dealers | 1% | 0.7% | 1.3% | 0.1% |
| Corporate | 1% | 0.3% | 0.3% | 0.4% |

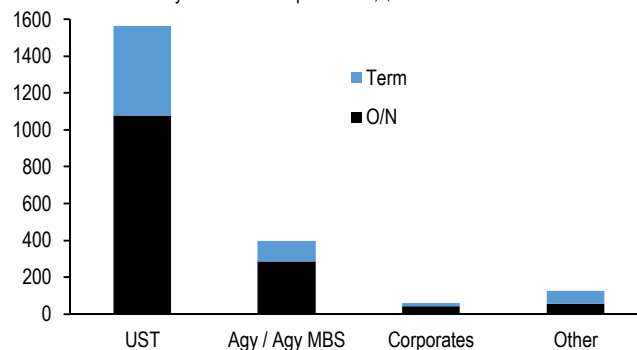
* through 6/30/2021

** Includes GSEs, issuers of ABS, and holding companies

Source: Federal Reserve Z.1

Exhibit 8: Almost 75% of all repo transactions are collateralized by US Treasury securities

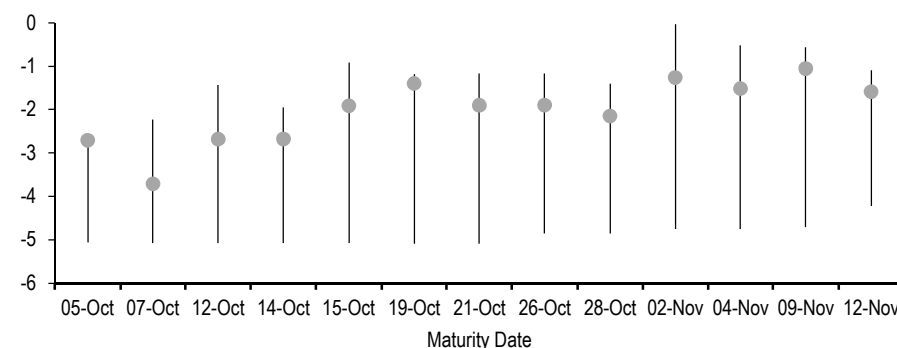
Collateral and maturity breakout of repo market; \$bn



Source: Federal Reserve Bank of New York

Exhibit 9: T-bills maturing in mid- to late-October have cheapened relative to surrounding tenors, likely reflecting debt ceiling concerns

1-month range and current matched-maturity OIS spreads on Treasury bills maturing between early-October and mid-November; bp



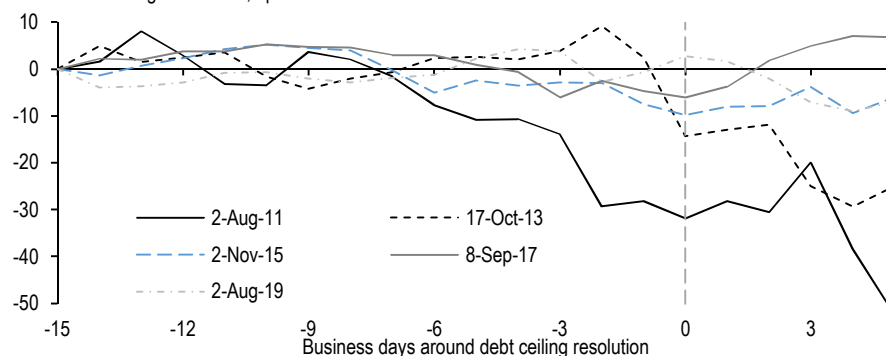
Source: J.P. Morgan

With no clear path toward debt limit resolution over the near term, we are at the point where this could begin to impact financial conditions. Already, T-bills which mature in the second half of October, around the drop dead date for a potential technical default, have begun to underperform versus surrounding issues. **Exhibit 9** shows that T-bills have broadly cheapened relative to matched-maturity OIS over the last month, but that T-bills maturing in mid-to-late October trade at a discount relative to T-bills maturing before or after this period. This likely stems from end users shying away from these securities, as the risk of a technical default, while remote, would bring with it enormous ramifications, as discussed above. If form holds, there is room for these tenors to underperform further, given the experience of previous debt ceiling episodes (see [US Treasury Market Daily](#), 5/14/21). However, given that T-bill net issuance has totaled approximately -\$950bn YTD and that the supply of high-quality shorter-maturity assets remain scarce, we would expect the moves to be muted, especially compared to the 2011 and 2013 episodes.

However, there is a risk this could impact long-term yields in coming weeks as well. Exhibit 10 shows the cumulative change in 10-year Treasury yields, adjusting for the market's Fed policy and inflation expectations, in the weeks leading up to debt ceiling resolution, using the last 5 major episodes over the past decade. The market's reaction is not consistent—we can see that Treasury yields showed a muted reaction just before new debt ceiling legislation was passed in the summer of 2017 and 2019, and this makes sense, as Congress managed to pass new legislation at least a month prior to the prospective drop dead date in either of these episodes. However, we can see that in 2011, 2013 and 2015, when debt limit negotiations came down to the wire, and new legislation was passed only days before a potential technical default, that Treasury yields declined, net of the market's Fed and inflation expectations, with 2011 being the standout example. **Thus, knowing that the House is not back in session for another 10 days, and that Congress has numerous legislative balls in the air, it's likely that these negotiations leak into late September and perhaps beyond, running the risk that this lack of action leads Treasury yields to decline as risk aversion increases.**

Exhibit 10: Treasury yields have tended to decline around more contentious debt ceiling debates, particularly 2011, 2013, and 2015

Cumulative change in 10-year Treasury yields, adjusted for Fed and inflation expectations*, in the business days around debt ceiling resolutions; bp



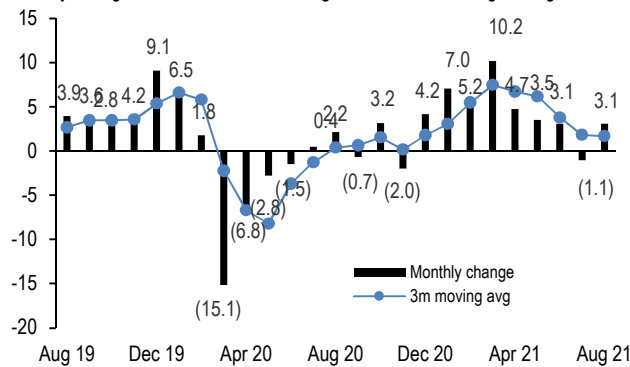
* 10-year yields regressed on 3m3m OIS rates and 5y5y TIPS breakevens over rolling 2-year period
Source: J.P. Morgan

STRIPS update

The August MSPD also showed P-STRIPS outstanding rose \$3.1bn over the month, a reversal from last month's decline and matching the pace recorded for June, though still a softer pace than we observed over the first five months of the year (Exhibit 11). Recall that pension funded ratios rose 15%-pts over 3Q20-1Q21 but have since declined as long-term yields declined decisively. Along the curve, stripping activity remained focused at the very long end, with the pace accelerating modestly from last month but remaining well below its 3-month average (Exhibit 12). **Specifically, \$1.5bn of 2.00% Aug-51s were stripped over the month, and an additional \$1.3bn of the 1.625% Nov-50s were also stripped, bringing the fraction of the bond held in stripped form to 24%.**

Exhibit 11: P-STRIPS outstanding rose \$3.1bn in August, a reversal from last month's decline

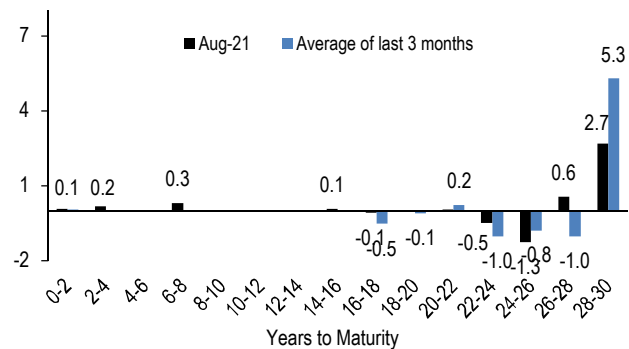
Monthly change in P-STRIPS outstanding with 3-month moving average; \$bn



Source: US Treasury

Exhibit 12: Stripping activity remained concentrated in the 28- to 30-year sector, though the pace remained below its 3-month average

Monthly change in P-STRIPS outstanding by sector in August 2021 vs. prior 3-month average; \$bn



Source: US Treasury, J.P. Morgan

Trade recommendations

- **Initiate 146:25 weighted old 2s/old 3s/5s belly richening butterfly**

The 3-year sector appears cheap along the curve.

- Sell 146% risk, or \$195mn notional of T 0.125% Jul-23s (yield: 0.193%; bpv: \$187/mn)
- Buy 100% risk, or \$86.4mn notional of T 0.375% Aug-24s (yield: 0.422%; bpv: \$290/mn)
- Sell 25% risk, or \$12.9mn notional of T 0.75% Aug-26s (yield: 0.815%; bpv: \$485/mn)
- Weighted spread is -6.3bp. One-month weighted carry is -0.8bp and roll is -0.5bp

- **Maintain 100:85 weighted 2.875% May 25s/ 2.125% May 26s steepeners**

- Stay long 100% risk, or \$64mn notional of T 2.875% May-25s
- Stay short 85% risk, or \$43.9mn notional of T 2.125% May-26s
- (*US Fixed Income Markets Weekly*, 8/20/21). P/L since inception: 0.6bp

- **Maintain 10-year duration shorts**

- Stay short 100% risk, or \$50mn notional of T 1.625% May-31s
- (*US Fixed Income Markets Weekly*, 6/11/21). P/L since inception: -19.0bp

- **Maintain 99:100 weighted 2.75% Feb-28s/3.125% Nov-28s curve flatteners**

- Stay short 99% risk, or \$60mn notional of T 2.75% Feb-28s
- Stay long 100% risk, or \$54mn notional of T 3.125% Nov-28s
- (*US Fixed Income Markets Weekly*, 6/11/21). P/L since inception: 2.4bp

- **Maintain 3s/7s steepeners**

- Stay long 100% risk, or \$175mn notional of T 0.25% Mar-24s
- Stay short 100% risk, or \$76.8mn notional of T 1.25% Mar-28s
- (*US Fixed Income Markets Weekly*, 4/9/21). P/L since inception: -29.7bp

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US Fixed Income Strategy
10 September 2021

J.P.Morgan

Closed trades in last 12 months

P/L reported in bp of yield unless otherwise indicated

| TRADE | ENTRY | EXIT | P/L |
|--|----------|-----------|------|
| Duration | | | |
| 2-year duration shorts | 2/5/2021 | 2/25/2021 | 5.1 |
| 5-year duration longs | 02/25/21 | 03/02/21 | 12.2 |
| Curve | | | |
| 5s/30s steepeners | 05/15/20 | 09/18/20 | 19.5 |
| 7s/30s steepeners | 10/30/20 | 11/04/20 | -0.4 |
| 3s/10s steepener | 11/20/21 | 01/13/21 | 25.9 |
| 3s/10s steepener | 01/28/21 | 02/17/21 | 20.4 |
| Relative value | | | |
| 1.125% Feb-31s/ 2.25% May-41s/1.25% May-50s flies | 05/21/21 | 08/20/21 | -5.8 |
| 4.75 Feb-37s/2.75 Aug-42s steepener | 07/31/20 | 08/28/20 | 3.9 |
| 7s/10s steepeners | 10/02/20 | 10/21/20 | 2.1 |
| 3 May-42/3 Nov-44s flatteners | 08/20/20 | 12/11/20 | 0.9 |
| 1.125% May-20s/ 3.125% Feb-43s steepeners | 10/15/20 | 01/14/21 | -5.3 |
| 0.125 Jan-24s/2.125 Jul-24s flatteners | 03/26/21 | 05/07/21 | 2.3 |
| 10s20s30s belly-richening fly | 01/22/21 | 05/07/21 | -5.1 |
| 99.1/100 weighted 0.625% Aug-30s/1.125% Feb-31s steepeners | 03/05/21 | 06/11/21 | -1.0 |
| Number of positive trades | | | 9 |
| Number of negative trades | | | 5 |
| Hit rate | | | 64% |
| Aggregate P/L | | | 74.7 |

Source: J.P. Morgan

Technical Analysis

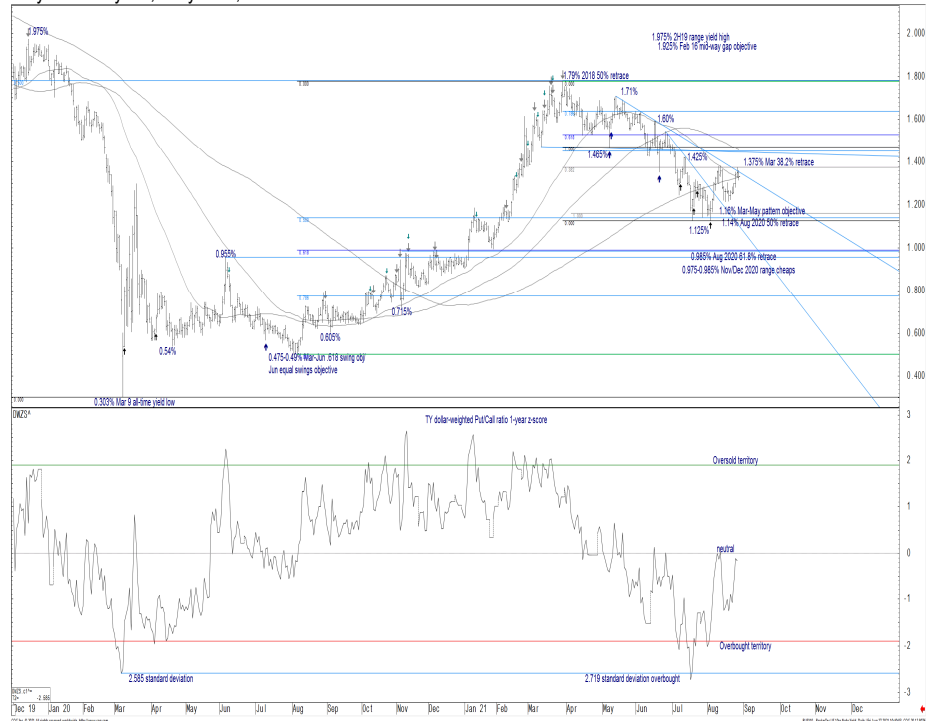
-
- **The 10-year note yield bearishly bases in front of support surrounding 1.40%. With technical conditions now neutral, we look to either improved economic data surprise index trends or trends in other cyclically sensitive market to help drive a bearish break and resumption of the longer-term bear market.**
 - **The ratio of industrial to precious metals has a longstanding correlation to global bond yields. During the COVID-19 era, industrial metals 12-month performance appears to have a stronger relationship...**
 - **...With industrial commodities showing some signs of life recently, a multivariate analysis using both of those factors as independent variables shows long duration yields 30-60bp too low.**
 - **The 5s/30s curve continues to rebase at the 108-115bp support zone. We have been looking for the curve to reverse from that area and steepen in the months ahead. Short-term resistance rests at 116bp and then 123.5bp.**
 - **10-year TIPS breakevens rebound from the 235bp 50-day MA and probes well-defined summertime range resistance near 242-245bp. Ultimately, we think breakevens can breakout through resistance and advance back toward 260bp in the months ahead. Range support sits at 220-224bp. We see a floor for the market at 200-211bp if an aggressive risk-off trend develops into the early-fall period.**
-

Yields pressure pattern support and other cyclically sensitive market action starts to bolster the bearish bond call

Little changes in chart based technicals for the Treasury market over the past two weeks, as the market retains the same range parameters and most indicators are near neutral. With the **10-year note** challenging key support parameters surrounding **1.40%** again, the yield pattern starts to look more like a bearish base pattern. Similar patterns are present in other cyclically sensitive markets, most notably WTI crude and the Energy sector in US equity markets, as well as commodity sensitive FX pairs. The bearish yield pattern unfolds after the **10-year note** rejected resistance at the **1.16%** Mar-May pattern objective and **1.14%** Aug 2020 50% retrace (**Exhibit 1**). Importantly, the 30-year bond rejected the 1.76% 2020 yield base pattern cheaps at that same time. The equivalent level for Tens sits at **0.95-1.00%**. In our view, a move through the **1.375%** Mar 38.2% retrace, **1.425%** Jul yield high, and **1.465%** Mar-May range yield low would shift medium-term trend momentum back to bearish for the first time since early-spring. With technical indicators no longer near the extremes realized in July, we look to either improved economic surprise index trends to underpin any developing bearish trend momentum, or upside breakouts in commodity markets to suggest a broader array of market participants are looking past the current lull in the data. At a minimum, we expect the market to retest the **1.79%** 2018 50% retrace and Mar yield high into the fourth quarter. We also still see the prospects for that trend to extend to the next zone of support in the **1.90s** in the months ahead.

Exhibit 1: The 10-year note yield bearishly bases in front of support surrounding 1.40%. With technical conditions now neutral, we look to either improved economic data surprise index trends or trends in other cyclically sensitive market to help drive a bearish break and resumption of the longer-term bear market...

10-year note yield, daily bars; %



Source: J.P. Morgan, CME, CQG

The renewed strength in industrial metals this week adds some confidence to our view. The Aluminum rally accelerates after the break from a multi-month consolidation pattern, Copper moves back toward the upper end of its multi-month consolidation, and the Copper/Gold ratio also recovers back toward the May-Jul cycle highs. The regression models in **Exhibit 2** and **Exhibit 3** look at long duration yields and specifically the projected Fed Funds Terminal rate in the context of the commodity price action. We use the ratio of the J.P. Morgan Industrial Metals and Precious Metals Indexes as well as the Industrial Metals Index rolling 12-month performance as independent variables. Linear regressions since Mar 2016 and Mar 2020 both show longer duration yields too low and near the lower-end of their residual ranges, roughly 60bp and 30bp respectively. Interestingly, the industrial/precious metals ratio has the more durable statistical value over a long period of time. The year-over-year growth dominates the explanatory power during the Mar 2020-current period. In fact, the Mar 2020-Mar 2021 period shows roughly equal T-stat values. It is the Mar-Jul 2021 rates slide and decoupling from the industrial/precious metals index ratio that drives the sharp change in the statistics for **Exhibit 3**. As many investors have focused on the concept of peak growth as the core of their investment thesis, perhaps divergence from the more robust driver (index ratio) denotes the market putting too much attention on the difficult comparisons that started in spring 2021. Even if that attention remains on the more difficult year ago comparisons that stay in place through the first quarter of next year, yields still look too low by that standard and bearishly base in the lower end of that residual range (**Exhibit 3**).

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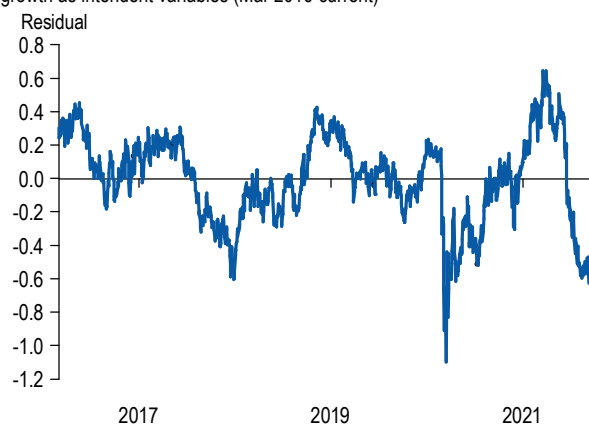
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10 September 2021

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Exhibit 2: The ratio of industrial to precious metals has a longstanding correlation to global bond yields. During the COVID-19 era, industrial metals 12-month performance appears to have a stronger relationship...

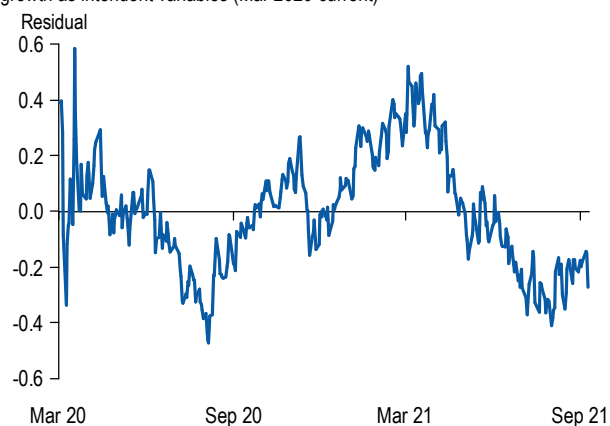
Residual of projected Fed Funds Terminal rate (Max 1m OIS rate in forwards over a ten year period) from a regression that uses the J.P. Morgan Industrial Metals/Precious Metals Index ratio and J.P. Morgan Industrial Metals Index YoY growth as intentent variables (Mar 2016-current)



Source: J.P. Morgan, CQG

Exhibit 3: ...With industrial commodities showing some signs of life recently, a multivariate analysis using both of those factors as independent variables shows long duration yields 30-60bp too low.

Residual of projected Fed Funds Terminal rate (Max 1m OIS rate in forwards over a ten year period) from a regression that uses the J.P. Morgan Industrial Metals/Precious Metals Index ratio and J.P. Morgan Industrial Metals Index YoY growth as intentent variables (Mar 2020-current)



Source: J.P. Morgan, CQG

The **5s/30s curve** continues to base at the **108-115bp** support zone. That includes the Feb-Jun range measured move objective, Aug 2019 50% retrace and Jul 2018 38.2% retrace (**Exhibit 4**). We have been looking for the curve to bottom in that area, and so far the price action remains consistent with that outlook. Tactical resistance rests at the **116bp** 50-day MA. We are still looking for the curve to steepen in a selloff. Our outlook would gain significant confidence with a break above the **123.5bp** Jun 21 pattern high. Key medium-term resistance sits at the **136-137.5bp** 200-day MA, Apr 2 low and Feb 50% retrace. On the downside, a move through **108bp** would leave the **95bp** Jul 2020 low and Aug 2019 61.8% retrace as the next meaningful support layer

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Exhibit 4: The 5s/30s curve continues to rebase at the 108-115bp support zone. We have been looking for the curve to reverse from that area and steepen in the months ahead. Short-term resistance rests at 116bp and then 123.5bp.

5s/30s curve; daily closes; bp



Source: J.P. Morgan, CQG

10-year TIPS breakevens bounce from the **235bp** 50-day MA and widen back to the upper end of the well-defined summertime range near pattern resistance at **242-243bp** earlier in the week (**Exhibit 5**). Despite multiple attempts, the market has failed to break out from the consolidation that has been unfolding since early-June. If we were to see another near-term failure at resistance, support is layered at the **227bp** Aug 20 close and the 200-day MA rising to **226bp**. Those levels are followed by the **224.5-225bp** Jun-Jul lows which mark support for the current range. As long as that area holds, we think there is a bias toward the upside into the fall, albeit one of limited amplitude. A successful breakthrough **242-243bp** pattern resistance would seek next levels layered at the **249bp** Jun 1 close and the **250.5bp** May 17 78.6% retracement. Ultimately, we think breakevens can revisit the **257bp** cycle high. Note the Jun-Aug pattern measured move objective also falls in that area, followed by the Feb-May equal swings objective at **268bp**. To the downside, secondary support is clustered in the **220-222bp** area. Parameters there include the early-Mar breakout zone and Nov 2020 38.2% retracement. In an adverse scenario where we see breakevens narrow through those levels, we would expect the **200bp/211bp** early-Nov 50% and 61.8% retracement levels, **209bp** Jun-Jul downside breakout objective, and **205bp** 1Q21 consolidation pattern low to mark a floor for breakevens into the fall. In our view, such a move would represent a good opportunity to enter a widening trade.

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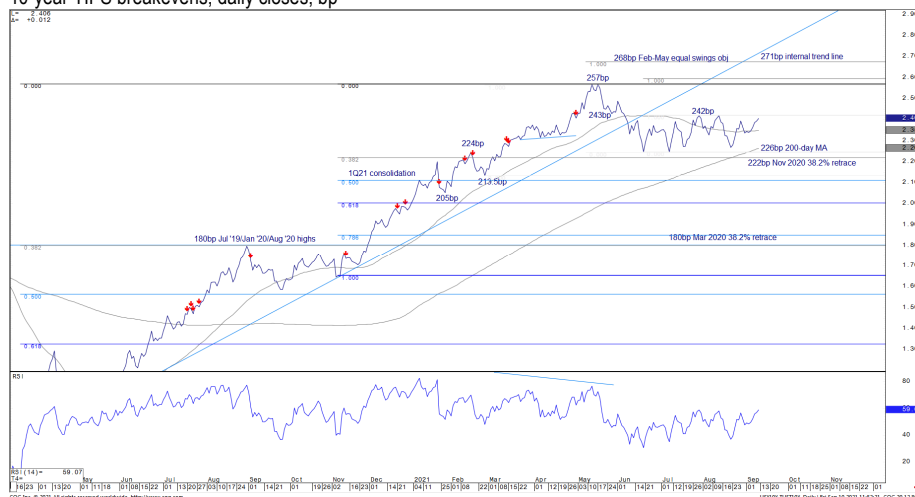
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Exhibit 5: 10-year TIPS breakevens rebound from the 235bp 50-day MA and probes well-defined summertime range resistance near 242-245bp. Ultimately, we think breakevens can breakout through resistance and advance back toward 260bp in the months ahead. Range support sits at 220-224bp. We see a floor for the market at 200-211bp if an aggressive risk-off trend develops into the early-fall period.

10-year TIPS breakevens, daily closes; bp



Source: J.P. Morgan, CQG

Technical trade strategies

- **Hold 50% 5-year note short**
 - Hold 50% short from 0.81375% (roll adjusted avg). Use a stop through 0.60% for now.
- **Hold 25% 30-year bond short**
 - Hold 25% short from 0.035%. Use a stop through 1.72%.

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| <u>Trade</u> | <u>Entry Date(s)</u> | <u>Size</u> | <u>Exit Date(s)</u> | <u>Avg Entry Price/Yld</u> | <u>Avg Exit Price/Yld</u> | <u>realized bp+carry</u> |
|-------------------------------|----------------------|-------------|---------------------|----------------------------|---------------------------|--------------------------|
| 10-year note short | 6/2/2020 | .50 | 6/8/2020 | 0.715 | 0.84 | 6.0 |
| 5s/30s curve steepener | 7/24/2020 | .50 | 8/27/2020 | 96 | 120 | 12.0 |
| 30-year bond short | 9/3/2020 | .50 | 10/15/2020 | 1.405 | 1.515 | 5.0 |
| 10-year Bund short | 6/18/2020 | .25 | 11/4/2020 | -0.46 | -0.65 | (5.0) |
| 5-year note long | 10/30/2020 | .50 | 11/9/2020 | 0.38 | 0.3475 | 1.625 |
| 10-year Gilt short | 12/9/2020 | .25 | 12/10/2020 | 0.23 | 0.17 | (1.5) |
| 10-year note short | 11/30/2020 | .25 | 12/10/2020 | 0.84 | 0.88 | 1.0 |
| Australian 10-year bond short | 11/13/2020 | .25 | 12/23/2020 | 0.885 | 0.945 | 1.5 |
| 5-year note long | 1/8/2021 | .50 | 1/27/2021 | 0.475 | 0.405 | 3.75 |
| 10-year note short | 1/27/2021 | .25 | 2/8/2021 | 1.00 | 1.17 | 4.0 |
| 5-year note long | 2/17/2021 | .50 | 2/24/2021 | 0.55 | 0.63 | (4.0) |

Source: J.P. Morgan

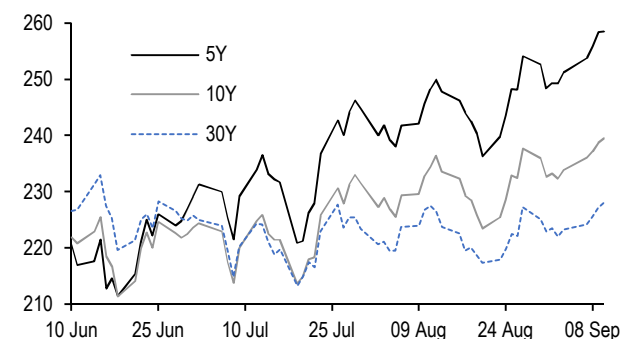
TIPS

- **TIPS at the very front end have outperformed along the curve in recent weeks, following Powell's marginally dovish Jackson Hole address, a weak August employment report, and more persistent production disruptions driven by the Delta wave**
- **Given continued labor supply constraints and bottleneck pressures, combined with evidence of lifting rent inflation, we project a relatively firm 0.31% increase in CPI-U NSA next week, above the current market fixing**
- **However, our medium-term inflation outlook has not changed, and forward breakevens out to the 5-year sector appear rich in our view, especially relative to nominal rates which imply a very benign Fed tightening path...**
- **...risks of a more hawkish September FOMC outcome and expectations for stronger job growth later this year suggest that front-end real yields should be biased higher. Thus, we stay short Apr-26 TIPS hedged with a notional-neutral long in Apr-22 TIPS**

Market views

Exhibit 1: While long-end breakevens have traded in a tight range over recent months, the front end has continued to widen...

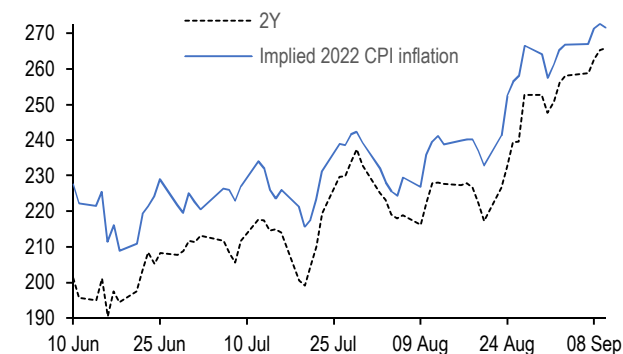
9/13/21-forward settle benchmark breakevens; bp



Source: J.P. Morgan

Exhibit 2: ...more granularly, the widening over the last three weeks has been driven by a sharp repricing of inflation expectations through 2022

9/13/21-forward settle Apr-23 TIPS breakevens versus market-implied CPI inflation over 2022; bp



Source: J.P. Morgan

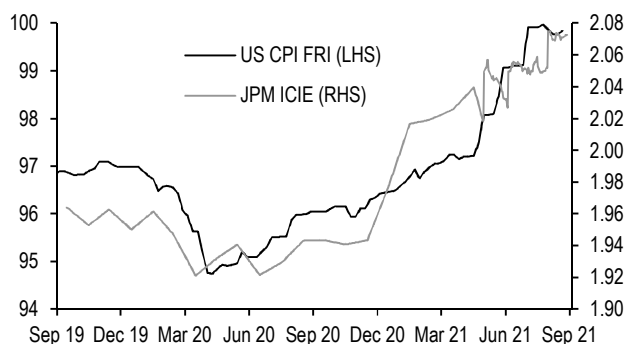
Since our last publication two weeks ago, TIPS breakevens continued modestly wider, with 5-, 10-, and 30-year breakevens widening 4bp, 2bp, and 1bp, respectively, after adjusting for carry over the period. With this move, on a carry-adjusted basis, 5-year breakevens have risen to new YTD highs, and 5-year real yields have fallen to new YTD lows. Meanwhile, the long end of the curve has remained tightly range-bound, with 30-year breakevens unchanged over the last three months (**Exhibit 1**). More granularly, the very front end of the curve has led the way higher over the last three weeks, with Apr-23 TIPS breakevens widening nearly 50bp net of carry, with the market-implied CPI inflation rate over 2022 rising by 40bp over the period to 2.72% (**Exhibit 2**). Certainly a number of factors have contributed to this repricing, and we acknowledge that inflation over the near term is likely to remain stronger than we previously expected, but these factors have not materially

changed our medium-term outlook. Five-year breakevens continue to appear rich to us, especially against the backdrop of stubbornly low nominal yields, and we remain short 5-year TIPS hedged with a notional-neutral long in Apr-22 TIPS for a number of reasons.

First, Fed Chair Powell's Jackson Hole address likely contributed to the front-end outperformance observed recently—he reminded market participants that tapering is not tightening and that with the recent strength in inflation likely to prove transitory and much ground to cover to reach maximum employment, liftoff is likely still some ways off. However, the release of the September FOMC Summary of Economic Projections later this month may send a slightly different message, as it will capture the views of the broader Committee. Recall that at the June meeting, despite little change to the median unemployment and inflation forecasts, the median interest rate forecast dot for 2023 rose to reflect two hikes, with 7 out of 18 participants expecting a hike by the end of 2022, and front-end real yields rose sharply in the aftermath of the release. If the revision to the dots largely reflected a shift in participants' assessments of uncertainty and risks around their inflation projections as Powell suggested, then there is a decent risk that the median dots move higher again next month, particularly if the August CPI report shows signs of more persistent inflation. Notably, our CPI forecast revision index and estimate of the Fed's index of common inflation expectations have continued higher since the June FOMC meeting (**Exhibit 3**). Moreover, interest rate projections will also be introduced for 2024, which are likely to show expectations of further tightening. **Thus, we think the September FOMC meeting is likely to be a near-term headwind for TIPS, particularly around the 5-year sector.**

Exhibit 3: Our CPI revision index and index of common inflation expectations have both continued higher since the June FOMC meeting

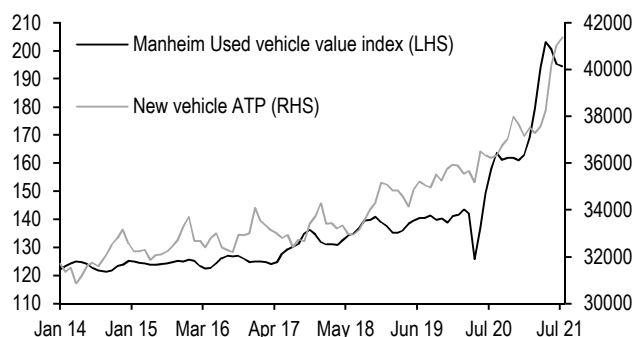
US CPI forecast revision index (LHS) versus J.P. Morgan Index of Common Inflation Expectations (%; RHS)



Source: J.P. Morgan

Exhibit 4: The decline in used vehicle prices appears to be stalling, while industry data show new vehicle prices rising at the fastest pace on record, as bottleneck pressures remain

Manheim used vehicle value index (LHS) versus new vehicle average transaction prices net of incentives (RHS, \$)



Source: Manheim, ALG, J.D. Power, J.P. Morgan

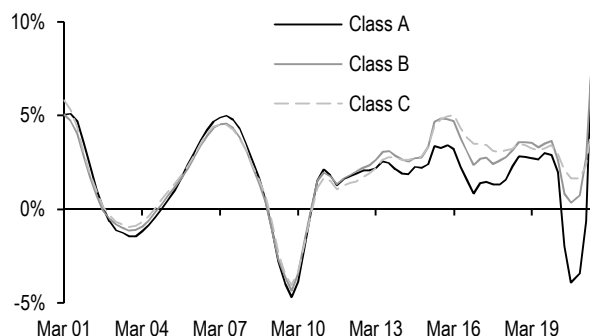
Second, the August employment report showed a sharp deceleration in job growth, with details suggesting that Delta-related concerns weighed on activity and that labor supply constraints have continued to depress job creation—likely reducing the risk of a September taper announcement while increasing the risk of continued wage pressures (see [Job growth hits the skids, but u-rate keeps on falling](#), Michael Feroli, 9/3/21). While we had expected these supply constraints to fade into the fall particularly as enhanced unemployment benefits expired, state-level data so far have shown little evidence that early ends to UI benefits have impacted employment growth (see [US: No effects of UI expiration in July labor market data](#), P. McCrory & D. Silver, 8/26/21). **Ultimately, we still expect supply constraints will fade,**

allowing wage growth to moderate, though the effects from UI expiration may be slower to take hold, especially if generous benefits have allowed households to build savings balances and remain out of the workforce for a bit longer.

Third, data have pointed to more persistent supply chain bottlenecks, as the Delta wave has generated additional production disruptions across Asia. Details of the global August manufacturing PMI showed extended delivery times, and our economists have also shown supply constraints broadening to food prices (see [Food inflation is a signal, not noise](#), N. Szentivanyi & B. Kasman, 9/7/21). Within the US CPI basket, production disruptions have altered our near-term thoughts on vehicle pricing—the Manheim used vehicle value index, which tends to lead moves in the used car CPI, has declined by 4.2% from its May peak through August, and we had previously looked for continued declines into year-end as supply began to normalize. However, the recovery in semiconductor production is now likely to be pushed further into 2022. Relatedly, industry data show Average Transaction Prices (ATPs) of new vehicle sales rose a record 13.9% y/y in August to all-time highs, as inventory levels have fallen sharply, suggesting that even if used car prices fall modestly in the August CPI report, this is likely to be offset by continued gains in new vehicle prices (Exhibit 4). **Overall, while these dynamics push up near-term inflation risks, they simply delay the timing of when easing bottleneck pressures are likely to turn into a drag on goods inflation and should still prove transitory in our view.**

Exhibit 5: Through 2Q21, rent inflation has risen most sharply for high quality properties, but it has risen to near multi-decade highs for bottom-tier properties as well

National multifamily quarterly rolling year-over-year changes in effective rent by property quality; %



Source: Costar

Exhibit 6: Recent declines in the unemployment rate and rental vacancy rate as well as increases in multifamily rent growth suggest we could see OER inflation accelerate over the near term

OER (% oya) regressed on the 3-month lagged values of U-3 unemployment rate (3m mov. avg., %), rental vacancy rate (%), and class C multifamily effective rent inflation (% oya); monthly data from Mar 2010 - Jul 2021

| Factor | Coeff. | T-stat | Last value (lagged) | Last available |
|---------------------------|--------|--------|---------------------|----------------|
| U-3 unemp. rate, 3m ma; % | -0.14 | -7.2 | 6.1 | 5.5 |
| Rental vacancy rate; % | -0.21 | -6.4 | 6.4 | 6.2 |
| Class C rent growth; % | 0.24 | 6.0 | 3.9 | 4.7 |
| Intercept | 4.42 | 13.0 | | |
| R-squared | 85.1% | | | |
| Standard Error | 0.29 | | | |

Source: BLS, Census Bureau, Costar, J.P. Morgan

Fourth, rent inflation appears to be accelerating, consistent with our expectations. As we pointed out in our [2021 Outlook](#), trends in rents were bifurcated across geographical areas and across the price spectrum, as those with the ability to work remotely left high-cost cities. While rents declined most sharply at the top end of the price spectrum, trends in OER and primary rent CPI inflation better tracked the performance of lower-tier properties, with rent inflation decelerating even as prices continued higher. Recent data from Costar show rents rebounding over the first half of 2021—though unsurprisingly the sharpest increases have been for high-quality properties, class C property rent growth has also risen to near multi-decade highs (Exhibit 5). Overall, we present our simple model of OER inflation in **Exhibit 6**: given a declining sensitivity of the index to home price appreciation since the start of the pandemic, we replace this factor with class C rent growth from Costar. Over the past decade, OER inflation has increased when labor market slack declines, rental vacancy rates fall, and class C rent growth accelerates, albeit on a lagged basis.

Given the trends in these factors, it appears that OER inflation is likely to lift toward its pre-pandemic pace over coming months. Our economists point out that some alt data on rents suggest we could get a larger jump in prices over the near term, but if that unfolds, we wouldn't expect those growth rates to persist. Notably, if COVID-19 prompts moves to areas with less constrained housing supply, longer-run rent inflation could be weaker (see [US: Rent inflation from the penthouse to the farmhouse](#), Jesse Edgerton, 8/9/21).

Overall, we think that the August CPI report released next week is likely to be relatively firm. We project a 0.31% m/m increase in core CPI, and combined with a 0.5% and 1.6% increases in food and energy CPI, respectively, we forecast a 0.42% SA increase in headline, or a 0.31% increase in CPI-U NSA to 273.840 (see *US Weekly Prospects*, Michael Feroli, 9/10/21). Our forecast is firmer than the current market fixing at 273.770, which implies roughly a 0.2% m/m sa increase in core, suggesting that the very front-end of the curve is likely to outperform if our forecast is correct. Our CPI projection implies that carry on long TIPS and breakeven positions would moderate somewhat in October but remain positive (**Exhibit 7**).

Exhibit 7: If our CPI forecast is correct, carry on long breakeven positions should moderate in October

Projected carry on long TIPS and long breakeven positions in October based on August CPI-U forecast; bp of yield

| Hot-run | Maturity | TIPS carry | BE carry |
|---------|----------|------------|----------|
| 5-year | 4/15/26 | 3.7 | 2.3 |
| 10-year | 7/15/31 | 2.4 | 1.1 |
| 30-year | 2/15/51 | 1.0 | 0.3 |

Source: J.P. Morgan

Certainly the factors discussed above imply that upcoming CPI prints beyond August are likely to remain relatively firm, supporting the recent strength in very front-end TIPS. However, stripping out near-term expectations, forward breakevens out to the 5-year sector remain rich versus fundamentals, given that bottleneck pressures are likely to prove transitory and longer-run inflation expectations remain well-anchored. Five-year TIPS appear particularly mispriced relative to an OIS curve that continues to project a very benign pace of tightening beyond 1Q23, and a relatively hawkish signal from the FOMC later this month as well as an eventual acceleration in job growth should act as catalysts for real yields to move higher in our view. **Thus, we stay short Apr-26 TIPS combined with a notional-neutral long in Apr-22 TIPS.**

Trade recommendations

- **Stay short Apr-26 TIPS versus a 14% long in Apr-22 TIPS**
 - Stay long 14% risk, or \$50mn notional of TII 0.125% Apr-22s
 - Stay short 100% risk, or \$50.1mn notional of TII 0.125% Apr-26s (*US Treasury Market Daily*, 8/19/21). P/L since inception: -5.6bp

Trade performance over the past 12 months

P/L reported in bp of yield unless otherwise indicated

| TRADE | ENTRY | EXIT | P/L |
|---|------------|------------|------|
| 5Yx5Y inflation swap longs | 7/8/2021 | 7/26/2021 | 11.0 |
| 5-year breakeven wideners | 6/11/2021 | 6/25/2021 | 8.9 |
| Short 5y TIPS versus 19% long in Apr-22s | 5/21/2021 | 6/9/2021 | 6.4 |
| Long 5y5y inflation swaps | 1/29/2021 | 4/30/2021 | 4.0 |
| Weighted Apr-23s/Apr24s BE curve steepeners | 3/5/2021 | 3/26/2021 | 5.7 |
| Weighted Apr-23s/Apr24s BE curve steepeners | 1/22/2021 | 2/8/2021 | 6.0 |
| 10-year breakeven wideners | 11/9/2020 | 12/18/2020 | 21.9 |
| 10-year breakeven wideners | 10/30/2020 | 11/4/2020 | -6.5 |
| 2% Jan-26s/0.5% Jan-28s BE curve steepeners | 7/31/2020 | 10/2/2020 | 0.7 |
| 5s/10s breakeven curve flatteners | 8/21/2020 | 9/11/2020 | 0.5 |
| AGGREGATE: | | | |
| Number of trades | 10 | | |
| Number of winners | 9 | | |
| Hit ratio | 90% | | |
| Average P/L (bp of yield) | 5.9 | | |

Source: J.P. Morgan

Interest Rate Derivatives

-
- The expected seasonal narrowing in swap spreads that typically marks the end of summer has not materialized this year, despite strong issuance ...
 - ... and with Congressional action on the debt ceiling appearing unlikely for several weeks, our expectation is that swap spreads should remain well supported as they typically have in periods of rising debt-ceiling pressures ...
 - ... we now recommend turning neutral on swap spreads and unwinding swap spread narrowers
 - The strength in the equity markets mitigates the interest rate risk in variable annuities, and relieves hedging pressures that have historically impacted long end spreads. Absent a sharp pullback in equities, long end spreads should be biased wider as longer term yields rise ...
 - ... initiate 10s/30s swap spread curve steepeners
 - The rebound in market depth has occurred sooner than in prior cycles, helping to drive short expiry implied volatility towards the lower end of the recent trading range ...
 - ... we now turn neutral on short gamma positions and recommend unwinding short 3Mx10Y swaption straddles
 - We review the recent set of Fed speak headlines and revisit our NLP-based index
-

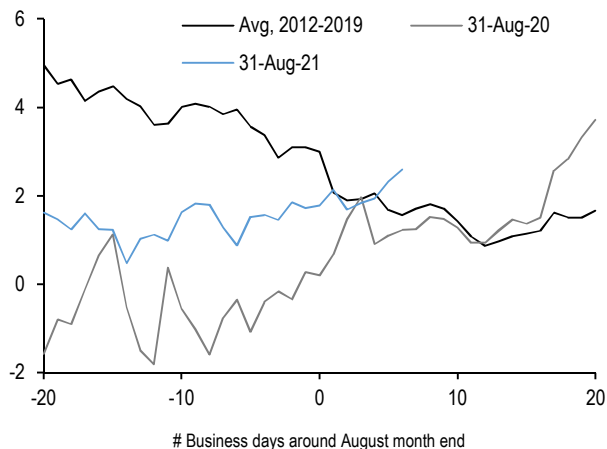
The beat goes on

In the two weeks since our previous publication, swap spreads are unchanged to modestly wider across the curve. Over this period, **maturity matched swap spreads are flat at the front end, 0.5bp wider in the intermediate maturity sector, and 1bp wider at the long end of the curve.**

The Labor Day holiday in the U.S. brings an unofficial end to summer and marks the transition of seasons. Typically, it has been accompanied by a strong seasonal narrowing in swap spreads, which had been a factor in our tactical bias towards narrower swap spreads. But this year, as in 2020, the expected seasonal narrowing in spreads has not materialized (**Exhibit 1**), despite the fact that High Grade issuance has been strong at about \$60bn, which is more than half of typical issuance in September (see [Credit Market Outlook & Strategy](#), E. Bernstein & N. Rosenbaum et al., 9/9/21). The window for this seasonal narrowing bias is thus likely now past. In addition, swap spreads are also likely to resist narrowing in the coming weeks because of the lack of an imminent resolution to the debt ceiling. With Congressional action appearing unlikely for several weeks, Treasuries will likely remain well bid (relative to other assets and swaps) in coming weeks as they typically have done in the lead up to previous debt ceiling critical dates. Only when resolution is imminent have swap spreads tended to narrow in prior episodes (**Exhibit 2**). Therefore, **we now recommend turning neutral on swap spreads and unwinding spread narrowers** (see Trade recommendations).

Exhibit 1: Seasonal spread narrowing coming into the August month end has not been as pronounced in the last two cycles as in prior years

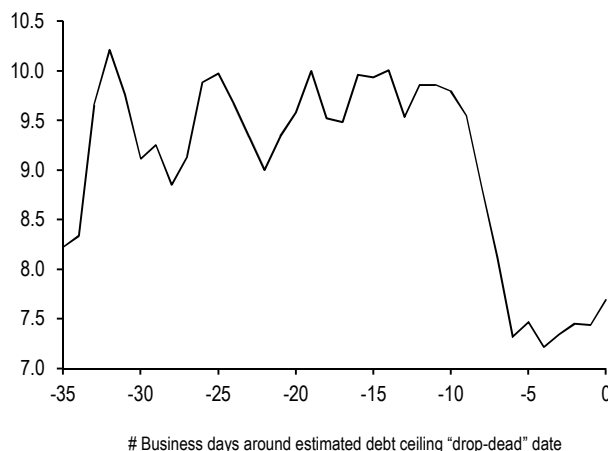
7-year matched maturity spreads around the last day of August in 2021, 2020, and averaged in the 2012-2019 cycles; bp



Source: J.P. Morgan

Exhibit 2: In the weeks leading up to critical dates* for the debt ceiling Treasuries have remained well bid relative to other assets and swaps

5-year matched maturity swap spread averaged around the estimated operative debt ceiling "drop dead" date in previous episodes; bp

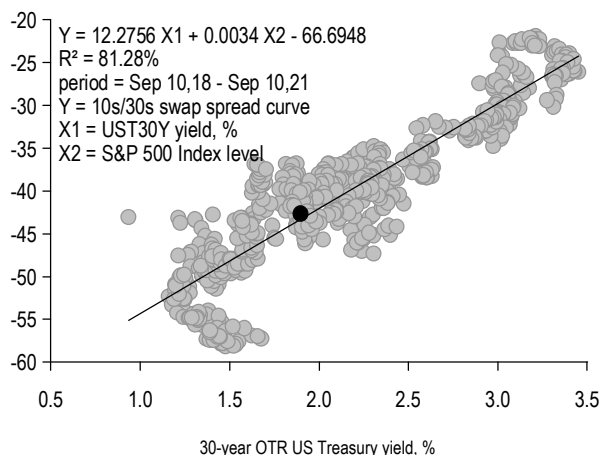


*Estimated operative "drop dead" deadlines for legislative action in previous episodes are 8/2/2011, 10/17/2013, 11/5/2015, 10/13/2017 and 10/3/2019

Source: J.P. Morgan

Exhibit 3: Adjusted for equities, the 10s/30s spread curve has been well correlated to long end yields, and should be biased steeper if yields rise as we expect

The 10s/30s maturity matched swap spread curve adjusted for the S&P500 index* (y-axis; bp), versus 30-year Treasury yields (x-axis, %)

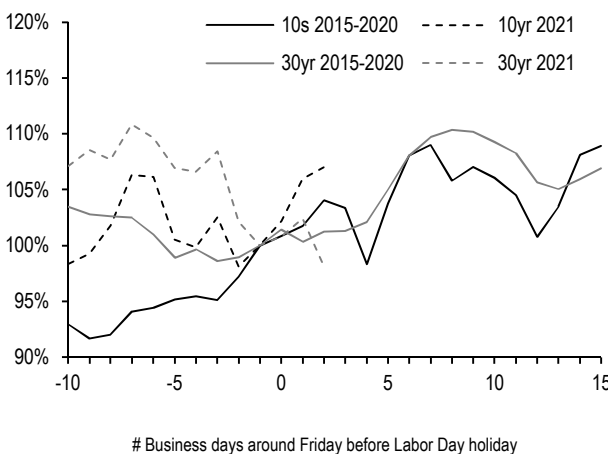


Calculated as 30-year swap spread minus 10-year swap spread, minus 0.0034 SPX.

Source: J.P. Morgan

Exhibit 4: Market depth for 10-year and 30-year Treasuries has been steadily increasing from summer lows, a recovery that is earlier than the pace we have seen over the last few years

Weekly moving average of total market depth in 10-year and 30-year hot-run Treasuries, over 2015-2020 and the current cycle, relative to the Friday before the Labor Day holiday in the US; %



Source: J.P. Morgan, BrokerTec

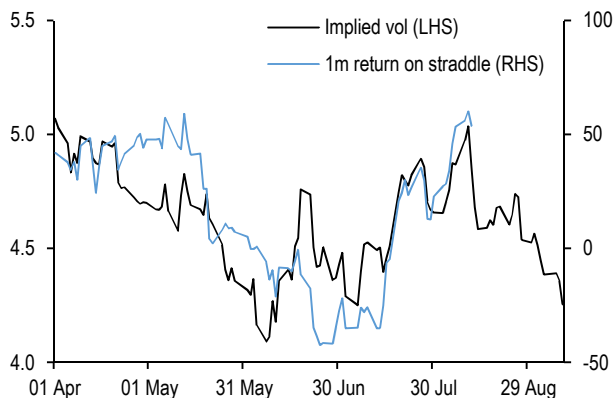
On the spread curve, we now recommend positioning for a steeper 10s/30s maturity matched swap spread curve. The strength in the equity markets mitigates the interest rate risk in variable annuities, and relieves the insurance company receiving pressures that have historically impacted long end spreads (**Exhibit 3**). In addition, the spread curve is positively correlated to long end yields. Although the spread curve appears fair adjusted for yields and equities, given our bias towards higher yields in the medium term end (see [US Government Bond Strategy](#), J. Barry & P. White et al., 8/6/21) as well as our expectation of stable/strong equity markets (see

[US Equity Strategy](#), D. Lakos-Bujas et al., 7/20/21), we now recommend positioning for a widening in 30-year swap spreads relative to 10-year maturity matched swap spreads (see Trade recommendations). Carry on this trade is net flat over a 3-month horizon.

In terms of overall liquidity in markets and volatility, the rebound in market depth has occurred sooner than in prior cycles. Typically, market depth reaches its trough right before Labor Day, and rebounds soon after. This year, the rebound began in the second half of August, and has likely now run its course (**Exhibit 4**). In part due to this seasonally unexpected strength in market liquidity, short gamma positions have performed well and short-expiry implied volatility has declined sharply. Over the past two weeks, 3-month expiry swaption implied volatility on 10- and 30-year tails has fallen 0.3bp/day. This decline has now caused short-expiry implieds to fall to near their six month lows. Moreover, the trailing 1M delta hedged return on short gamma positions has tended to be (unsurprisingly) strongly correlated to the implied vol at inception (**Exhibit 5**), and this relationship suggests that such short gamma positions are no longer attractive at current implied volatility levels. **Therefore, we turn neutral on the short expiry sector and recommend unwinding short 3Mx10Y swaption straddles (see Trade recommendations).**

Exhibit 5: Implied volatility for 3Mx10Y has fallen over the last two weeks, and is now at levels where short gamma positions are unlikely to prove attractive

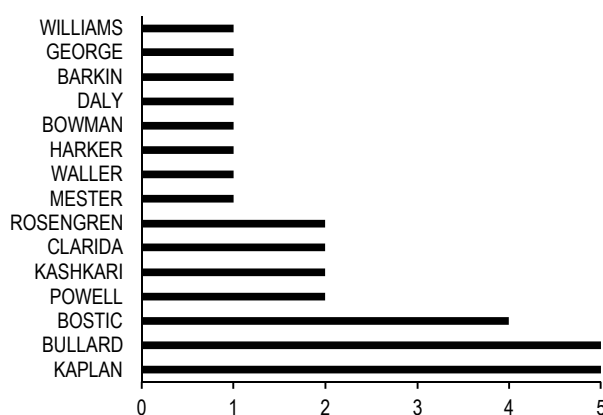
Implied volatility for 3Mx10Y (LHS, bp/day), and the forward-looking rolling 1m delta-hedged return* on a short 3Mx10Y straddle (RHS, bp of notional);



* Assumes short 3Mx10Y straddle initiated at each day's close, and delta hedged every day for the next month. Ignores transaction costs Source: J.P. Morgan

Exhibit 6: This month, numerous Fed speakers stepped up to the microphone, with 15 of 18 FOMC members having headlines captured by our model, and about half speaking on multiple dates

Number of dates in the last month when each speaker has at least one headline attributed to their name; unit



Source: J.P. Morgan, Bloomberg Finance L.L.P.

NLP-based Fed Speak update

Jackson Hole brought us a whole suite of new Fed headlines, making a revisit of our recently launched Fed Speak index timely (see [Also sprach the Fed](#), V. Mejia Bustamante & J. Barry et al., 7/16/21). In fact, over the last month we have captured headlines by 15 of the 18 FOMC members, and about half of them have publically spoken on more than one date (**Exhibit 6**). In addition, since our last review of the index we have seen an update on the relative hawkish-dovish stand of the current FOMC members from our colleagues in economic research (see [U.S. Will Fed Heads Roll?](#) M. Feroli 7/21/21), so we incorporate the changes in speaker perception for this round of statements. From our earlier view in 1H 2021, only three speakers have changed perceived tendency, with Evans moving from neutral to dove, Rosengren moving from dove to neutral, and most notably, Bullard switching from dove to hawk (**Exhibit 7**).

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Exhibit 9: The statements on August 27th were associated with the largest absolute moves in yield in the last month, with the token taper appearing in three out of eight

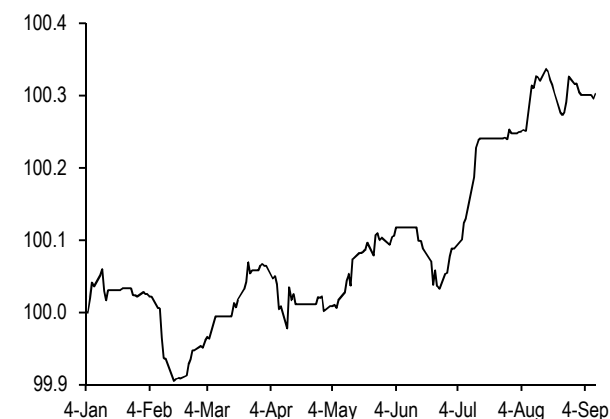
Headlines from speeches made by FOMC members in the last month that were associated with the largest move in 10-year Treasury yield five minutes after publication

| | Date | Speaker | Headline |
|------------|--------|----------|--|
| Yield Up | 4-Aug | CLARIDA | ECONOMIC IMBALANCES LIKELY TO DISSIPATE OVER TIME |
| | 27-Aug | BULLARD | REPEATS HE WANTS TAPER NOW, FIRST-QUARTER 2022 FINISH |
| | 4-Aug | CLARIDA | COULD SEE MAKING TAPER ANNOUNCEMENT LATER THIS YEAR |
| | 27-Aug | MESTER | SAYS 'BASICALLY THERE' WITH SUBSTANTIAL FURTHER PROGRESS |
| Yield Down | 27-Aug | POWELL | SAYS COULD BE APPROPRIATE TO BEGIN TAPERING THIS YEAR |
| | 8-Sep | WILLIAMS | LONG TERM INFLATION EXPECTATIONS CONSISTENT WITH GOAL |
| | 27-Aug | KAPLAN | WANTS ASSET-PURCHASE ADJUSTMENTS STARTING SOON |
| | 9-Aug | BOSTIC | NEED TO ENSURE BEYOND CRISIS BEFORE RATE HIKES |
| | | | |

Source: J.P. Morgan, Bloomberg Finance L.L.P., BrokerTec

Exhibit 10: Year to date the sentiment index produced by the model has been increasingly hawkish

Index, built from rolling 3-month difference of inferred probability that each headline moves the market up vs down; unitless



Source: J.P. Morgan

Trading recommendations

- **Position for a steeper 10s/30s maturity matched swap spread curve**
Barring a hiccup in equities, the 10s/30s swap spread curve should steepen as long end yields rise over the medium term.
 - Sell \$100mn of the 1.625% May 2031 (yield 1.320%, pvbp \$919/bp per mn notional) and receive fixed in \$99.2mn notional of a 5/15/2031 3mL swap (fixed coupon of 1.348%, pvbp \$926.7/bp) at a maturity matched swap spread of 2.8bp; buy \$41.5mn of the 1.875% Feb 51s (yield 1.940%, pvbp \$2214/bp) and pay fixed in \$37.8mn of a 15-feb-2051 swap (pvbp \$2243/bp, coupon 1.680%) for an all in spread curve of -28.8bp.
- **Unwind short 3Mx10Y delta-neutral straddles**
 - Unwind short \$100mn notional 3Mx10Y ATMF straddles (notification 11/19/21, maturity 11/23/31, ATMF strike @ 1.319%, premium 282c); this trade requires daily delta hedging (Fixed Income Markets Weekly 8/20/21, P/L since inception 9abp).
- **Unwind short 30s versus 20s on ASW**
 - Unwind \$100mn 30-year hot run Treasuries (1 5/8% Nov-50) versus receiving \$88mn fixed in maturity matched OIS, and buy \$135mn 20-year hot-run Treasuries (1 3/8% Nov-40) versus paying fixed in \$123mn maturity matched OIS, at a spread of 11.9bp (Fixed Income Markets Weekly 1/8/21, P/L since inception: -5.4bp).
- **Stay received 7-year maturity SOFR spreads**
 - Stay short \$100m notional of 1% Jul 2028 vs receiving \$98.3m notional 07/31/2028 swap @ a maturity matched SOFR spread of -22.5bp (Fixed Income Markets Weekly 8/20/21, P/L since inception -1.7bp).
- **Stay long 1Yx2Y 1s/3s basis**
 - Stay long \$250k per bp of 1Yx2Y 1s/3s basis at @ 9.1 bp (Fixed Income Markets Weekly 8/20/21, P/L since inception -0.1bp).

- **Stay short FFG2**
 - Stay short 10k contracts of FFG2 @ 99.915 (Fixed Income Markets Weekly 8/6/21, P/L since inception -0.5bp).
- **Stay short EDZ1**
 - Stay short 4000 contracts of EDZ1 at 99.81 (Fixed Income Markets Weekly 6/18/21, P/L since inception -2.0bp).
- **Stay received 6Mx1Y JPY/USD cross-currency basis**
 - Stay received \$100k/bp of 6Mx1Y JPY/USD cross-currency basis (swap start 9/25/2021, swap end 9/26/2022) @ a spread of -30.3bp (Fixed Income Markets Weekly 3/26/21, P/L since inception -12.6bp).
- **Stay long 35Yx5Y vs 25Yx5Y swap curve steepeners**
 - Stay paid \$312mn 35Yx5Y (swap start: 1/11/2056, swap end: 1/11/2061, coupon: 1.26%) versus receiving \$250mn of 25Yx5Y (swap start: 1/11/2046, swap end: 1/11/2051, coupon: 1.80%) at a spread of 52.5bp. Carry and slide on this trade is 3.2bp over 1-year (Fixed Income Markets Weekly 1/8/21, P/L since inception: -4.3bp).
- **Stay long 2Yx3Y 6s/FF-OIS**
 - Stay long 100k/bp 2Yx3Y (swap start: 10/27/22, swap end: 10/27/25) 3s/6s basis vs 100k/bp 2Yx3Y FF/Libor basis, at +38.6bp (Fixed Income Markets Weekly 10/23/20, P/L since inception: -6.3bp).
- **Stay long 2Yx1Y 1s/3s basis**
 - Stay long \$100k/bp 2Yx1Y 1s/3s basis at 10.75bp (swap start: 9/17/2021, swap end: 9/17/2022) (Fallback to earth 9/16/19). (Fixed Income Markets Weekly 9/16/19, P/L since inception: -6.5bp).

Closed trades over the past 12 months

P/L reported in bp of yield for swap spread, yield curve and misc. trades, and in annualized bp of volatility for option trades, unless otherwise specified

| Trade | Entry | Exit | P/L |
|---|-----------|----------|------|
| Spreads and basis | | | |
| Pay 2Yx1Y versus 10Yx10Y Libor/SOFR | 06/24/20 | 09/25/20 | 8.4 |
| Buy 10Y SOFR/FF basis | 02/07/20 | 10/20/20 | 0.5 |
| Buy 5Yx5Y 1s/3s basis | 04/20/20 | 10/13/20 | 6.2 |
| Receive maturity-matched 10-year swap spreads | 03/27/20 | 11/6/20 | -9.2 |
| Sell 2s versus matched SOFR | 04/24/20 | 11/6/20 | -8.5 |
| Receive 6M CHF/USD cross currency basis | 08/28/20 | 11/24/20 | 6.6 |
| Sell May-37/USZ0 Treasury futures basis | 10/30/20 | 11/24/20 | 7 |
| Buy 2Yx1Y vs 5Yx5Y 3s/6s tenor basis | 05/01/20 | 12/01/20 | 1.6 |
| Pay 10Yx10Y AUD/USD cross currency basis | 01/24/20 | 12/18/20 | -5.1 |
| Received 1Yx1Y CAD vs USD IRS | 9/25/2020 | 01/22/21 | 5.5 |
| Sell current 2s versus double old 7s versus matched-maturity SOFR | 01/08/21 | 02/18/21 | 2.2 |
| Pay 5Y CAD/USD cross currency basis | 01/20/21 | 02/26/21 | 6.4 |
| Sell 2s versus matched Libor swaps | 02/19/21 | 06/04/21 | 3.2 |
| Stay long 20-year matched maturity swap spreads | 4/23/21 | 7/30/21 | -2.1 |

Source: J.P. Morgan

Closed trades over the past 12 months (continued)

P/L reported in bp of yield for swap spread, yield curve and misc. trades, and in annualized bp of volatility for option trades, unless otherwise specified

| Duration and curve | Entry | Exit | P/L |
|--|----------|----------|------------|
| Sell EDZ0 | 11/10/20 | 12/18/20 | -2.1 |
| Short 30s versus 20s on ASW | 1/8/21 | 9/10/21 | -5.4 |
| Options relative value | Entry | Exit | P/L |
| Sell 2Yx30Y vs 5Yx30Y ATMF vega-neutral straddles | 6/5/20 | 3/5/21 | 3.0 |
| Buy the outstrikes of a 3Mx5Y 1x2 receiver spread | 3/26/21 | 6/30/21 | -5.8 |
| Stay long 10Yx10Y USD vs EUR ATMF vega-neutral straddles | 6/4/21 | 8/6/21 | 1.4 |
| Stay long 10Yx30Y vs 3Yx10Y ATMF vega-neutral straddles | 6/4/21 | 8/6/21 | 1.7 |
| Stay long USD vs AUD 1Yx5Y ATMF straddles | 6/11/21 | 8/6/21 | 3.4 |
| Short 3Mx10Y delta-neutral straddles | 8/20/21 | 9/10/21 | 9 |
| Total number of trades | | | 22 |
| Number of winners | | | 15 |
| Hit rate | | | 68% |

Source: J.P. Morgan

Note: new trades and unwinds reflect Friday COB levels unless otherwise stated and all others reflect Thursday COB levels

| Recent Weeklies | |
|-----------------|---|
| 27-Aug-21 | Weekly: Gauging the risks around year-end |
| 20-Aug-21 | Weekly: Summer will end soon enough |
| 6-Aug-21 | Weekly: Hedging the return of term premium |
| 30-Jul-21 | Weekly: Stand by me |
| 16-Jul-21 | Weekly: Pay no attention to that convexity behind the curtain |
| 9-Jul-21 | Weekly: This could be the start of something big...? |
| 25-Jun-21 | Weekly: Just keep swimming |
| 18-Jun-21 | Weekly: All good things |
| 11-Jun-21 | Weekly: Rolling lockdowns coastal fever |
| 4-Jun-21 | Weekly: Keep calm and stay long |
| 21-May-21 | Weekly: Load-bearing wall |
| 14-May-21 | Weekly: Arpeggi |
| 7-May-21 | Weekly: Look BSBY |
| 30-Apr-21 | Weekly: Canadian split |
| 23-Apr-21 | Weekly: Where is bank issuance-related receiving headed? |
| 16-Apr-21 | Weekly: Revisiting demographic duration demand |
| 9-Apr-21 | Weekly: The more the merrier |
| 26-Mar-21 | Weekly: An orderly process |
| 19-Mar-21 | Weekly: Ask again later |
| 12-Mar-21 | Weekly: Spread focus turns squarely to SLR |
| 5-Mar-21 | Weekly: Vol-au-vent |
| 26-Feb-21 | Weekly: ㄟ(ˆ_ˆ)ㄟ |
| 19-Feb-21 | Weekly: Troll 2s |
| 05-Feb-21 | Weekly: Buy in case of reflation |
| 29-Jan-21 | Weekly: Check for seasoning |
| 22-Jan-21 | Weekly: Maple syrup event |
| 8-Jan-21 | Weekly: A trek across the spread curve |
| 18-Dec-20 | Weekly: T-bill demand may be more elastic than you think |

| | |
|------------------------------------|--|
| 11-Dec-20 | Weekly: The once and future turn |
| 13-Nov-20 | Weekly: Looking ahead to year-end and the Z0/H1 futures roll |
| 6-Nov-20 | Weekly: The long view |
| 30-Oct-20 | Weekly: An Election Day survival guide |
| 23-Oct-20 | Weekly: Back to the fallbacks |
| 16-Oct-20 | Weekly: Somebody's got a case of the Mondays |
| 2-Oct-20 | Weekly: Considering long-end spreads |
| 25-Sep-20 | Weekly: Canadian Bacon |
| 18-Sep-20 | Weekly: The Big Bang gets going |
| 11-Sep-20 | Weekly: Vega supply outlook and reviewing the U0/Z0 Treasury futures roll: |
| Annual Outlooks | |
| 24-Nov-20 | Interest Rate Derivatives 2021 Outlook: This is fine |
| Recent Special Topic Pieces | |
| 13-Aug-21 | US Treasury Futures Rollover Outlook: September 2021/December 2021 |
| 6-Aug-21 | The medium-term outlook for Fed funds |
| 5-Aug-21 | Minimally invasive retail CBDCs |
| 3-Aug-21 | Combating the unique threat posed by ransomware |
| 22-Jul-21 | The financial stability risks of stablecoins |
| 16-Jul-21 | Also sprach the Fed |
| 9-Jul-21 | Many worlds: A Monte Carlo approach to benchmarking the long-run diversification benefits of bonds |
| 8-Jul-21 | The Bitcoinization of El Salvador |
| 30-Jun-21 | Incorporating ESG into automated fixed income portfolios |
| 18-Jun-21 | You tell me that it's evolution |
| 11-Jun-21 | Crypto capital rules arrive |
| 11-Jun-21 | The bitcoinization of El Salvador |
| 28-May-21 | Cross-margining and financial stability |
| 24-May-21 | Dissecting the crypto crash |
| 18-May-21 | US Treasury Futures Rollover Outlook: June 2021/September 2021 |
| 29-Apr-21 | BoC tapering and CAD cross currency basis |
| 27-Apr-21 | Benchmarking duration demand from target-date funds |
| 27-Apr-21 | Why is ETH outperforming? |
| 21-Apr-21 | Tubthumping |
| 16-Apr-21 | End of the waterfall |
| 16-Apr-21 | Revisiting demographic duration demand in the long end |
| 09-Apr-21 | Why is the Bitcoin futures curve so steep? |
| 09-Apr-21 | How inelastic is bitcoin mining? |
| 31-Mar-21 | Can SOFR trade well through RRP? |
| 24-Mar-21 | The rising tide: balance sheet cost, foreign private demand, and the FX basis |
| 15-Mar-21 | What are the FX swap implications of SLR carve outs? |
| 11-Mar-21 | Still Waiting on SLR |
| 02-Mar-21 | Reflation: The cause of and solution to AUD basis problems |
| 24-Feb-21 | Where has thou been, then, Libor |
| 23-Feb-21 | Four o'clock tick tock |
| 17-Feb-21 | Taper Tantrum, Part Deux |
| 16-Feb-21 | US Treasury Futures Rollover Outlook |
| 16-Feb-21 | A mortgage extends in a forest |
| 04-Feb-21 | How important are bank-level SLR carve-outs to swap spreads? |
| 29-Jan-21 | Trust exercises |
| 25-Jan-21 | Only as strong as the foundation |

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US Fixed Income Strategy
10 September 2021

J.P.Morgan

| | |
|-----------|--|
| 20-Jan-21 | CAD/USD cross currency basis in 1H21 |
| 14-Jan-21 | When you come to a fork in the road |
| 08-Jan-21 | Pricing more fiscal stimulus into swap spreads |
| 04-Dec-20 | 3Q20 GSIB filings continue to show steady top-line pressure |
| 01-Dec-20 | Moving the goalposts: The implications of pushing back USD Libor cessation |
| 24-Nov-20 | Interest rate derivatives in the time of SOFR |
| 17-Nov-20 | When prophecy fails |
| 13-Nov-20 | US Treasury Futures Rollover Outlook: December 2020/March 2021 |
| 10-Nov-20 | Beware the funding pressures of a post-Election rally |
| 29-Oct-20 | The Cannonball Run |
| 23-Oct-20 | What about the Senate? |
| 20-Oct-20 | Turn and face the strange: First thoughts on the Big Bang |
| 8-Oct-20 | Revisiting the risk of contested or delayed results as polls widen and event risk decays |
| 23-Sep-20 | Volatility risk and the U.S. Presidential election: Volfefe, revisited |
| 21-Sep-20 | 2Q20 GSIB update: Flat topline but durable pressure from size and STWF point to further increases into year-end |
| 17-Sep-20 | New restrictions on Shin Kong are bullish for USD vega |
| 16-Sep-20 | A volatile week for year-end turn pricing: Recent developments a narrower at the margin, but don't lose the forest for the trees |
| 15-Sep-20 | It all started with a Big Bang: Updating discounting risk estimates and reviewing mechanics |

Source: J.P. Morgan

Short-Term Fixed Income

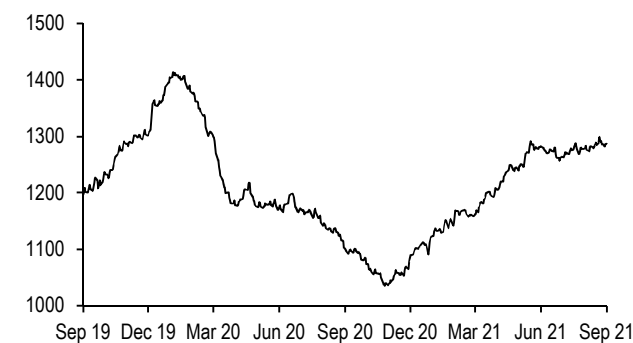
- **Bank CP/CD outstandings have grown by \$178bn YTD. This is somewhat surprising in the context of a banking system that has been flush with liquidity**
- **We think the rise in outstandings might be driven by opportunistic funding and the attractiveness of the USD CP/CD markets relative to where some banks could get funded in their home currencies**
- **However, we do not anticipate supply to meaningfully grow the rest of this year. Loan growth remains anemic and the typical year-end funding pressures that usually drive supply higher in October/November should also be more muted**
- **Corporates have shifted more of their cash investment portfolios into marketable securities versus deposits/MMFs. As of 2Q21, the amount of marketable securities held by corporates registered 40%, an increase from 37% a year ago, even as their cash balances remained at roughly \$2.2tn**
- **We believe money will continue to shift out the curve, particularly as banks look to shed deposits, MMFs struggle with lack of supply and low yields, and MMF reforms are impending**
- **If so, front-end spreads could remain tight for quite some time**

A look at bank CP/CD outstandings

With rates in the money markets trading in a very narrow range, we turn to bank CP/CD outstandings this week. Based on DTCC data, we estimate that net CP/CD issuance across domestic and foreign banks has grown by \$178bn YTD and \$186bn YoY (**Exhibit 1**). This is somewhat surprising in the context of a banking system that has been flushed with liquidity. Indeed, excess deposits (total deposits minus loans) at large US banks and foreign-related institutions in the US—both of which are primary participants in the CP/CD markets—have increased quite substantially since the depths of the crisis in March 2020 (**Exhibit 2**).

Exhibit 1: Bank CP/CD outstandings have grown by \$178bn YTD...

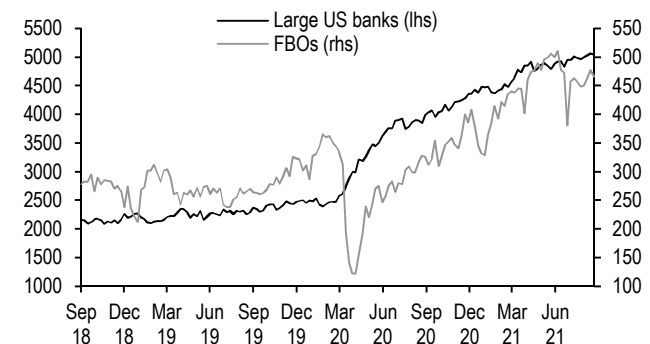
Bank CP/CD outstandings (\$bn)



Source: DTCC, J.P. Morgan

Exhibit 2: ...even as excess deposits have grown substantially

Excess deposits of large US banks and FBOs (\$bn)



Source: Federal Reserve

More notably, the growth in outstandings has been fairly broad-based across jurisdictions. By domicile, European banks drove most of this growth, with Eurozone and other European banks contributing \$83bn and \$50bn, respectively to the change YTD (**Exhibit 3**). Outstandings of Japanese banks and Australian banks each grew \$23bn YTD, followed by Canadian banks of \$10bn.

Exhibit 3: The rise in bank CP/CD outstandingd has been fairly broad-based across jurisdictions
Bank CP/CD outstandings by domicile

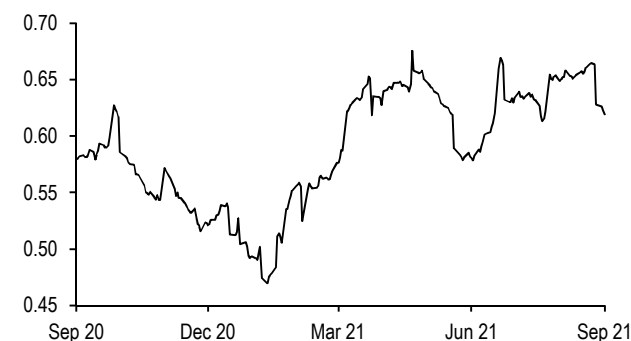
| | Current (\$bn) | YTD (\$bn) | YOY (\$bn) | YTD (%) | YOY (%) |
|------------------------------|----------------|------------|------------|------------|------------|
| Total Bank CP/CD Outs | 1287 | 178 | 186 | 16% | 17% |
| <i>Eurozone</i> | 269 | 83 | 71 | 45% | 36% |
| <i>Other European</i> | 275 | 50 | 12 | 22% | 4% |
| <i>Japanese</i> | 233 | 23 | 6 | 11% | 3% |
| <i>Australian</i> | 105 | 23 | 37 | 28% | 54% |
| <i>Canadian</i> | 281 | 10 | 60 | 4% | 27% |
| <i>US</i> | 43 | -6 | -5 | -12% | -10% |
| <i>Other</i> | 81 | -6 | 5 | -7% | 6% |

Source: Bloomberg, J.P. Morgan

Naturally, this begs the question: why are CP/CD outstandings increasing when banks have more liquidity than they need? A closer look at issuance tenors over the past several months suggests that some of the growth could have been more opportunistic in nature. This is evident in the amount of overnight volumes that have been issued throughout this year: as a percentage of daily issuance, overnights currently make up 62% of total volumes, an increase from 47% earlier this year (**Exhibit 4**). By issuing overnights, not only are banks able to better match investors' preference for shorter maturities given the flatness of the yield curve, but they can also economically take advantage of the spread between overnight borrowing costs and IOER. On the margin, to the degree banks issue in USD and swap the proceeds raised in the money markets back to local currencies, the liquidity available in the USD CP/CD markets and the low yields available could also be relatively more attractive than borrowing in the home local markets.

Exhibit 4: The amount of overnight CP/CD volumes has grown markedly this year

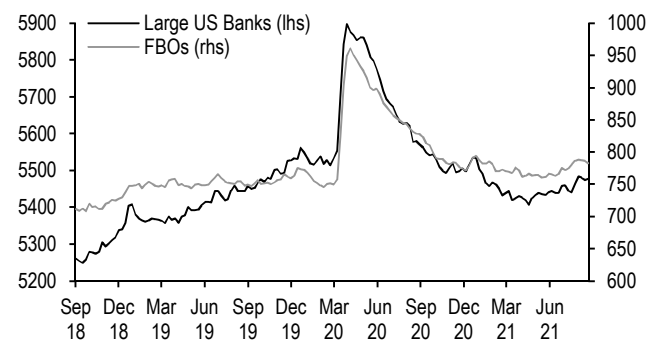
Overnight volumes as a percentage of total bank CP/CD volumes (%)



Source: DTCC, J.P. Morgan

Exhibit 5: The traditional bank loan market continues to be quite anemic, limiting the need for CP/CD funding on a structural basis

Loans of large US banks and FBOs (\$bn)



Source: Federal Reserve

Could we see more growth in bank CP/CD outstandings the remainder of this year? Perhaps, but we suspect it will not be by much. In fact, outstandings have somewhat stalled over the past few summer months. Historically, issuance tends to pick up around October/November as some banks take advantage of the relative value proposition available between the USD CP/CD markets and the cross currency basis markets due to year-end funding pressures (i.e., borrow in USD CP, lend USD in

cross currency basis market). However, with so much excess liquidity available in the banking system, we suspect any dislocations around year-end will be somewhat contained, which might limit any opportunistic funding that has been raised in prior years. At the same time, the need for CP/CD funding on a more structural basis remains scant as the traditional bank loan market continues to be quite anemic (**Exhibit 5**). In particular, our US large bank equity analysts noted that banks' C&I lending has been cannibalized by markets and non-bank players, a trend that is likely going to continue (see [*Disintermediation of Banks' C&I Loans To Continue - Increased Since Pandemic, CLOs Top \\$1 Trillion*](#), V. Juneja, 9/9/10). Overall, we don't expect the meaningful rise in bank CP/CD outstandings to continue the rest of this year.

How have corporates been managing their cash portfolios?

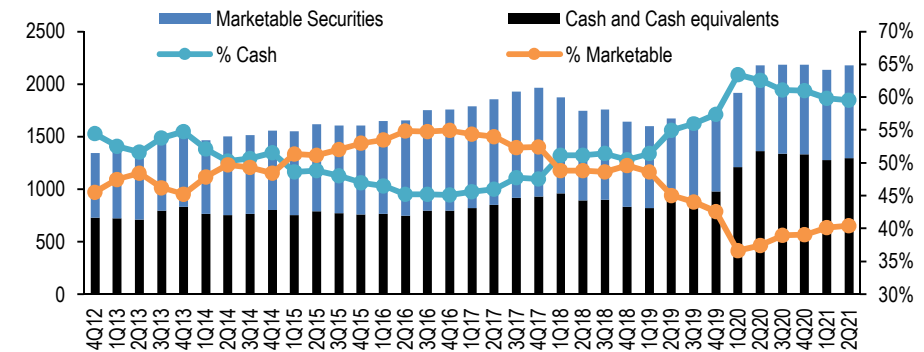
With the Fed pinning rates against the effective lower bound until higher inflation and lower unemployment justify the next rate hike, liquidity-focused investors inhabiting the cash money markets are in a fix. As always, they want yield, but need to adhere to their liquidity mandates, whether that is overnight or over a horizon of several months. Given the Fed's policy stance, and combining that with Treasury cutting T-bill supply, the current T-bill curve from 1m to 1y starts at 2bp and goes to 7bp. Most of the T-bill curve is trading below tri-party repo levels. Based on Crane Data, weighted average net yields on institutional government MMFs are now in the 2bp area, just a notch above deposits. In credit, net yields on institutional prime funds are better (6bp area), but not currently compelling for many deposit holders.

In late 2020, we posited that low deposit and MMF yields would encourage investors to shift further out the curve and into the short-term markets, most likely via Separately Managed Accounts (SMAs) which can have more bespoke investment policies and fee structures. In some cases, asset owners are either expanding or re-engaging in self-management (buying bills, discos, CP, etc. directly), either to increase yields, avoid management fees, or both. In both instances, corporates are venturing to hold more securities, as opposed to deposits and/or MMFs. While there are limited hard data on these flows, balance sheet data from S&P's non-financial corporates appear to support this behavior taking place over the past year. Indeed, based on what corporates reported for cash and cash equivalents and marketable securities in their 10-Qs, the amount of marketable securities held as a percentage of their aggregate cash portfolios increased to 40% as of 2Q21, from 37% a year ago, even as their cash balances remained at roughly \$2.2tn (**Exhibit 6**). Furthermore, it appears that some corporations have been willing to forgo a little liquidity in exchange for yield as the amount of long-term marketable securities they hold has increased over the past year versus short-term marketable securities (**Exhibit 7**).

To be sure, this is not the first time that corporates have engaged in such yield-seeking behaviors. Similar shifts took place in 2014-2016. At that time, the money markets were not only confronting a low interest rate environment but also MMF reforms that dramatically altered the structure of prime MMFs. While aggregate cash balances were nearly \$1tn smaller back then, the percentage of marketable securities reached as high as 55%, and the percentage of long-term marketable securities went as high as 26%. Overall, we would not be surprised if money continues to shift out the curve, particularly as banks are looking to shed deposits, MMFs are already struggling with lack of supply and low yields, and MMF reforms are impending. If this proves true, front-end spreads could remain tight for quite some time.

Exhibit 6: Corporates are holding more securities, as opposed to deposits and/or MMFs

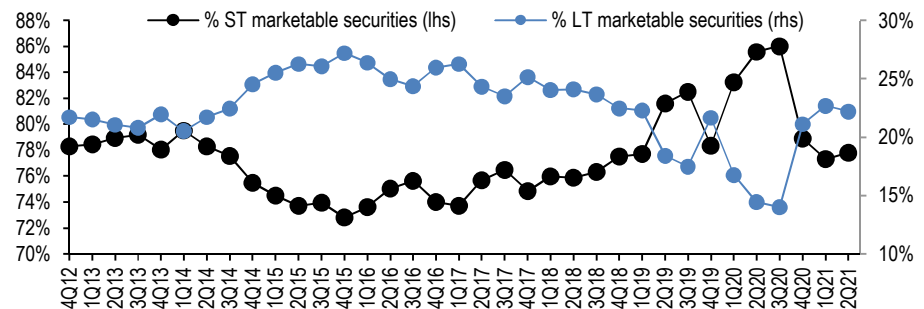
Cash and cash equivalents and marketable securities (lhs, \$bn) vs % cash and % marketable securities (rhs, %), held by S&P non-financial firms



Source: Bloomberg, J.P. Morgan

Exhibit 7: Relative to short-term marketable securities, the amount of long-term marketable securities held by corporates has increased over the past year

Percentage of marketable securities that are long-term versus short-term, held by S&P non-financial firms (%)



Source: Bloomberg, J.P. Morgan

Agency MBS

-
- **A range-bound rates market and limited policy news left mortgages on spread this week**
 - **Although we approach taper and net issuance remains robust, banks have plenty of cash to put to work in securities; our equity strategists expect that disintermediation of bank C&I loans will continue**
 - **The Fed's reinvestments and net purchases are both conducted on a mid-month to mid-month cycle. Since the November FOMC falls before the November purchase period, but the December FOMC occurs after the December purchase cycle has started, the difference in taper implementation could be two months**
 - **We review the latest conventional delinquency stats with a focus on borrowers reaching the end of forbearance; the small group that reached that point in August saw a modest pickup in cures via payment deferral**
 - **Net issuance is \$600bn through August; HPA remains robust, purchase apps show no signs of tailing off more rapidly than the normal seasonal pace, and refi activity has picked up—we project \$800bn by year end**
 - **We will update our TBA definitions for 30yr 1.5s, 3s, and 3.5s, as well as 15yr 2.5s-3.5s, and these new definitions will first show up in the packet on the morning of Monday 9/13**

Views

- **We remain neutral on the production coupons, preferring to roll**
 - **In specs, 2s offer the best spreads; we also broadly like NYs as their recent prepayments have been favorable**
-

A range-bound rates market and limited policy news left mortgages on spread this week. There wasn't a strong reaction to Friday morning's [WSJ report](#) that the Fed was considering tapering at the November meeting and wrapping up bond purchases by mid-2022. Market expectations had already coalesced around either a November or December announcement after the weak August jobs number, as the unreactive mortgage basis showed.

The valuation tradeoff in mortgage space remains the same; TBAs still are rolling special (though by less than they were a few months ago), but offer tighter spreads than most spec categories. The technical picture remains balanced in the near term. As we discuss in more detail below, net issuance continues to run hot on the back of remarkably strong HPA, and we're adjusting our full year forecast up to \$800bn from \$675bn. At the same time, the Fed's buying should still absorb a decent chunk of the net supply in the near term, and even in the early stages of the taper. And, as our colleagues in bank equity research [recently noted](#), the disintermediation of bank C&I loans continues; the CLO machine and private equity are siphoning away traditional corporate loans from banks, leaving them to make lower yielding loans to non-bank financials. This also means they've still got plenty of cash to deploy into MBS if spreads were to widen or yields were to increase. So, while the Fed's taper approaches, there's latent demand that can support the sector and keep it from sharply widening.

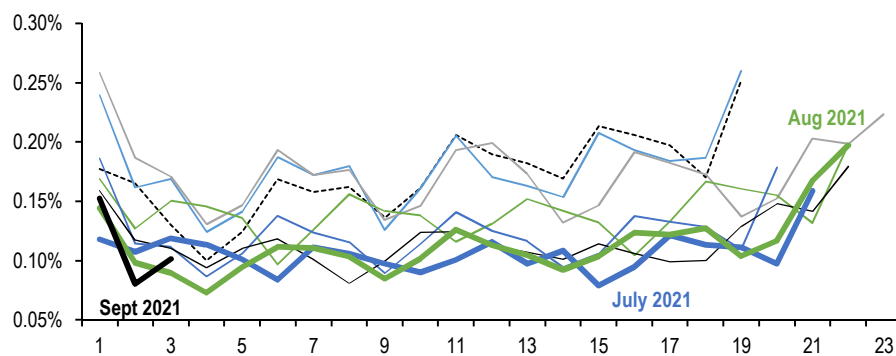
Tuesday's prepayment report brought both good and bad news. Investors in higher coupon seasoned collateral appreciated the muted prepay response up the stack, where speeds were close to flat though daycount was up by a day; on the other hand, speeds on 2s jumped sharply with cuspy borrowers responding to the dip in rates in late July/early August. We saw the first signs of what the end of forbearance might mean for borrowers, and discuss the available conventional data in more detail below. The modification information is lagged a month, but we did see an uptick in payment deferrals among borrowers rolling from 17 to 18 months delinquent (a proxy for the end of forbearance). On the Ginnie side, overall buyouts declined, but notably Freedom's tally continued to edge up (from \$0.9bn in July to \$1.5bn in August) and appears to be driven entirely by an uptick in modifications. At a high level, the Ginnie cure rate for borrowers rolling from 17 to 18 months delinquent didn't appear to significantly increase, but next month's data should be a cleaner gauge of the transition rates out of forbearance.

Black Knight: September started uneventfully

It's too early for us to make any strong inferences from the Black Knight data available for September, but with just three days of data in we're not far off from August's start—implying a down 5% month factoring in daycount (**Exhibit 1**). 2s do appear to be faster m/m by around 5%, while 2.5s and above account for most of the decline, with higher coupons falling a bit more than 5%. We'll need to get another week of data before making a more detailed projection with our day pattern method.

Exhibit 1: The first three days of paydowns appear to be tracking for a -5% month

Daily prepayment rate on conventional 30yrs, %



Source: J.P. Morgan, Black Knight

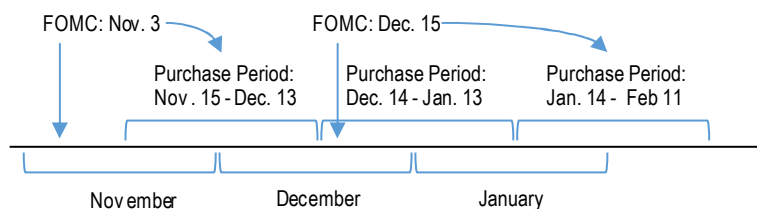
Taper mechanics—November and December might be two months apart

Now that the market seems to have settled on a November or December FOMC taper announcement, we've fielded a number of questions regarding the precise timing of implementation. The Fed's purchases—both MBS and Treasuries—now all happen on a [mid-month to mid-month purchase cycle](#) designed to align net purchases and MBS paydown reinvestments, so it's probably simplest for the Fed to announce tapering for implementation in the upcoming purchase period.

However, their November 3rd meeting falls *before* the announcement for the 11/15 – 12/13 purchase period, while their December 15th meeting falls *after* the start of the 12/14 – 1/13 purchase period (**Exhibit 2**). So, a taper announcement at the November FOMC might effectively imply a taper start two months before an announcement at

the December FOMC, unless the Fed chooses to make a mid-schedule adjustment. This difference won't matter much at the macro level, but for MBS investors it does mean that a November announcement could push the market toward spread normalization slightly faster than the announcement date gap might imply.

Exhibit 2: The timing of the Nov/Dec FOMC meetings could mean a two month taper difference



Source: J.P. Morgan

This is different from how the Fed operated back at the end of QE3. At that time, the Fed's buying pattern was more complicated. Their net purchase amounts were distributed over the trading days in a given calendar month (whatever fell in 8/1 – 8/31, for example), while their reinvestments were conducted over a mid-month to mid-month cycle (i.e., something like today's 8/13 – 9/14 window). So, regardless of when the FOMC meeting fell, they could always just decrease net purchases for the net calendar month.

Now, if the Fed does opt for a December announcement, it could conceivably alter the 12/14 – 1/13 purchases in the middle of the schedule. The MBS buying schedule is typically released every two weeks, making the change easier than for Treasuries (that schedule is announced for a full month). However, this would be somewhat akin to reverting to the old QE3 method, which complicated the accounting around net purchases. It'd be simpler to just stick to their current method, even though it would introduce a lag between announcement and implementation.

Update on conventional delinquencies

A few weeks ago, we wrote about the [timeline](#) for borrowers heading towards the 18 month maximum forbearance term, and since then we've received another month's worth of data. The September data only hinted slightly at what might happen as only a small block of borrowers rolled into their 18th month of missed payments. Below, we discuss the higher deferral usage among this group last month. Trial modification data is lagged by a month so it's possible that some borrowers who ran out of forbearance started mods that won't show up until next month.

There are a few points to mention with regards to the somewhat messy nature of the borrowers going from 17 to 18 months delinquent in this month's release. \$1.8bn of loans were in this category and they first went delinquent in March 2020 (meaning they missed their March 1 payment), before the larger group that missed the April 1 payment. So, these borrowers could have a somewhat different profile than the majority of COVID-19 related delinquencies with a correspondingly different share of mod and deferral workouts. The other consideration is that the borrowers who went 18 months delinquent in August might not have had forbearance that first missed payment month (and so had an extra month on this end) given the late March implementation of the program.

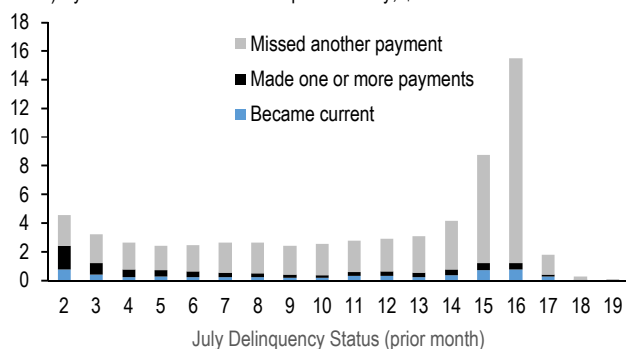
Moving onto the data, **Exhibits 3 and 4** show the delinquency transitions for borrowers based on prior month's number of payments missed. For example, a borrower 17 months delinquent in July either:

- 1) missed another payment, and became 18 months delinquent
- 2) made one or more payments (typically one) but remained delinquent
- 3) became current (the vast majority through a payment deferral)

As the left-hand chart implies, the bulk of loans advanced their delinquency status, particularly those who had already missed 4 or more payments. For the borrowers who had missed 17 payments, there was a noticeable (but small) uptick in deferral usage (15%) relative to other groupings.

Exhibit 3: Most seriously delinquent borrowers missed another payment in August...

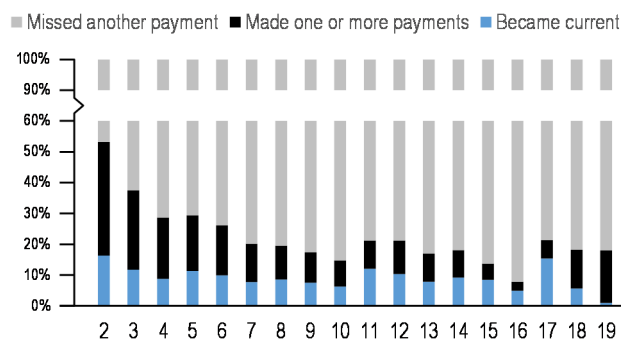
August payment status for conventional loans (issued in March 2020 or earlier) by number of months delinquent in July, \$bn



Source: J.P. Morgan, Fannie Mae, Freddie Mac

Exhibit 4: ...although a slightly greater share of the previously 17 months delinquent group took a payment deferral

Share of loans by August payment status, based on July's number of months delinquent, %



Source: J.P. Morgan, Fannie Mae, Freddie Mac

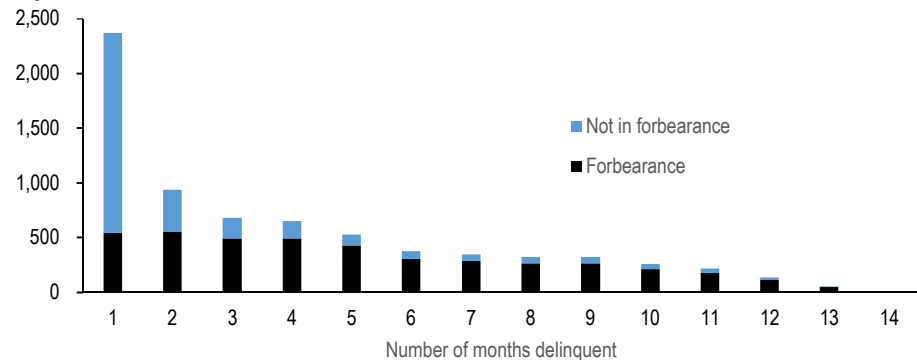
On the other hand, the block of borrowers that went delinquent in April 2020 showed the smallest curing rate at only 5%, with most missing another payment. This group should show more activity next month as those able to cure via a payment deferral should look to exercise that option as forbearance runs out.

We also checked in on the performance of loans that have already received a deferral over the past year. Over 92% remain current or have missed only one payment, and we've seen that this group's speeds typically catch up to the current, non-deferred cohort after meeting the requirement of three consecutive payments before a refinance. **Exhibit 5** shows the status of the other \$7.2bn (or \$4.9bn, excluding those with one missed payment). These borrowers are eligible for another deferral (as long as they don't go over the 18 month cap on deferred payments)¹. Still, the return to delinquent status probably makes it more likely that they will opt for a modification and buyout at the end of their forbearance plans.

¹ <https://singlefamily.fanniemae.com/media/22936/display>, page 7

Exhibit 5: A smattering of loans that have already received deferrals went delinquent again

For loans that already have received a COVID-19 payment deferral, amount by number of months delinquent in August, \$mm

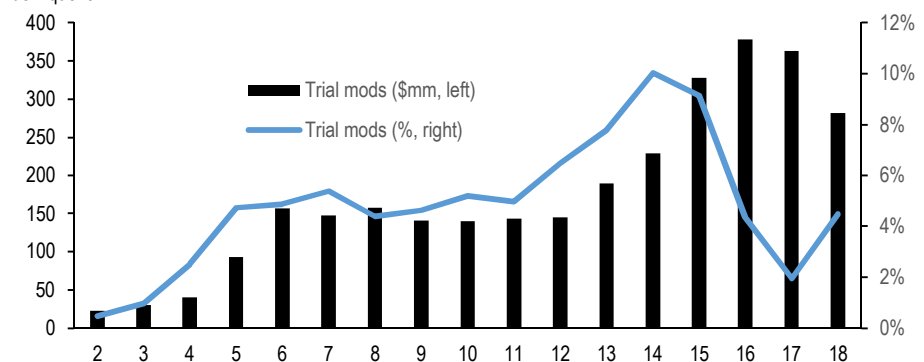


Source: J.P. Morgan, Fannie Mae, Freddie Mac

Beyond delinquency status, the GSEs also give out a field called "borrower assistance plan" (BAP) that shows if a borrower has a trial modification or forbearance. Unfortunately this field is lagged by a month relative to other disclosures due to the timing of when servicer's report the borrower's status. In other words, the September 4th business day monthly data shows the delinquency status for August but the July "assistance plan". This means, among other things, that loans still appear to be in forbearance on the first month they show a deferral/a return to current. The other immediate issue is that we can't see any uptick in trial mods at this stage for borrowers who might have had to exit forbearance in August. **Exhibit 6** shows the current usage of trial modifications by number of months delinquent. The share has generally been in the 5-10% range, slightly higher for borrowers evaluating their options before extending forbearance again, and lower for the group approaching the 18 month maximum. We will wait for next month's release to see how many of the borrowers initially delinquent in March 2020 opted for a trial mod in August. It's tempting to say that it's the majority of borrowers that didn't become current (~85% of the borrowers who were 17m delinquent last month), but due to the forbearance confusion in March of 2020 that we discussed earlier, it's too early to know if that's really the case. Stay tuned.

Exhibit 6: The one month lagged borrower assistance plan data does not yet show any uptick in trial mod usage for borrowers reaching the end of forbearance

Amount and share of delinquent borrowers with a trial modification (one month lagged) by current number of months delinquent



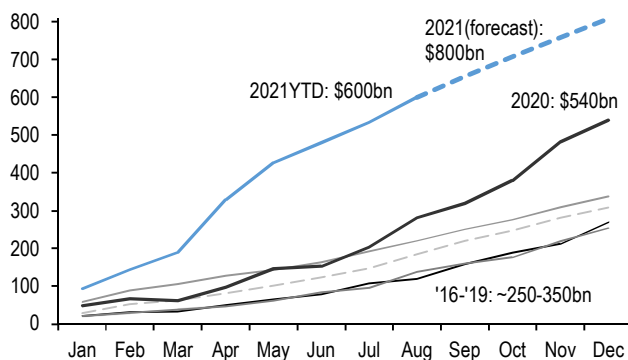
Source: J.P. Morgan, Fannie Mae, Freddie Mac

Net issuance \$600bn through August: full year 2021 on pace to hit \$800bn

August net issuance came in at \$67bn, partly boosted by a bump in gross issuance related to the removal of the Adverse Market Refinance Fee at the beginning of the month. **That brings the year-to-date total to just over \$600bn, surpassing full year 2020's \$540bn (Exhibit 7).** Though the pace is well off of the massive numbers seen in the first five months of the year, monthly net supply is still running much faster than the levels we were accustomed to before COVID. **By year end, we expect that we will hit \$800bn, even factoring in the seasonal decline in purchase closes.**

Exhibit 7: Net supply remains robust—2021 could see \$800bn

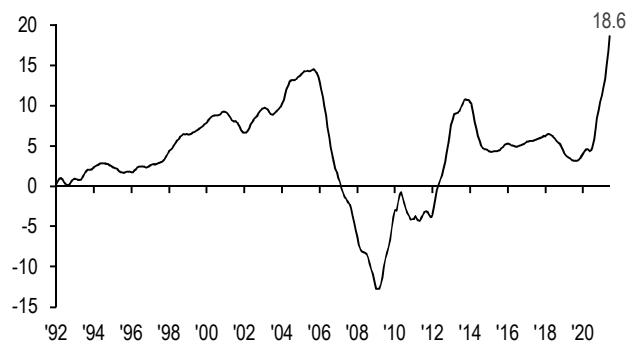
Cumulative fixed rate net issuance by year, \$bn



Source: J.P. Morgan

Exhibit 8: The central driver is HPA

Case Shiller National YoY HPA, %



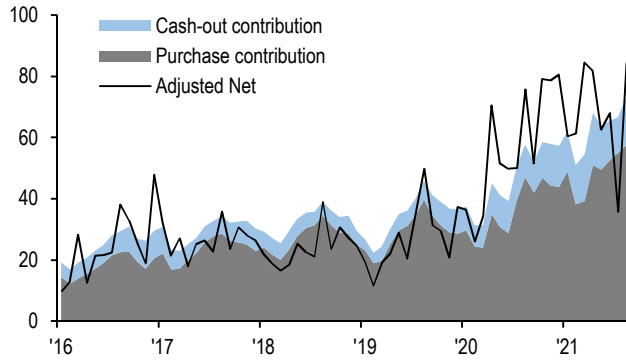
Source: J.P. Morgan, S&P CoreLogic

As we discussed in our [midyear commentary](#), exceptionally strong home price appreciation (**Exhibits 9**) is fueling the net issuance surge. Each purchase loan issued matters a lot more for net issuance now, since HPA leads to restriking at much larger loan size between the old and new loans. HPA also generates raw fodder for equity extraction, leading to higher cash-out issuance.

What's more, while the purchase market has cooled since the beginning of the year, the application volume is now tracking 2019's levels (**Exhibit 10**). We'd thought that the volume might decline more rapidly than typical seasonal patterns, but instead it has followed the normal descent. That decline will drag the purchase loan contribution to net issuance lower, but only by so much (typically the purchase contribution bottoms in February/March).

Exhibit 9: ...which has fueled purchase and cash-out activity...

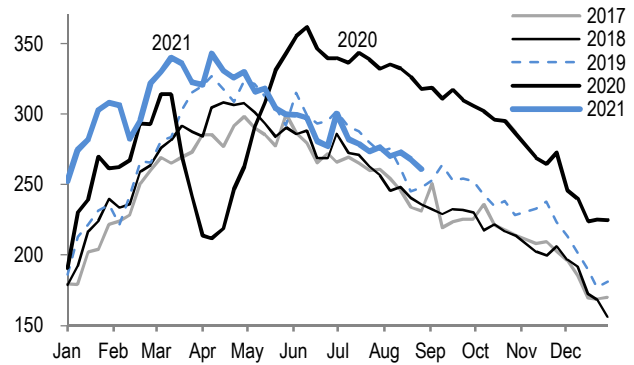
Estimated contribution to net supply by loan purpose, \$bn



Source: J.P. Morgan

Exhibit 10: ... and purchase apps haven't cratered

MBA Purchase Index, calendar year overlay with daycount adjustments



Source: J.P. Morgan, MBA

The recent uptick in prepayments will also help keep cash-out volumes afloat. Although HPA will boost cash-outs even at higher rates, borrowers looking for a rate/term refi have some propensity to take cash-out. Even recent vintages (some of the most responsive in the latest report) will have experienced strong HPA and could be in a position to take out cash. All in all, the end of the year is shaping up to remain robust for net issuance.

TBA Definition Update (Originally published 9/1)

Today (Friday 9/10), we will update our TBA definitions for UMBS 30yr 1.5s, 3s, and 3.5s, as well as UMBS 15yr 2.5s, 3s, and 3.5s. These definitions will better align with the observed deliverable and will all season month to month. See the tables in **Exhibits 11 and 12** for more details on the new definitions that will show up first in the daily packet on Monday 9/13. Note that the WALAs shown in the table applied to September settlement and that all of these definitions will season an additional month for October settlement.

Exhibit 11: 30yr conventional TBA definition updates and impacts...

Current and new TBA definitions. Valuation impacts on OAS and OADs are also shown (this represents the change in the level of these values resulting from the new definitions), as of the 8/30/2021 close, for September Class A settle

| Prod | Cpn | Current | | | | | New | | | | | Tsy OAS | | OAD | | OAC | | Life CPR | | Impact | | | |
|------|-----|---------|------|--------|------|-----|------|------|--------|------|-----|---------|-----|------|-----|------|------|----------|------|--------|------|------|----------|
| | | wala | wac | als(k) | fico | ltv | wala | wac | als(k) | fico | ltv | Curr | New | Curr | New | Curr | New | Curr | New | OAS | OAD | OAC | Life CPR |
| FNCL | 1.5 | 2 | 2.50 | 355 | 770 | 70 | 4 | 2.54 | 345 | 770 | 70 | -5 | -2 | 6.5 | 6.3 | -2.7 | -2.8 | 8.8 | 9.4 | 3 | -0.1 | 0.0 | 0.6 |
| FNCL | 3.0 | 19 | 3.86 | 335 | 755 | 76 | 14 | 3.86 | 315 | 735 | 77 | -15 | -10 | 0.8 | 0.8 | -1.4 | -1.5 | 31.6 | 30.7 | 5 | 0.0 | -0.2 | -0.9 |
| FNCL | 3.5 | 23 | 4.40 | 310 | 735 | 78 | 23 | 4.40 | 300 | 735 | 80 | -15 | -8 | 0.7 | 0.8 | -0.5 | -0.6 | 34.3 | 32.8 | 7 | 0.1 | -0.1 | -1.5 |

Source: J.P. Morgan

Exhibit 12: ...and the same for conventional 15yrs

Current and new TBA definitions. Valuation impacts on OAS and OADs are also shown (this represents the change in the level of these values resulting from the new definitions), as of the 8/30/2021 close, for September Class B settle

| Prod | Cpn | Current | | | | | New | | | | | Tsy OAS | | OAD | | OAC | | Life CPR | | Impact | | | |
|------|-----|---------|------|--------|------|-----|------|------|--------|------|-----|---------|-----|------|-----|------|------|----------|------|--------|-----|------|----------|
| | | wala | wac | als(k) | fico | ltv | wala | wac | als(k) | fico | ltv | Curr | New | Curr | New | Curr | New | Curr | New | OAS | OAD | OAC | Life CPR |
| FNCL | 2.5 | 5 | 3.13 | 275 | 760 | 63 | 12 | 3.13 | 255 | 756 | 64 | -44 | -30 | 0.6 | 1.1 | -0.7 | -1.0 | 33.1 | 29.2 | 14 | 0.5 | -0.3 | -3.9 |
| FNCL | 3.0 | 30 | 3.87 | 260 | 758 | 67 | 26 | 3.62 | 210 | 748 | 67 | -9 | -2 | 1.3 | 1.3 | -1.0 | -0.9 | 29.1 | 27.6 | 7 | 0.1 | 0.1 | -1.5 |
| FNCL | 3.5 | 26 | 4.05 | 269 | 745 | 68 | 57 | 4.12 | 100 | 746 | 66 | -19 | 0 | 1.0 | 1.5 | -0.7 | -0.5 | 29.3 | 24.5 | 19 | 0.5 | 0.2 | -4.8 |

Source: J.P. Morgan

Week in review

- **MBA Weekly Survey:** For the week ending September 3, the purchase application index fell 0.2% to 258.4, and the refinance index fell 2.8% to 3292.1 (seasonally adjusted) (**Exhibits 13 and 14**).
- **Freddie Primary Survey:** For the Monday-Wednesday period prior to September 9, 2021, 30-year conventional conforming fixed-rate mortgages averaged 2.88%, up 1bp from the previous week (**Exhibit 15**).
- **Primary dealer agency MBS passthrough positions** fell \$2.4bn to \$49.0bn as-of close of trading September 1. Other agency MBS holdings were \$0.2bn lower at \$17.4bn.
- **Fixed-rate agency gross and net issuances were \$278.3bn and \$67.2bn, respectively, in August (Exhibit 16).** September gross supply currently stands at \$131.6bn.

Exhibit 13: MBA Purchase Index, calendar year overlay with daycount adjustments

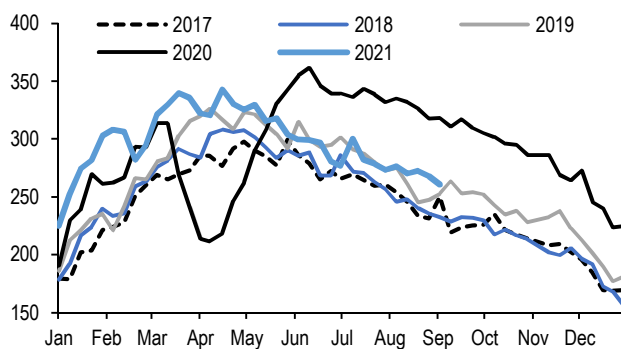


Exhibit 14: MBA Refi Indices, seasonally adjusted

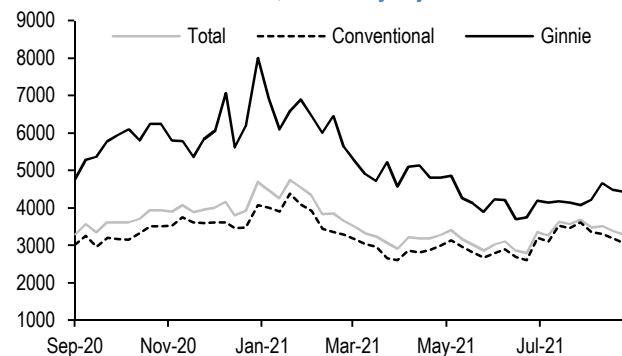


Exhibit 15: Primary mortgage rates, %

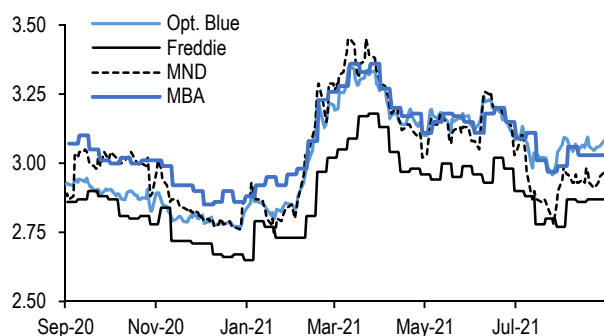
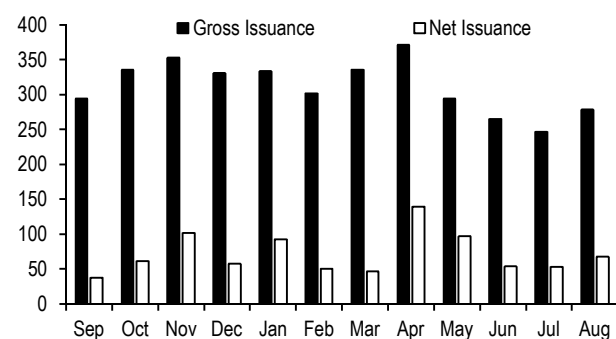


Exhibit 16: Gross and net fixed-rate MBS monthly issuance, \$bn



RMBS Credit Commentary

- **RMBS credit had a quiet holiday week with no new issue supply and spreads unchanged across sectors**
- **This week, Freddie announced the first ever tender offer for up to \$650mn of original face of STACR notes**
- **The accompanying FAQ indicated that these bonds were selected as they did not provide any capital relief to Freddie Mac**
- **An additional consideration may have been the cost of credit protection in these pre-COVID issued deals**
- **The rise in DLQs and fast speeds have driven up the size of the subordinate stack relative to the pool and increased the implied g-fee**
- **Through this tender offer, Freddie is able to reduce the size of the subordinate stack by purchasing and retiring the current pay bonds**
- **In general, the current pay tranches are far more capital efficient for Freddie than the B tranches, making them more suitable for a tender offer**
- **If reducing the cost of credit protection is a consideration, this tender offer may prove to be the first of many, as reducing the size of the subordinate stack could help improve the economics**
- **Of course, there are likely other factors driving this offer, including the capital rule, and it remains to be seen how Freddie utilizes this program**
- **We revise our issuance forecast higher to \$206bn from \$161bn previously**
- **Jumbo 2.0 and agency investor will continue to be the main drivers of supply in RMBS credit**

Market Commentary

RMBS credit had a quiet holiday week as no new issue was priced and spreads were unchanged across sectors. We expect the primary markets to meaningfully pick up in the coming weeks, and take this as an opportunity to revise our issuance forecasts. We now expect FY RMBS credit supply to reach \$206bn, up from \$161bn in the prior forecast. The new issue supply will likely continue to be driven by jumbo and investor securitizations. Separately, on Tuesday, Freddie announced the first ever tender offer for up to \$650mn of STACR notes. We discuss the tender offer in more detail below.

Exhibit 1: RMBS Credit issuance to date (\$mn)

| Issuance \$mn | 2019 FY | 2020 YTD | 2021 YTD |
|-----------------|---------|----------|----------|
| Jumbo 2.0 | 14,788 | 11,409 | 32,680 |
| Agency Investor | 3,315 | 2,267 | 8,733 |
| CRT | 21,279 | 12,820 | 11,866 |
| Rental | 4,367 | 4,466 | 11,125 |
| RPL | 47,976 | 13,219 | 21,152 |
| NPL | 16,210 | 6,455 | 14,290 |
| Non-QM | 28,922 | 16,709 | 15,751 |
| Seasoned CRT | 6,753 | 3,438 | 2,228 |
| Other | 7,664 | 6,126 | 13,331 |
| Total | 151,274 | 76,909 | 131,157 |

Source: J.P. Morgan

Exhibit 2: Returns

Monthly and total (year-to-date, unannualized) returns, %p

| | Aug Return | 2021 YTD Return | | | | |
|----------------|---------------|-----------------|-------|--------|-----------|--------|
| | | Total | Price | Factor | Principal | Coupon |
| Prime Fixed | -0.04% | -1.3% | -1.7% | -19.5% | 18.6% | 4.8% |
| Prime Hybrid | 0.00% | 3.4% | -1.8% | -18.0% | 24.4% | 2.7% |
| Alt-A Fixed | 0.49% | 4.2% | -5.3% | -6.7% | 11.9% | 5.2% |
| Alt-A Hybrid | 0.46% | 3.9% | -1.5% | -11.7% | 16.1% | 2.7% |
| Alt-A Floater | 0.91% | -1.6% | 0.2% | -16.2% | 16.3% | 0.5% |
| Option ARM | 0.42% | 8.2% | -0.2% | -10.8% | 20.5% | 0.5% |
| Subprime LCF | 0.29% | 6.4% | 4.8% | -3.3% | 4.6% | 0.4% |
| Prime.13H1 | -1.7% | -1.7% | -1.2% | -41.1% | 60.5% | 1.9% |
| Prime.14 | 0.4% | -5.0% | -1.5% | -45.3% | 65.7% | 2.4% |
| Prime.15 | -2.5% | -12.8% | -1.5% | -50.8% | 67.9% | 1.9% |
| Prime.16 | -0.7% | -8.8% | -0.9% | -46.5% | 62.2% | 1.9% |
| Prime.17 | 0.2% | 0.5% | -1.0% | -49.0% | 84.6% | 2.3% |
| Prime.18 | -0.3% | -7.0% | -2.1% | -61.5% | 118.5% | 2.6% |
| Prime.19.3.5 | 0.2% | -0.4% | -1.1% | -48.8% | 83.0% | 1.9% |
| Prime.19.4.0 | -0.7% | -0.8% | -1.5% | -61.0% | 128.1% | 2.6% |
| Prime.20.2.5 | 0.2% | -0.1% | -1.1% | -44.0% | 70.4% | 1.7% |
| Prime.20.3.0 | 0.2% | -0.2% | -1.1% | -47.8% | 80.1% | 2.0% |
| CRT.19.LLTV.M2 | 0.1% | 2.3% | 1.4% | -35.1% | 34.6% | 1.3% |
| CRT.19.LLTV.B1 | 0.3% | 4.6% | 2.0% | 0.0% | 0.0% | 2.6% |
| CRT.19.HLTV.M2 | 0.2% | 2.2% | 1.1% | -33.2% | 33.0% | 1.3% |
| CRT.19.HLTV.B1 | 0.3% | 5.3% | 2.6% | 0.0% | 0.0% | 2.7% |
| CRT.20.LLTV.M2 | 0.1% | 1.9% | 0.6% | -30.8% | 30.6% | 1.6% |
| CRT.20.LLTV.B1 | 0.2% | 4.7% | 2.0% | 0.0% | 0.0% | 2.7% |
| CRT.20.HLTV.M2 | 0.2% | 2.1% | 0.6% | -27.3% | 27.0% | 1.7% |
| CRT.20.HLTV.B1 | 0.1% | 5.0% | 2.2% | 0.0% | 0.0% | 2.8% |
| RPL.19.AAA | -0.1% | 0.8% | 0.0% | -23.8% | 29.2% | 2.4% |
| RPL.19.AA | -0.2% | 2.2% | 0.9% | -16.4% | 18.2% | 2.4% |
| RPL.19.A | 0.0% | 2.3% | 0.2% | -6.4% | 6.4% | 2.5% |
| RPL.20.AAA | 0.0% | 0.6% | -0.1% | -17.5% | 20.0% | 1.6% |
| RPL.20.AA | -0.1% | 1.0% | -0.5% | -4.8% | 4.5% | 2.0% |
| RPL.20.A | -0.1% | 2.1% | 0.4% | -9.8% | 10.4% | 2.1% |
| Non-QM.19.AAA | 0.8% | -0.3% | -1.5% | -78.3% | 347.1% | 2.1% |
| Non-QM.19.AA | 0.30% | -1.3% | -2.1% | -74.6% | 281.4% | 2.2% |
| Non-QM.19.A | 0.31% | -0.2% | -1.5% | -74.6% | 282.7% | 2.3% |
| Non-QM.19.BBB | 0.31% | -7.9% | -1.6% | -64.1% | 151.7% | 2.5% |
| Non-QM.19.BB | 0.41% | 2.1% | -0.5% | -67.7% | 204.2% | 3.1% |
| Non-QM.20.AAA | 0.04% | 0.5% | -0.3% | -40.2% | 66.1% | 1.2% |
| Non-QM.20.AA | 0.12% | 1.0% | -0.4% | -17.6% | 20.9% | 1.7% |
| Non-QM.20.A | 0.16% | 1.1% | -0.5% | -17.6% | 20.8% | 2.0% |
| Non-QM.20.BBB | 0.12% | 3.0% | 0.6% | 0.0% | 0.0% | 2.4% |
| Non-QM.20.BB | 0.19% | 4.1% | 1.0% | 0.0% | 0.0% | 3.0% |
| SFR.17.AAA | 0.0% | 0.7% | -0.4% | -47.2% | 47.2% | 1.1% |
| SFR.17.AA | 0.20% | 0.7% | -0.6% | -33.1% | 33.1% | 1.4% |
| SFR.17.A | 0.16% | 0.8% | -0.7% | -33.1% | 33.1% | 1.5% |
| SFR.17.BBB+ | 0.10% | 0.9% | -0.8% | -33.1% | 33.1% | 1.7% |
| SFR.17.BBB- | 0.11% | 0.9% | -1.2% | -32.9% | 33.0% | 2.1% |
| SFR.17.BB/NR | 0.22% | 1.3% | -1.4% | -32.9% | 32.9% | 2.7% |
| SFR.18.AAA | 0.10% | 1.1% | 0.4% | -2.9% | 2.9% | 0.7% |
| SFR.18.AA/AA+ | 0.13% | 1.2% | 0.4% | 0.0% | 0.0% | 0.8% |
| SFR.18.A/A+ | 0.15% | 1.3% | 0.4% | 0.0% | 0.0% | 1.0% |
| SFR.18.BBB+ | -0.01% | 1.4% | 0.3% | -80.2% | 80.3% | 1.1% |
| SFR.18.NR | 0.17% | 1.3% | 0.3% | -61.7% | 61.6% | 1.1% |

Source: J.P. Morgan

Freddie tender offer: Improving the economics

This week, Freddie announced the first ever tender offer for up to \$650mn of original face of STACR notes. The tender offer period will begin on September 7, 2021 and end on October 4, 2021. The securities and tender offers are listed in **Exhibit 3**. Across all bonds, the tender offer prices are 0.5pt to 1pt higher than recent TRACE prints.

Exhibit 3: This week, Freddie announced the first ever tender offer for up to \$650mn of original face of STACR notes

STACR bonds on Freddie's tender offer

| Deal name | CUSIP | Tender offer price | TRACE date | TRACE price | TRACE size (\$) |
|--------------------|-----------|--------------------|------------|-------------|-----------------|
| STACR 2017-HQA1 M2 | 3137G0NE5 | \$103.96 | 9/1/2021 | \$103.00 | 1,246,540 |
| STACR 2017-HQA3 M2 | 3137G0RL5 | \$102.62 | 8/17/2021 | \$101.81 | 250,282 |
| STACR 2016-HQA3 M3 | 3137G0LA5 | \$103.61 | 9/3/2021 | \$102.97 | 808,000 |
| STACR 2016-HQA4 M3 | 3137G0LU1 | \$104.05 | 7/20/2021 | \$103.31 | 5,000,000 |
| STACR 2014-HQ2 M3 | 3137G0CH0 | \$104.09 | 8/26/2021 | \$103.19 | 636,193 |
| STACR 2015-HQA2 M3 | 3137G0HJ1 | \$103.66 | 8/12/2021 | \$102.94 | 1,379,075 |
| STACR 2015-HQA1 M3 | 3137G0GJ2 | \$103.24 | 9/3/2021 | \$102.59 | 386,295 |
| STACR 2017-DNA1 M2 | 3137G0MD8 | \$103.30 | 8/25/2021 | \$102.84 | 1,179,002 |

Note: TRACE prices are from the most recently recorded transactions for each deal.

Source: J.P. Morgan, Freddie Mac

As part of this tender offer, Freddie also released a FAQ that provides more insight into their thought process.² The FAQ clarified that this offer does not reflect a change in Freddie's issuance plans. It also said that these bonds were selected as they did not provide any capital relief to Freddie Mac. This suggests that the capital rule was one of the drivers behind the tender offer.

An additional consideration may have been the cost of credit protection in these pre-COVID issued deals. These deals were structured so that the subordinate stack and retained AH tranches would amortize at a similar rate. This way, while the weighted average coupon of the subordinate stack would increase as the cheaper M1, M2s pay down, the subordinate stack wouldn't become a bigger part of the overall pool. In normal times, therefore, such a waterfall would keep the implied g-fee of the CRT deal in check.

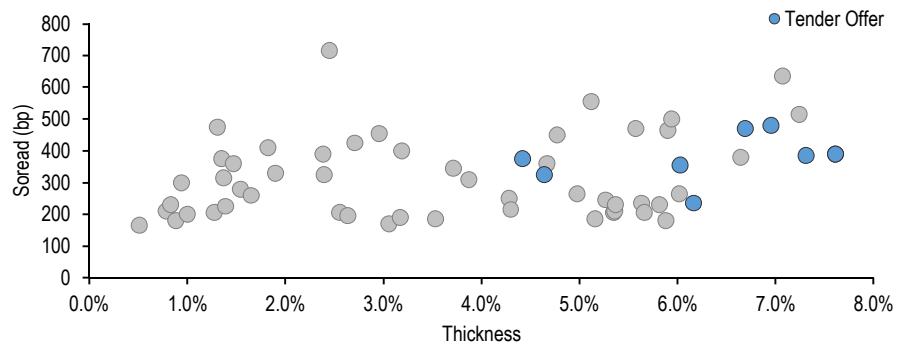
The COVID crisis changed the waterfall. As delinquencies rose, the DLQ trigger was hit and the subordinate tranches were locked out. At the same time, fast prepayments resulted in rapid amortization of the retained AH tranche. This increased the size of the subordinate stack relative to the pool and drove up the implied g-fee of the deals.

Through this tender offer, Freddie is able to reduce the size of the subordinate stack by purchasing the current pay bonds. Indeed, the eight bonds in the tender offer are some of the thicker outstanding M2 / M3 tranches, and have marginally higher spreads relative to other deals (**Exhibit 4**). In general, the current pay tranches are far more capital efficient for Freddie than the B tranches that have a 1250% RWA. This makes the current pays more suitable for a tender offer.

² <https://crt.freddiemac.com/news-insights/reference-materials/stacr-repurchase-faq>

Exhibit 4: The eight bonds in the tender offer are some of the thickest outstanding M2 / M3 tranches, and have marginally higher spreads

Spread (bp) vs tranche thickness on outstanding STACR M2 / M3 classes

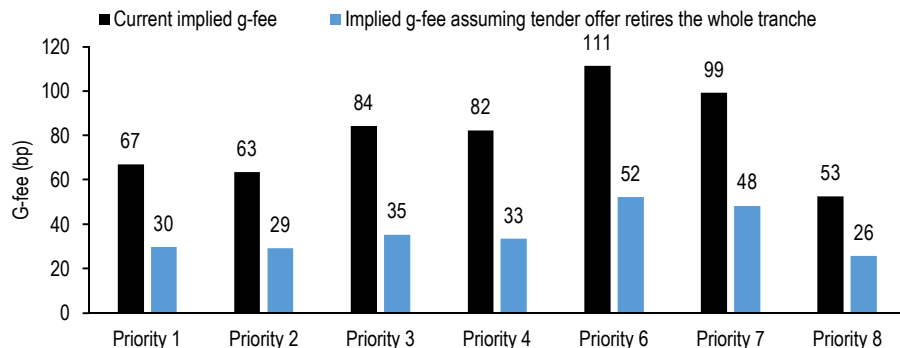


Source: J.P. Morgan

In **Exhibit 5**, we calculate an implied g-fee for the CRT deals that are part of the tender offer using current outstanding tranche thickness, DMs and model WALs. We also calculate this same implied g-fee assuming that the bonds in the tender offer are fully purchased by Freddie, resulting in the purchased tranche getting retired and having no coupon payment.

Exhibit 5: Reducing the size of these thick tranches helps bring in the cost of the CRT

Current implied g-fee vs g-fee assuming tender offer retires the whole tranche (bp)



Note: Implied g-fee only includes the cost of the credit tranches and not the Treasury allocation and other costs. The calculation assumes that the entire current pay tranche that is part of the tender offer is retired. STACR 2014-HQ2 M3 not included as the coupon for the B3H tranche is not available. Source: J.P. Morgan, Bloomberg Finance L.P.

Note that due to the size of the tender offer and the limitations of the process, Freddie likely won't be able to purchase all of these tranches, but this calculation is purely for illustrative purposes. We don't include STACR 2014-HQ2 M3 in the Exhibit as the coupon for the BH tranche is unavailable. The implied g-fees in the Exhibit do not include the Treasury allocation and other admin costs.

The Exhibit highlights the impact that retiring these notes could have on the implied g-fee, which would drop by 27 - 59bp, depending on deal. Again, note that we assume that the entire tranche in the tender offer will be retired, which is unlikely to be the case.

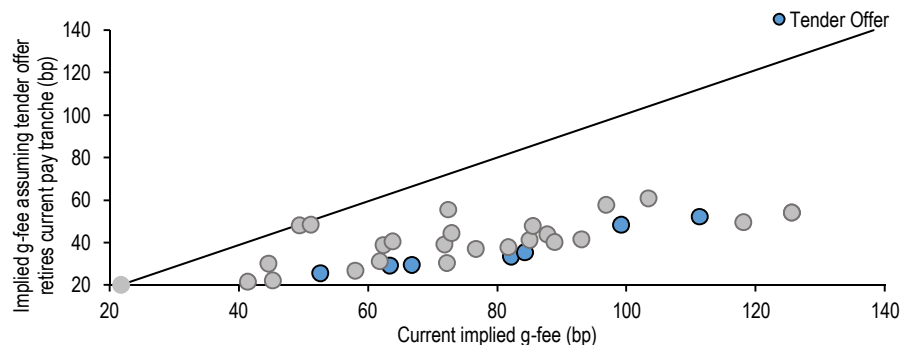
Interestingly, the g-fees line up well with the priority schedule embedded in the tender offer. This priority schedule determines the tranches that Freddie will purchase if investor interest exceeds the tender offer cap. Our analysis suggests that the deals with the highest priority will also have the lowest g-fee after the tranche is retired. For example, the priority 1 and 2 deals have a post-retirement g-fee of 30bp and 29bp versus 52bp and 48bp for the priority 6 and 7 deals.

The one deal that goes against this trend is the priority 8 deal. Despite being lowest in priority, this transaction has the lowest post-retirement g-fee of 26bp. The reason this deal may not be higher up on the priority list is because its current implied g-fee of 53bp is much lower than the rest of the deals.

If reducing the cost of credit protection is a consideration, this tender offer may prove to be the first of many. In **Exhibit 6**, we plot the current implied g-fee for all pre-2020 issued STACR actual loss deals against the implied g-fee assuming that a similar tender offer retires the entire current pay tranche. The chart shows that such a strategy would result in drops in implied g-fees across many transactions.

Exhibit 6: Conducting a similar tender offer across outstanding STACR deals will help the economics of CRT deals

Implied g-fee assuming tender offer retires the entire current pay tranche (bp) vs current implied g-fee on all pre-2020 issued STACR actual loss deals. Each dot represents a pre-2020 issued STACR actual loss transaction



Note: Implied g-fee only includes the cost of the credit tranches and not the Treasury allocation and other costs. The calculation assumes that the entire current pay tranche that is part of the tender offer is retired. STACR 2014-HQ2 M3 not included as the coupon for the B3H tranche is not available.

Source: J.P. Morgan, Bloomberg Finance L.P.

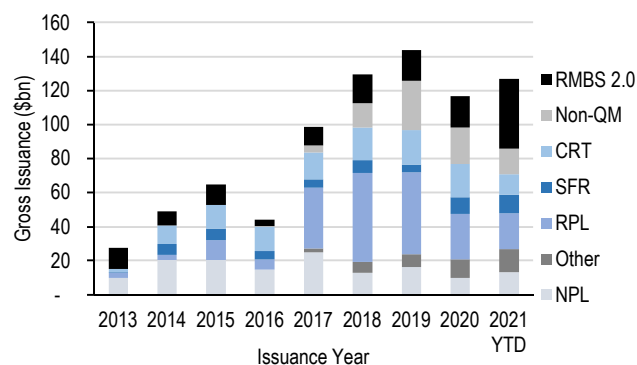
Of course, there could be many other factors driving this offer, likely including the capital rule. It remains to be seen how successful this offer is, and how Freddie uses this program.

2021 issuance forecast: \$206bn with more 2.0 supply

Non-agency RMBS issuance year-to-date has already outpaced 2020 levels and is well on track to exceed the post-crisis record of 2019 (**Exhibit 7**). Compared to 2019 though, the composition of non-agency supply has materially changed. RMBS 2.0, which has historically been a \$10 - \$20bn / year sector, has seen the largest growth with YTD issuance at \$41bn. Meanwhile, YTD non-QM, RPL and CRT issuance is down compared to the same period in 2019. Given these changes, we revise our gross and net issuance forecasts. We now expect the gross issuance to reach \$206bn, up from \$161bn in the prior forecast (**Exhibit 8**).

Exhibit 7: Non-agency RMBS issuance is well on track to exceed the post-crisis record of 2019

Gross issuance (\$bn) by sector



Source: J.P. Morgan, Bloomberg Finance L.P.

Exhibit 8: We now expect gross issuance to reach \$206bn, up from \$161bn in the prior forecast

\$bn

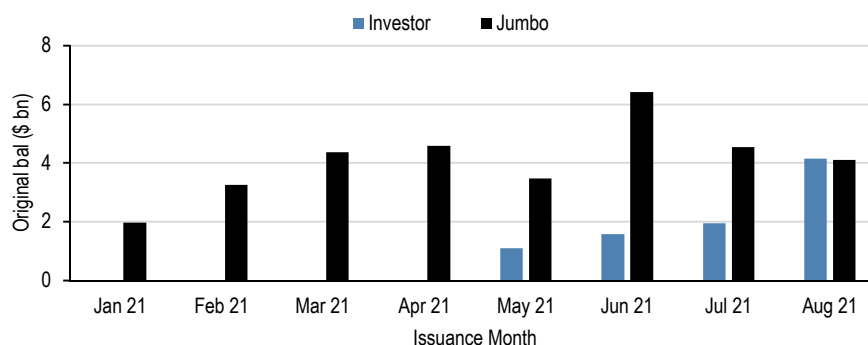
| | 2019 FY | | 2020 FY | | 2021 YTD | | 2021 Forecast | |
|--------------|------------|-----------|------------|-------------|------------|------------|---------------|-----------|
| | Gross | Net | Gross | Net | Gross | Net | Gross | Net |
| Legacy | | (56) | - | (43) | - | (31) | - | (36) |
| Jumbo 2.0 | 18 | 8 | 19 | (8) | 41 | 15 | 70 | 45 |
| Non-QM | 29 | 23 | 21 | 7 | 16 | (4) | 25 | (2) |
| CRT | 21 | 17 | 21 | 2 | 12 | 3 | 21 | 3 |
| SFR | 4 | 2 | 10 | 7 | 11 | 8 | 20 | 12 |
| RPL | 48 | 37 | 29 | 6 | 21 | (3) | 30 | (2) |
| NPL | 16 | 1 | 9 | 3 | 14 | 3 | 20 | 7 |
| Other | 8 | NA | 11 | NA | 13 | NA | 20 | NA |
| Total | 144 | 30 | 120 | (26) | 129 | (9) | 206 | 28 |

Source: J.P. Morgan

We expect jumbo 2.0 and investor securitizations to continue to be the main drivers of non-agency supply, and look for FY gross issuance to reach \$70bn. The agency investor collateral started to make its way into PLS as the GSEs implemented the 7% cap on investor / 2nd homes, as mandated by the revised PSPA. In May, we saw the first securitization of this collateral this year and since then, many of the biggest agency originators have issued investor deals in the PLS space (**Exhibit 9**). We expect issuance to be evenly split between jumbo and agency investor for the rest of the year.

Exhibit 9: We expect jumbo 2.0 and investor securitizations to continue to be the main drivers of non-agency supply

Jumbo and investor gross issuance (\$bn) by issuance month

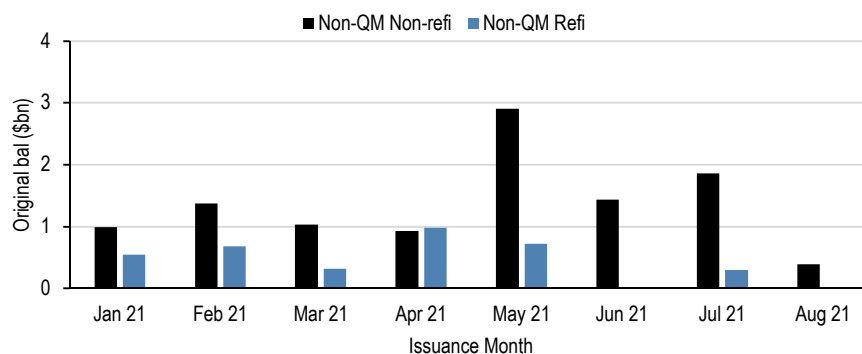


Source: J.P. Morgan, Bloomberg Finance L.P.

The securitization of new origination non-QM loans has seen some signs of recovery post-March 2020 (**Exhibit 10**). Refinancing transactions have also provided a meaningful supply boost to the sector. Issuers have been efficient at refinancing the transactions soon after the passage of the call date. Currently, the callable universe is roughly \$1.4bn and will increase to \$3.5bn by year-end. We revise FY non-QM issuance higher to \$25bn, assuming that a little over \$1bn of new originated loans will end up in securitizations each month and all of callable deals will be refinanced.

Exhibit 10: The securitization of new origination non-QM loans has seen some sign of recovery post-March 2020

Non-QM refi vs new origination gross issuance (\$bn) by issuance month



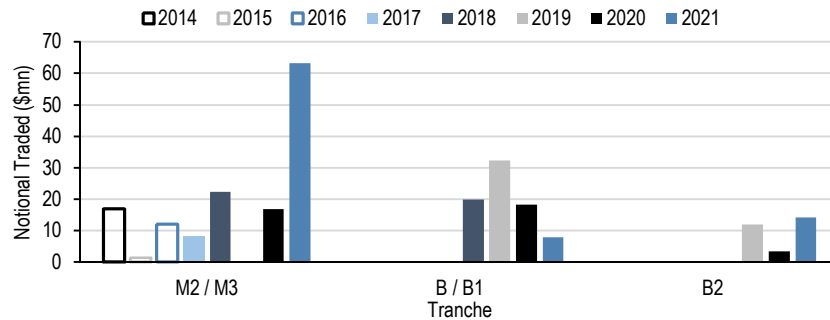
Source: J.P. Morgan, Bloomberg Finance L.P.

SFR is set to have its biggest issuance year in 2021. Similar to non-QM, this has been driven by a combination of refinancings and securitizations of new acquisitions. By year-end, roughly \$5bn of SFR will have passed the yield maintenance period. We revise our SFR forecast higher to \$20bn. We keep forecasts for CRT and RPL unchanged and revise NPL forecast marginally higher.

CRT TRACE tracker

Exhibit A1: Secondary trading activity by tranche, time and vintage

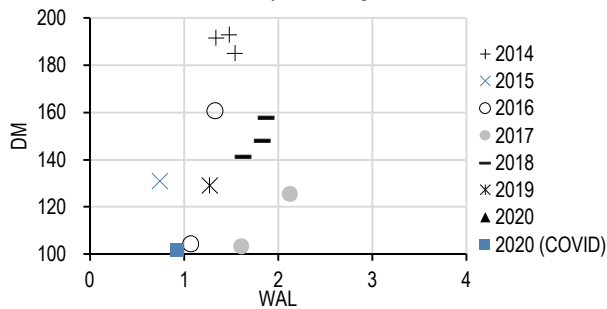
CRT notional traded from 9/3 to 9/9 by tranche and vintage



Source: J.P. Morgan, TRACE

Exhibit A2: M2 model WAL vs. DM for bonds that traded this week

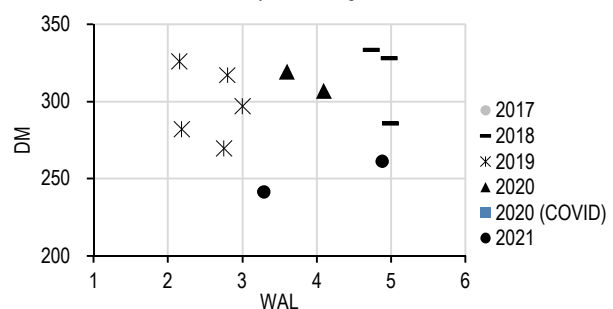
CRT M2 / M3 model DM vs WAL by deal vintage



Note: 2020 (COV) are post-March 2020 issued STACR deals.
Source: J.P. Morgan, TRACE

Exhibit A3: B1 model WAL vs. DM for bonds that traded this week

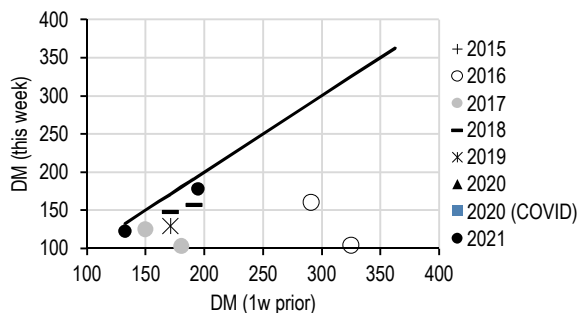
CRT B1 / B model DM vs WAL by deal vintage



Note: 2020 (COV) are post-March 2020 issued STACR deals.
Source: J.P. Morgan, TRACE

Exhibit A4: M2 spreads week-over-week

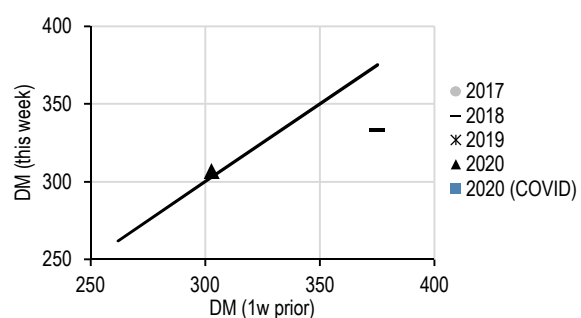
CRT M2 / M3 this vs prior week's DM@10CPR



Note: Prior week is defined as 7 - 14 days prior to today. Includes only bonds that have traded during both periods. 2020 (COV) are post-March 2020 issued STACR deals.
Source: J.P. Morgan, TRACE

Exhibit A5: B1 spreads week-over-week

CRT B1 / B this vs prior week's DM@10CPR



Note: Prior week is defined as 7 - 14 days prior to today. Includes only bonds that have traded during both periods. 2020 (COV) are post-March 2020 issued STACR deals.
Source: J.P. Morgan, TRACE

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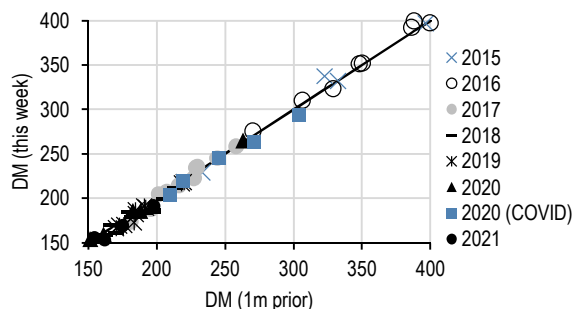
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Exhibit A6: M2 spreads month-over-month

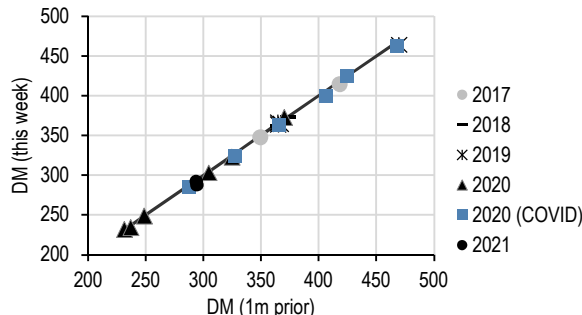
CRT M2 / M3 this week's DM@10CPR vs prior month's



Note: Prior month is defined as 30 - 45 days prior to today. Includes only bonds that have traded during both periods. 2020 (COV) are post-March 2020 issued STACR deals.
Source: J.P. Morgan, TRACE

Exhibit A7: B1 spreads month-over-month

CRT B1 / B this week's DM@10CPR vs prior month's



Note: Prior month is defined as 30 - 45 days prior to today. Includes only bonds that have traded during both periods. 2020 (COV) are post-March 2020 issued STACR deals.
Source: J.P. Morgan, TRACE

CMBS

- **CMBS spreads widened this past week with on-the-run BBB-s underperforming 10yr LCF AAAs. BBB-s were 10bp wider on the week to S+305 while LCF AAAs widened by just 1bp to S+68. Comparatively, corporates outperformed CMBS with 7-10yr single-A corporates about flat on the week and domestic HY 8bp tighter. With Delta cases seemingly having peaked in the US, we think CMBS BBB-s can play catch up to HY, leading to spread curve flattening. Synthetic BBB-s, on the other hand, have been leading cash, taking cues from the HY market**
- **CMBS issuance activity is expected to be heavy this month and likely in Q4 as well. On the HG corporate side, the Labor Day break was met with a flurry of issuance but our High Grade corporate strategists note that this supply has been well absorbed with spreads barely budging. If this is any indication of broad investor demand for bonds, CMBS spreads may not move materially wider on heavy supply after all. Regardless, we see any meaningful spread weakness in the near-term as an opportunity to add**
- **We continue to see value in seasoned LCF AAAs. The most seasoned bonds carry negative convexity risks as loans near their open periods. We see voluntary prepayments in the open period (CPY) as the primary risk and liquidation recovery prepayments as a secondary risk given typically long liquidation timelines for troubled loans. Under conservative CPY and our Flush and Extend scenario, we think 2012 vintage bonds can broadly offer attractive spreads at expected WAL under 1yr**

Exhibit 1: CMBS spread summary

| | This Week | 1 WK | 1 MTH | YTD |
|------------------------------|-----------|------|-------|-----|
| New Issue CMBS (Swap) | | | | |
| 5yr Super-Senior AAA | 44 | 1 | -1 | -14 |
| 10yr Super-Senior AAA | 68 | 1 | 0 | -1 |
| AS | 88 | 1 | 0 | 1 |
| AA | 107 | 4 | 4 | -13 |
| A | 145 | 5 | 5 | -30 |
| Pre-COVID BBB- | 305 | 10 | 15 | -90 |
| On-the-run BBB- | 305 | 10 | 15 | -80 |
| XA | 108 | 3 | -2 | -57 |
| Agency CMBS | | | | |
| Freddie K A1 (10yr coll.) | 7 | -4 | -4 | -19 |
| Freddie K A2 (10yr coll.) | 18 | 2 | 1 | -10 |
| Freddie K B (10yr coll.) | 130 | 0 | 5 | -55 |
| Freddie K C (10yr coll.) | 155 | 0 | 5 | -80 |
| Freddie K X1 | 65 | 0 | -10 | -75 |
| Freddie K X3 | 260 | -5 | -10 | -95 |
| FRESB A5H | 5 | 0 | 0 | -17 |
| FRESB A10F | 22 | 0 | 0 | -12 |
| FNMA DUS 10/9.5 TBA | 26 | -2 | -1 | -10 |
| GNMA Project Loan (3.5yr) | 60 | 0 | -5 | -15 |

Source: J.P. Morgan

Exhibit 2: Summary of CMBS issuance and dealer holdings

| YTD Issuance (\$bn) | 2021 | 2020 | % Diff. |
|-------------------------------|---------------|----------------|---------------|
| Conduit | 18.5 | 22.4 | -17% |
| SASB | 38.3 | 14.9 | 157% |
| CRE CLO | 27.3 | 6.2 | 339% |
| Other | 0.4 | 0.9 | -51% |
| Total Private Label | 84.5 | 44.4 | 90% |
| Freddie K | 44.3 | 33.3 | 33% |
| FRESB | 3.4 | 3.7 | -9% |
| Fannie MBS | 41.6 | 43.1 | -3% |
| GNR PL | 32.0 | 20.1 | 59% |
| Freddie Other | 2.2 | 0.3 | 566% |
| Agency CMBS | 123.5 | 100.5 | 23% |
| Total CMBS | 208.0 | 144.9 | 44% |
| YTD Issuance (\$bn) | 2021 | 2020 | % Diff. |
| Private Label Fixed | 24.9 | 31.0 | -20% |
| Private Label Floating | 59.6 | 13.4 | 343% |
| Agency Fixed | 93.8 | 86.4 | 9% |
| Agency Floating | 29.6 | 14.0 | 111% |
| Dealer Holdings (\$bn) | 9/1/21 | 8/25/21 | 8/4/21 |
| Private Label | 5.40 | 5.34 | 5.15 |
| Agency CMBS | 4.44 | 4.44 | 4.17 |

Source: J.P. Morgan, Commercial Mortgage Alert, Federal Reserve Bank of New York, Fannie DUS Disclose

Note: Dealer holdings reported with a 1-week lag.

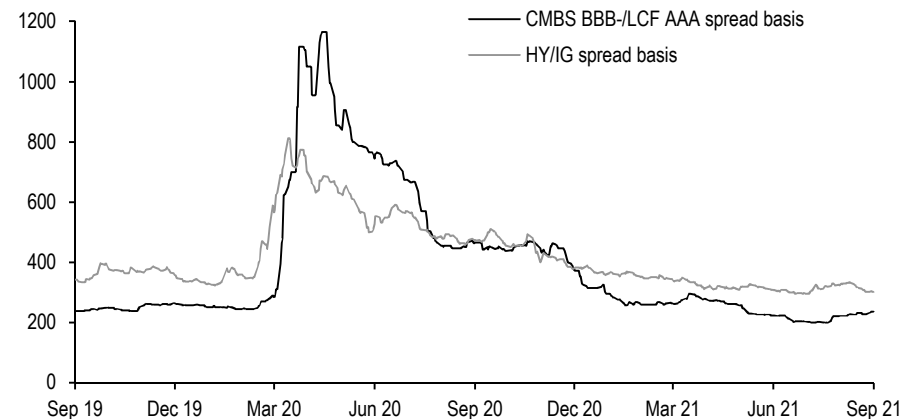
Weekly market snapshot

Market commentary – take a chance on seasoned LCF AAAs

CMBS spreads widened this past week with on-the-run BBB-s underperforming 10yr LCF AAAs. BBB-s were 10bp wider on the week to S+305, while LCF AAAs widened by just 1bp to S+68. Comparatively, corporates outperformed CMBS with 7-10yr single-A corporates about flat on the week and domestic HY 8bp tighter. The continued bearish spread curve steepening we've seen in CMBS since early summer is in contrast to the experience in the corporate market where the HY/IG spread basis has compressed in recent weeks (**Exhibit 3**). This divergence can be explained by the fact that CMBS has been more sensitive to pandemic concerns than the corporate market. The spike in Delta cases seems to have impacted CMBS credit more negatively than HY. That said, with Delta cases seemingly having peaked in the US, we think CMBS BBB-s can play catch up to HY, leading to spread curve flattening. Synthetic BBB-s, on the other hand, have been leading cash, taking cues from the HY market (**Exhibit 4**).

Exhibit 3: The CMBS spread curve has continued to steepen while the corporate spread curve has flattened

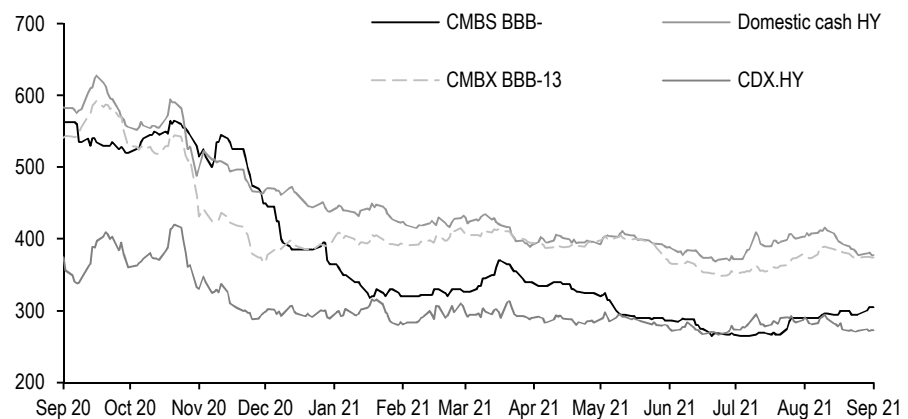
Conduit CMBS BBB-/LCF AAA spread basis versus cash HY/IG corporate spread basis (bp)



Source: J.P. Morgan

Exhibit 4: Meanwhile, CMBX BBB-s have led cash CMBS BBB-s, taking cues from HY

Spreads (bp)



Source: J.P. Morgan, IHS Markit

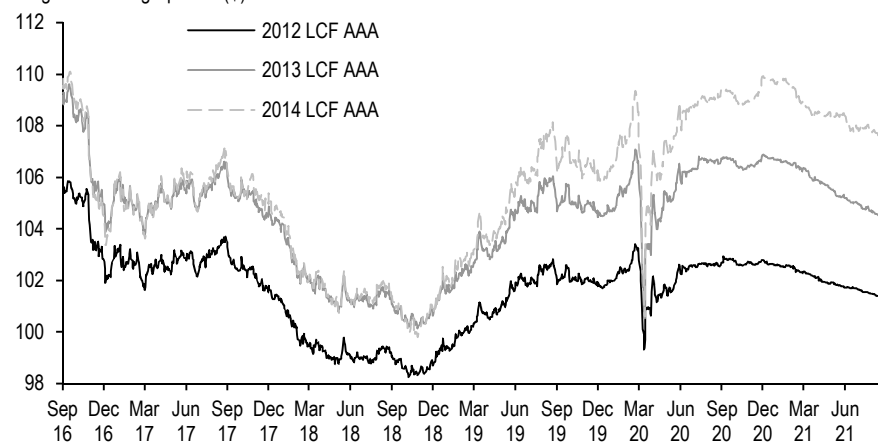
As we noted in our last weekly (see [here](#)), issuance activity is expected to be heavy this month and likely in Q4 as well. But CMBS isn't alone here with other spread

markets also expecting a lot of supply. On the HG corporate side, the Labor Day break was met with a flurry of issuance (\$60bn in the two days following Labor Day) but our High Grade corporate strategists note that this supply has been well absorbed with spreads barely budging (see [here](#)). If this is any indication of broad investor demand for bonds, CMBS spreads may not move materially wider on heavy supply after all. Regardless, we see any meaningful spread weakness in the near-term as an opportunity to add.

We also continue to see opportunities in seasoned vintages. We had previously also highlighted relative values in 2014-15 vintage LCF AAAs (see [here](#)) and seasoned 10yr front-pay AAAs, particularly 2013-15 vintages (see [here](#)) under our simple delinquency flush and extension scenarios. This week, we turn to some of the earliest LCF AAA cohorts in 2.0 CMBS that are starting to see loans enter the maturity window. For example, the 2012 vintage LCF AAAs are less than 1yr expected WAL bonds that are trading at modest dollar price premiums (**Exhibit 5**). As the underlying loans near maturity, these bonds face negative convexity risks, primarily due to voluntary prepayments in the open period (typically the last 4-6 months) but also liquidation recoveries, which we largely view as a secondary risk. Broadly speaking, the foreclosure/REO liquidation process can take a while, particularly for large assets like regional malls. For loans that move to special servicing due to maturity default risks and become liquidation candidates, the actual liquidation sale could take over a year after special servicing transfer and are unlikely to resolve at scheduled maturity.

Exhibit 5: At premium dollar prices, seasoned LCF AAAs face negative convexity risks

Weighted average prices (\$)

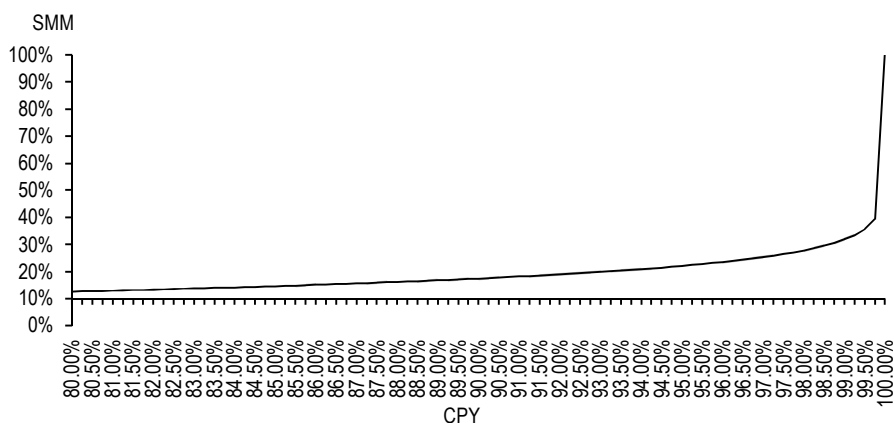


Source: J.P. Morgan, Pricing Direct

CPY measures the prepayment rate during a loan's open period. At issuance, conduit P&I bonds price to a 0 CPR/CPY assumption. When the cashflows are so long, the CPY assumption used bears little impact on valuations but with cashflows that are now so short, CPY assumptions matter greatly on the expected spread investors can earn for bonds trading to premium dollar prices. Naturally, the CPY calculation like CPR is an annualized number and as such, small changes in CPY assumptions can lead to fairly sizable changes in actual prepayment balance or SMM (**Exhibit 6**). For example, at 95% CPY, the SMM is 22.1% but at 99.5% CPY, the SMM is 35.7%.

Exhibit 6: The actual prepayment balance during the open period is quite sensitive to small changes in CPY assumptions

Single month mortality (SMM) by CPY



Source: J.P. Morgan

CPY is usually the highest in the first month of the open period and gradually tapers off (**Exhibit 7**). As such, using a high flat CPY may be too conservative. Overall, we find that the first month CPYs have been quite high in the earliest 2.0 cohorts (99.4-99.6% across 2010-12 vintages) but subsequent month CPYs fall off significantly. We also note that deals almost never pay at 100 CPY (100% of UPB paying off at the first open period) and think that running 100 CPY is far too harsh.

Exhibit 7: CPY tends to spike in the first month of open period but slows down in subsequent open periods

Conduit CMBS CPY in the first four months of the open period by vintage

| Vintage | 1st Month | 2nd Month | 3rd Month | 4th Month |
|-------------------|-----------|-----------|-----------|-----------|
| 2005 | 98.1% | 88.4% | 77.2% | 40.9% |
| 2006 | 98.6% | 85.4% | 70.6% | 31.1% |
| 2007 | 96.9% | 75.6% | 69.7% | 26.9% |
| 2008 | 98.4% | 70.8% | 79.0% | 14.5% |
| 2010 | 99.6% | 83.5% | 88.0% | 0.0% |
| 2011 | 99.4% | 69.7% | 57.7% | 48.9% |
| 2012 | 99.5% | 81.4% | 91.7% | 78.2% |
| 2013 | 97.7% | 76.3% | 81.6% | 44.3% |
| 2014 | 96.0% | 80.1% | 87.7% | 66.7% |
| 2005-2008 average | 97.9% | 83.0% | 72.4% | 31.9% |
| 2012-2014 average | 98.1% | 79.3% | 87.2% | 62.9% |

Source: J.P. Morgan, Trepp

Applying various CPY assumptions³ to our Flush and Extension framework⁴, we see that except for the extreme 100 CPY scenario which we deem unlikely, 2012-14 vintage LCF AAAs can offer attractive spreads with a short average WAL of 0.6yr to 2.5yr (**Exhibit 8**). 2012 vintage LCF AAAs appear to be the most sensitive to CPY assumptions given that over 70% of these LCF AAAs are current pays. Nevertheless, even under 99.5 CPY, these 0.6yr average WAL LCF bonds can offer spreads north of 50bp after flushing seriously delinquent loans and extending forborne loans. In reality, 2012 vintages have been prepaying with 99.5 CPY only in the first open month. Under a more realistic CPY ramp assumption⁵, 2012 LCF AAAs can offer an average spread of 56bp. That said, value in seasoned cohorts are always profile dependent.

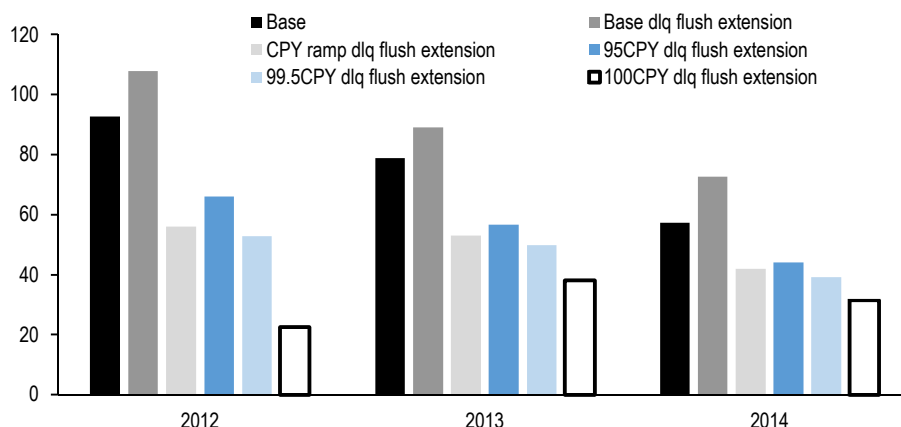
³ We run defeased loans with 100 CPY under all scenarios.

⁴ In our simple 'Flush and Extend' scenario, we immediately liquidate all 90-day+ delinquent loans including FC/REO loans at a 50% loss severity with an 18-month liquidation lag. Next, we extend all forborne loans by 24 months. Finally, we extend all non-multifamily loans with current NOI debt yield less than 10% and all multifamily loans with current NOI debt yield less than 8% by 24 months.

⁵Our CPY ramp assumption applies 99.5%, 81.4%, 91.7%, and 78.2% CPY in the first four open months (realized CPY for 2012 vintages).

Exhibit 8: 2012 vintage LCF AAAs can offer over 50bp average spread with 0.6yr average WAL even under conservative CPY scenarios

2012-14 vintage Conduit CMBS LCF AAA average spreads under various scenarios



Note: In our simple 'Flush and Extend' scenario, we immediately liquidate all 90-day+ delinquent loans including FC/REO loans at a 50% loss severity with an 18-month liquidation lag. Next, we extend all forbore loans by 24 months. Finally, we extend all non-multifamily loans with current NOI debt yield less than 10% and all multifamily loans with current NOI debt yield less than 8% by 24 months.

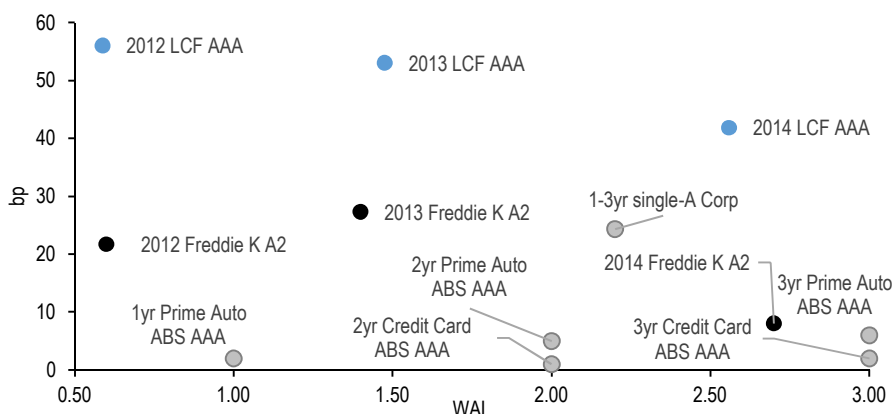
Our CPY ramp assumption applies 99.5%, 81.4%, 91.7%, and 78.2% CPY in the first four open months (realized CPY for 2012 vintages).

Source: J.P. Morgan, Intex, Pricing Direct

In addition, these shorter seasoned LCF AAAs offer decent spread pickup versus other short duration securitized products and corporates (**Exhibit 9**). Compared to seasoned Freddie K A2 bonds of the same vintage, 2012 and 2014 LCF AAAs can offer a generous 34bp spread pickup under the CPY ramp Flush and Extension scenario. These seasoned LCF AAAs look even more attractive versus credit card and prime auto AAAs where spreads remain in the mid to low single digits.

Exhibit 9: 2012-14 vintage LCF AAAs look attractive versus other short WAL securitized products and corporates

Cross sector spreads to swap (bp) versus WAL (yr)



Note: Conduit LCF AAA spreads reflect the CPY ramp Flush and Extension scenario.

Source: J.P. Morgan, Intex, Pricing Direct

In the news...

- Our Gaming & Lodging equity research colleagues published their latest *Lodging Weekly Trends* report, summarizing STR reported data on hotel RevPAR, ADR, and occupancy data for the week ended 9/4/2021 (see [here](#)). The data continued to show improvement in national RevPAR, increasing by 62% year-over-year. RevPAR for the week was 10% above the level during the

comparable period in 2019 driven by ADR 10% above the 2019 level. Group RevPAR remained at 70% of the 2019 level.

Rating tracker

Over the past two week, 59 bonds (including IOs, exchangeable classes and rake bonds) across 14 deals saw rating actions. 55 bonds across conduit and one large loan CMBS saw rating downgrades. **CD 2016-CD2** (CMBX S10) saw the most number of bonds downgraded in its capital structure, up to its D class, which was downgraded from B- to CCC by Fitch. The downgrades reflect the higher certainty of loss mainly driven by the *229 West 43rd Street Retail Condo* loan (8.4% of collateral). The loan, securitized by a retail condo in New York's Time Square with most tenants in the entertainment and tourism industries, "had already seen declines prior to the pandemic". Fitch projects 78% losses on the loan. Additionally, Fitch's loans of concern include "8 Times Square & 1460 Broadway (11.2%) due to co-working exposure, *Prudential Plaza* (8.2%) due to the loss of a large tenant and *Birch Run Premium Outlets* (5.1%) due to upcoming rollover concerns". Fitch expects 9.7% base case loss for the deal. Four SASB bonds were upgraded.

Exhibit 10: Summary of deals with rating actions over the past week

Summary of CMBS deals with ratings actions (upgrades and downgrades), August 27 to September 9, 2021

| Deal Name | Deal Type | CMBX | Upgrade (+) / Downgrade (-) | # of Bonds w/ Ratings Changes | Senior Most Bond w/ Ratings Changes | Notches | Rating Agency |
|----------------|-----------|------|--------------------------------|----------------------------------|--|---------|------------------|
| CD 2016-CD2 | Conduit | 10 | - | 7 | B- | 2-3 | Fitch |
| COMM 2012-CR1 | Conduit | 6 | - | 6 | AA+ | 2-5 | KBRA |
| GSMS 2015-GS1 | Conduit | 9 | - | 6 | A- | 2-3 | KBRA |
| MSBAM 2013-C7 | Conduit | N/A | - | 6 | Baa1 | 1-2 | Moody's |
| UBSBB 2013-C6 | Conduit | N/A | - | 6 | AA- | 2-3 | Fitch |
| CGCMT 2012-GC8 | Conduit | 6 | - | 5 | Aa3 | 1-5 | Moody's |
| UBSBM 2012-WRM | Other | N/A | - | 5 | A | 3-6 | Fitch |
| GSMS 2014-GC24 | Conduit | N/A | - | 4 | BBB- | 2-5 | KBRA |
| GSMS 2012-GCJ9 | Conduit | 6 | - | 3 | Baa3 | 1 | Moody's |
| JPMCC 2011-C5 | Conduit | N/A | - | 3 | B | 3-8 | DBRS Morningstar |
| MSJP 2015-HAUL | SASB | N/A | + | 3 | AA- | 3-4 | Fitch |
| JPMCC 2015-JP1 | Conduit | N/A | - | 2 | BB | 2-3 | Fitch |
| MSC 2011-C2 | Conduit | N/A | - | 2 | B1 | 2 | Moody's |
| AHT1 2018-KEYS | SASB | N/A | + | 1 | CCC | 2 | DBRS Morningstar |

Source: J.P. Morgan, Bloomberg Finance L.P., INTX

Primary market

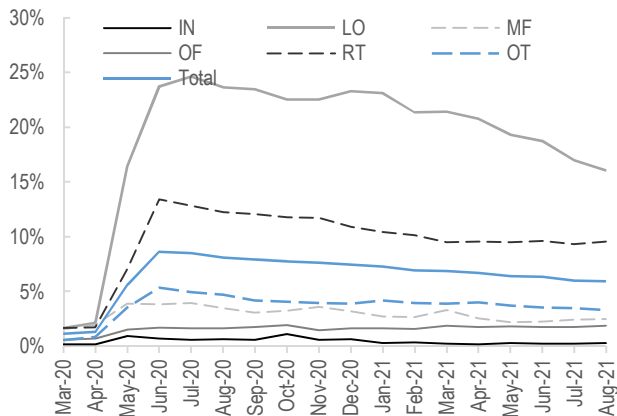
Since our last publication, three private label CMBS deals were priced including two SASB and a CRE CLO. **BWAY 2021-1450** (\$215mn), securitized by the office tower at 1450 Broadway, placed its AAA (DBRS) class at L+125 and its BBB- (DBRS) class at L+285 before Labor Day weekend. This week, **BPR 2021-TY** (\$425mn) placed its AAA (S&P/DBRS) class at L+105 and its BBB- (S&P) class at L+235. The deal is backed by Brookfield's refinancing of a super-regional mall, *Tysons Galleria* in McLean, VA. Trailing 12 month comparable in-line sales as of June 2021 stood at \$1416 PSF, up from \$1201 PSF in 2019. Also priced this week is a \$2.25bn managed CRE CLO, **MF1 2021-FL7**, the largest CRE CLO deal on record. The deal priced its AAA (Moody's/DBRS) class at L+108 and its BBB- (DBRS) class at L+280.

In agency issuance, pricing spreads tightened across the two deals priced. **FREMF 2021-KF120** (\$806mn) placed its AS class at SOFR+20. **FREMF 2021-K131** (\$1.3bn) places its A1, A2, and AM classes at S+7, S+18, and S+26, respectively.

Weekly Tracker

Exhibit T1: Delinquency rate

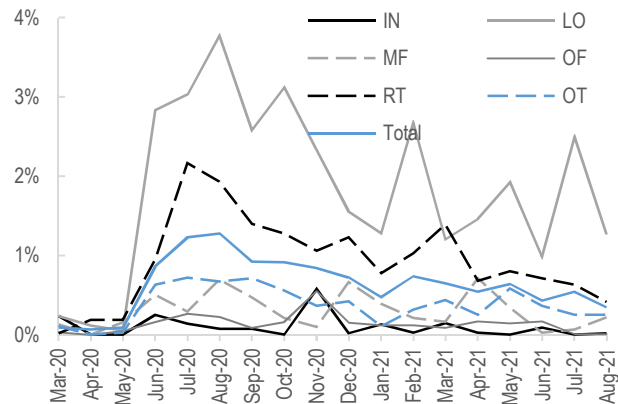
Conduit CMBS 30-day+ delinquency rate including FC/REO and NP matured (%)



Source: J.P. Morgan, Trepp

Exhibit T2: Delinquency cure rates

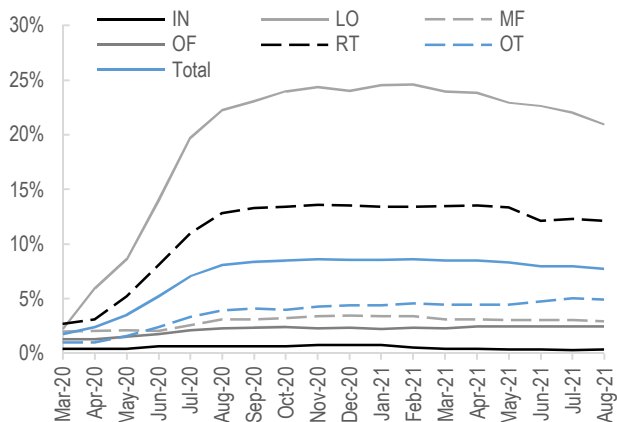
Conduit CMBS 30-day+ delinquency to performing transition rates (%)



Source: J.P. Morgan, Trepp

Exhibit T3: Specially serviced rate

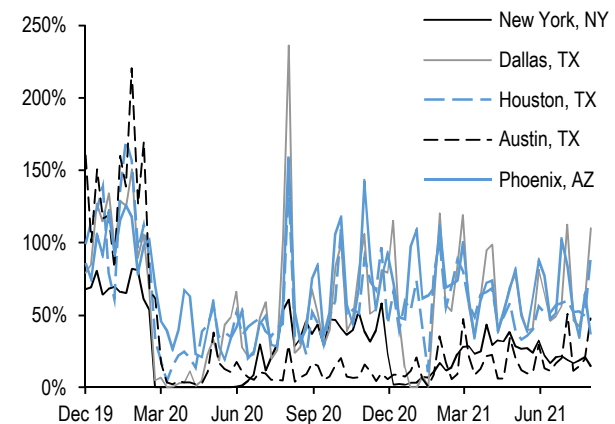
Conduit CMBS percentage of loans in special servicing (%)



Source: J.P. Morgan, Trepp

Exhibit T4: Eviction filings tracker

Weekly % eviction filings versus 2016-18 average for top 5 cities by GSE ACMBs outstanding



Source: J.P. Morgan, Trepp, DUS Disclose, Peter Hepburn, Renee Louis, and Matthew Desmond. Eviction Tracking System: Version 1.0. Princeton: Princeton University, 2020, www.evictionlab.org

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US Fixed Income Strategy
10 September 2021

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CMBX Series 6 Mall Loan Tracker

| Deal Name | Loan | Curr. Loan Bal. (\$mn) | Deceased | Current DLQ | Prior DLQ | WL | In SS | Loan Mod | Appraisal Date | Appraisal Chg. since U/W | As of Date |
|----------------|-------------------------------|------------------------|----------|-------------|-----------|----|-------|-------------------------|----------------|--------------------------|------------|
| WFRBS 2012-C10 | Animas Valley Mall | 43 | - | C | C | Y | - | Forbearance | Sep-12 | 0% | Aug-21 |
| UBSBB 2012-C3 | Apache Mall | - | - | PP/OPEN | PP/OPEN | - | - | - | Jul-12 | 0% | Aug-21 |
| JPMCC 2012-C6 | Arbor Place Mall | 103 | - | C | C | - | Y | - | Mar-12 | 0% | Aug-21 |
| JPMCC 2012-C8 | Battlefield Mall | 111 | - | C | C | - | - | - | Aug-12 | 0% | Aug-21 |
| GSMS 2012-GCJ7 | Bellis Fair Mall | 78 | - | C | C | Y | - | - | Nov-11 | 0% | Aug-21 |
| MSC 2012-C4 | Capital City Mall | 55 | Y | C | C | - | - | - | Jan-12 | 0% | Aug-21 |
| WFRBS 2012-C9 | Chesterfield Towne Center | 95 | - | C | C | - | - | - | Aug-12 | 0% | Aug-21 |
| COMM 2012-CR2 | Chicago Ridge Mall | 80 | - | C | C | Y | - | - | Apr-12 | 0% | Aug-21 |
| WFRBS 2012-C10 | Concord Mills | 110 | - | C | C | - | - | - | Sep-12 | 0% | Aug-21 |
| COMM 2012-CR1 | Crossgates Mall | 102 | - | C | C | Y | - | Forbearance | Jul-20 | -40% | Aug-21 |
| COMM 2012-CR2 | Crossgates Mall - A-1A1 note | 44 | - | C | C | Y | - | Forbearance | Jul-20 | -40% | Aug-21 |
| COMM 2012-CR2 | Crossgates Mall - A-1B1 note | 17 | - | C | C | - | - | Forbearance | Jul-20 | -40% | Aug-21 |
| COMM 2012-CR3 | Crossgates Mall - Note A-1A2 | 66 | - | C | C | Y | - | Forbearance | Jul-20 | -40% | Aug-21 |
| COMM 2012-CR3 | Crossgates Mall - Note A-1B2 | 25 | - | C | C | - | - | Forbearance | Jul-20 | -40% | Aug-21 |
| UBSBB 2012-C2 | Crystal Mall | 83 | - | FC/REO | FC/REO | - | Y | - | Nov-20 | -88% | Aug-21 |
| MSBAM 2012-C6 | Cumberland Mall | 40 | - | C | C | Y | - | Other | Jul-12 | 0% | Aug-21 |
| WFRBS 2012-C10 | Dayton Mall | 77 | - | 30 | C | - | Y | - | Dec-12 | 0% | Aug-21 |
| COMM 2012-CR4 | Eastview Mall and Commons | 120 | - | C | C | - | - | - | Jul-12 | 0% | Aug-21 |
| COMM 2012-CR5 | Eastview Mall and Commons | 90 | - | C | C | - | - | - | Jul-12 | 0% | Aug-21 |
| COMM 2012-CR3 | Emerald Square Mall | 63 | - | 90+ | FC/REO | - | Y | - | Oct-20 | -57% | Aug-21 |
| COMM 2012-CR4 | Emerald Square Mall | 33 | - | 90+ | FC/REO | - | Y | - | Oct-20 | -57% | Aug-21 |
| COMM 2012-CR4 | Fashion Outlets of Las Vegas | - | - | LIQ | LIQ | - | - | - | Jun-12 | 0% | Aug-21 |
| WFRBS 2012-C7 | Fashion Square | 32 | - | FC/REO | FC/REO | - | Y | - | Dec-20 | -72% | Aug-21 |
| WFRBS 2012-C7 | Florence Mall | 89 | - | FC/REO | FC/REO | - | Y | - | Jul-20 | -63% | Aug-21 |
| MSBAM 2012-C6 | Greenwood Mall | 58 | - | C | C | Y | - | - | Nov-20 | -56% | Aug-21 |
| COMM 2012-CR5 | Holiday Village Mall | - | - | RET | RET | - | - | - | Oct-12 | 0% | Aug-21 |
| JPMCC 2012-CBX | Jefferson Mall | 60 | - | C | C | - | Y | Other | Feb-21 | -66% | Aug-21 |
| UBSBB 2012-C2 | Louis Joliet Mall | 42 | - | FC/REO | FC/REO | - | Y | - | Sep-20 | -58% | Aug-21 |
| UBSBB 2012-C2 | Louis Joliet Mall | 42 | - | FC/REO | FC/REO | - | Y | - | Sep-20 | -58% | Aug-21 |
| COMM 2012-CR3 | Midland Park Mall | 71 | - | C | C | - | - | - | Jul-12 | 0% | Aug-21 |
| UBSBB 2012-C4 | Newgate Mall | 58 | - | FC/REO | FC/REO | - | Y | - | Nov-20 | -76% | Aug-21 |
| WFRBS 2012-C7 | Northridge Fashion Center | 131 | - | C | C | Y | - | Forbearance | Jan-12 | 0% | Aug-21 |
| WFRBS 2012-C8 | Northridge Fashion Center | 74 | - | C | C | Y | - | Forbearance | Jan-12 | 0% | Aug-21 |
| JPMCC 2012-C6 | Northwoods Mall | 61 | - | C | C | - | Y | - | Mar-12 | 0% | Aug-21 |
| UBSBB 2012-C2 | Pierre Bossier Mall | 41 | - | FC/REO | FC/REO | - | Y | - | Jun-21 | -85% | Aug-21 |
| UBSCM 2012-C1 | Poughkeepsie Galleria | 75 | - | 90+ | 90+ | - | Y | - | Nov-20 | -71% | Aug-21 |
| COMM 2012-CR1 | RiverTown Crossings Mall | 47 | - | NP | NP | - | Y | - | Nov-11 | 0% | Aug-21 |
| WFRBS 2012-C10 | Rogue Valley Mall | 49 | - | C | C | - | Y | - | Aug-12 | 0% | Aug-21 |
| JPMCC 2012-LC9 | Salem Center | 29 | - | FC/REO | FC/REO | - | Y | - | Oct-20 | -76% | Aug-21 |
| COMM 2012-CR3 | Solano Mall | 105 | - | 90+ | FC/REO | - | Y | - | Jul-20 | -42% | Aug-21 |
| UBSBB 2012-C2 | Southland Center Mall | 67 | - | C | C | - | - | - | Apr-12 | 0% | Aug-21 |
| JPMCC 2012-CBX | Southpark Mall | 56 | - | C | C | - | Y | Forbearance | Feb-21 | -61% | Aug-21 |
| MSC 2012-C4 | The Shoppes at Buckland Hills | 109 | - | 30 | C | - | Y | - | Feb-12 | 0% | Aug-21 |
| WFRBS 2012-C7 | Town Center at Cobb | 112 | - | FC/REO | FC/REO | - | Y | - | Aug-20 | -60% | Aug-21 |
| WFRBS 2012-C8 | Town Center at Cobb | 61 | - | FC/REO | FC/REO | - | Y | - | Aug-20 | -60% | Aug-21 |
| WFRBS 2012-C10 | Towne Mall | 20 | - | C | C | Y | - | - | Sep-12 | 0% | Aug-21 |
| UBSBB 2012-C4 | Visalia Mall | 74 | - | P | P | - | Y | Maturity Date Extension | Jun-21 | -22% | Aug-21 |
| JPMCC 2012-LC9 | West County Center | 115 | - | C | C | - | Y | - | Nov-12 | 0% | Aug-21 |
| UBSBB 2012-C2 | Westgate Mall | 31 | - | C | C | Y | - | - | May-12 | 0% | Aug-21 |
| WFCM 2012-LC5 | Westside Pavilion | 129 | Y | C | C | - | - | - | Aug-12 | 0% | Aug-21 |

Source: J.P. Morgan, Trepp

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US Fixed Income Strategy
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Cross-sector spreads

| Product | Tranche / Bucket | Current 9/9/21 | Changes | | | 5yr Trailing | | Percentile Rank | | |
|-------------------------------------|-------------------------|-------------------|---------|-----|------|--------------|-------|-----------------|-------|-------|
| | | | -1w | -1m | -1y | Min | Max | 3yr | 5yr | 7yr |
| Conduit CMBS Swap Spread (bp) | 3yr AAA | 20 | 0 | -2 | -43 | 16 | 450 | 15.5% | 20.6% | 9.6% |
| | 5yr AAA | 44 | 1 | -1 | -51 | 34 | 450 | 10.2% | 25.3% | 16.7% |
| | 10yr LCF AAA | 68 | 1 | 0 | -29 | 60 | 350 | 20.8% | 15.5% | 10.7% |
| | 10yr AS | 88 | 1 | 0 | -54 | 77 | 450 | 15.8% | 13.7% | 8.3% |
| | 10yr AA | 107 | 4 | 4 | -50 | 94 | 575 | 19.5% | 16.5% | 11.4% |
| | 10yr A | 145 | 5 | 5 | -118 | 127 | 750 | 14.6% | 12.8% | 8.5% |
| | 10yr BBB- | 305 | 10 | 15 | -235 | 225 | 1300 | 49.2% | 37.8% | 27.1% |
| | XA (UST) | 108 | 3 | -2 | -112 | 75 | 535 | 15.5% | 29.4% | 21.8% |
| Freddie K Swap Spread (bp) | 7yr A2 | 11 | -1 | -2 | -21 | 6 | 100 | 11.6% | 7.0% | 5.0% |
| | 10yr A2 | 18 | 2 | 1 | -17 | 10 | 110 | 17.4% | 10.5% | 7.5% |
| | 10yr B | 130 | 0 | 5 | -115 | 118 | 600 | 10.3% | 8.6% | 6.7% |
| | 10yr C | 155 | 0 | 5 | -140 | 140 | 700 | 12.8% | 7.4% | 5.3% |
| | X1 (UST) | 65 | 0 | -10 | -125 | 50 | 400 | 8.4% | 5.1% | 3.4% |
| | X3 (UST) | 260 | -5 | -10 | -165 | 220 | 695 | 36.1% | 25.0% | 20.9% |
| | SOFR Floater (DM) | 20 | -1 | -1 | N/A | 20 | 25 | 18.2% | 3.0% | 18.2% |
| | | | | | | | | | | |
| FRESB Swap Spread (bp) | A5H (5yr Hybrid ARM) | 5 | 0 | 0 | -48 | 2 | 112 | 6.5% | 7.2% | 7.2% |
| | A10F (10yr Fixed Rate) | 22 | 0 | 0 | -32 | 16 | 120 | 14.8% | 12.2% | 12.2% |
| Fannie DUS Swap Spread (bp) | 7/6.5 TBA | 14 | 0 | -1 | -20 | 7 | 110 | 16.8% | 9.8% | 7.6% |
| | 10/9.5 TBA | 26 | -2 | -1 | -14 | 14 | 135 | 18.7% | 11.3% | 8.1% |
| | SOFR SARM (DM) | 25 | 0 | 0 | N/A | 23 | 42 | 31.4% | 35.3% | 31.4% |
| Fannie ACES Swap Spread (bp) | 7yr A2 | 13 | -1 | -2 | -21 | 7 | 102 | 11.7% | 7.1% | 5.1% |
| | 10yr A2 | 20 | 2 | 1 | -19 | 12 | 120 | 18.7% | 11.3% | 7.9% |
| GNR PL Swap Spread (bp) | 3.5yr | 60 | 0 | -5 | -15 | 60 | 100 | 0.6% | 0.4% | 0.3% |
| | 7.5yr | 75 | 0 | 0 | -20 | 75 | 125 | 18.1% | 12.5% | 8.9% |
| | 12yr | 80 | 0 | 0 | -30 | 80 | 140 | 5.2% | 3.5% | 2.5% |
| Current Coupon Spec Pool | FNMA 30yr (OAS) | -1 | -3 | 1 | -26 | -19 | 129 | 19.4% | 11.6% | 8.3% |
| | FNMA 30yr 2.0 HLB (OAS) | 8 | -2 | 0 | -22 | -10 | 46 | 42.4% | 42.4% | 42.4% |
| Agency CMO SEQ Swap Spread (bp) | 5yr | 66 | 0 | 5 | -6 | 50 | 190 | 0.7% | 20.3% | 15.7% |
| | 10yr | 77 | 0 | 9 | -13 | 65 | 200 | 12.1% | 16.5% | 12.4% |
| Agency CMO PAC Swap Spread (bp) | 5yr | 68 | 0 | 5 | -7 | 54 | 165 | 4.3% | 43.2% | 36.6% |
| | 10yr | 77 | 0 | 9 | -18 | 65 | 175 | 12.1% | 30.5% | 25.4% |
| Agency CMO Floater 6.5% Cap (DM) | Pre-HARP | 18 | 0 | -1 | -2 | 12 | 70 | 17.7% | 10.9% | 7.8% |
| | New Issue | 17 | 0 | 0 | -6 | 15 | 80 | 5.7% | 3.9% | 3.9% |
| ABS Swap Spread (bp) | 3yr AAA Credit Card | 2 | 0 | 0 | -13 | 2 | 200 | 2.8% | 1.7% | 1.2% |
| | 3yr AAA Prime Auto | 4 | -2 | -2 | -21 | 4 | 200 | 0.1% | 0.1% | 0.1% |
| | 3yr BBB Subprime Auto | 65 | -2 | -2 | -95 | 63 | 550 | 4.8% | 2.9% | 2.1% |
| CLO Discount Margin | AAA | 112 | 0 | 0 | -25 | 84 | 408 | 5.3% | 23.9% | 17.1% |
| | BBB | 342 | 0 | 2 | -112 | 257 | 972 | 17.2% | 32.9% | 23.5% |
| | BB | 699 | 0 | 1 | -233 | 510 | 1,756 | 28.3% | 54.5% | 50.1% |
| JULI (ex-EM) Swap Spread (bp) | 3-5yr | 54 | -1 | -3 | -39 | 49 | 396 | 4.2% | 2.8% | 2.0% |
| | 5-7yr | 75 | -1 | -2 | -42 | 67 | 372 | 5.0% | 3.0% | 2.1% |
| | 7-10yr | 94 | 0 | -2 | -46 | 88 | 378 | 5.3% | 3.3% | 2.4% |
| | 7-10yr REITs | 103 | -1 | 1 | -76 | 99 | 346 | 3.9% | 2.3% | 1.7% |
| High Yield Spread to Worst (bp) | Domestic HY | 378 | -4 | -27 | -206 | 355 | 1,139 | 1.9% | 4.3% | 3.0% |
| | Energy | 462 | -11 | -44 | -493 | 399 | 2,395 | 3.5% | 18.3% | 13.1% |
| Swap Spreads (bp) | 3yr | 11 | -1 | 1 | 3 | -6 | 31 | 75.9% | 0.0% | 0.0% |
| | 5yr | 9 | 0 | 1 | 2 | -8 | 16 | 85.1% | 0.0% | 0.0% |
| | 10yr | 3 | 1 | 2 | 2 | -17 | 10 | 80.9% | 0.0% | 0.0% |

| Spread Comparison | | Current | Average Basis | | | 5yr Trailing | | Percentile Rank | | |
|-------------------|---|---------|---------------|------|------|--------------|------|-----------------|-------|-------|
| | | 9/9/21 | 2y | 1y | 3m | Min | Max | 3yr | 5yr | 7yr |
| Private Label | Conduit 3yr AAA vs. 3yr AAA Credit Card | 18 | 32 | 16 | 18 | 0 | 250 | 66.1% | 79.2% | 78.6% |
| | Conduit 3yr AAA vs. 3yr AAA Prime Auto | 16 | 24 | 12 | 15 | -4 | 250 | 73.2% | 84.5% | 80.3% |
| | Conduit 5yr AAA vs. JULI 3-5yr | -10 | -17 | -14 | -10 | -94 | 54 | 85.8% | 91.5% | 93.6% |
| | Conduit 10yr LCF AAA vs. JULI 7-10yr | -26 | -43 | -35 | -28 | -127 | -24 | 98.7% | 99.2% | 99.5% |
| | Conduit 10yr LCF AAA vs. Freddie K 10yr A2 | 50 | 51 | 48 | 50 | 15 | 165 | 68.9% | 80.2% | 78.5% |
| | Conduit 10yr BBB- vs. Domestic HY | -73 | -81 | -79 | -109 | -552 | 448 | 72.3% | 61.6% | 62.7% |
| | Conduit 10yr BBB- vs. CLO BBB | -37 | 24 | -9 | -60 | -222 | 630 | 51.0% | 32.2% | 29.5% |
| | Conduit 10yr BBB- vs. CLO BB | -394 | -415 | -396 | -420 | -1,006 | -121 | 57.2% | 34.2% | 24.9% |
| | Conduit CMBS XA vs. Freddie K X1 | 43 | 24 | 26 | 36 | -45 | 200 | 84.1% | 90.9% | 90.7% |
| Agency CMBS | FNA DUS 10/9.5 TBA vs. Freddie K 10yr A2 | 8 | 6 | 6 | 7 | 0 | 25 | 70.3% | 80.1% | 68.2% |
| | FNA DUS 10/9.5 TBA vs. FNMA 30yr CC LOAS | 27 | 26 | 30 | 25 | 5 | 83 | 39.4% | 27.7% | 19.8% |
| | Freddie K 10yr A2 vs. JULI 7-10yr | -76 | -95 | -83 | -78 | -267 | -51 | 71.0% | 46.9% | 60.9% |
| | FRESB A10F vs. Freddie K 7yr A2 | 11 | 16 | 10 | 11 | 6 | 41 | 25.8% | 23.3% | 24.4% |
| | FRESB A10F vs. Freddie K 10yr A2 | 4 | 10 | 5 | 7 | -2 | 25 | 12.3% | 9.4% | 10.6% |
| | Freddie K SOFR Floater vs. Agency CMO Floater | 3 | 4 | 4 | 3 | 1 | 13 | 25.0% | 9.4% | 25.0% |

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US Fixed Income Strategy
10 September 2021

J.P.Morgan

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Cross-sector spreads (continued)

| Product | Tranche / Bucket | Current 9/9/21 | Changes | | | 5yr Trailing | | Percentile Rank | | |
|-----------|------------------|-------------------|---------|-----|-------|--------------|-------|-----------------|--------|--------|
| | | | -1w | -1m | -1y | Min | Max | 3yr | 5yr | 7yr |
| CMBX (bp) | 14.AAA | 49 | 0 | 0 | N/A | 45 | 52 | 63.8% | 63.8% | 63.8% |
| | 13.AAA | 47 | 0 | 1 | -12 | 42 | 167 | 36.2% | 36.2% | 36.2% |
| | 12.AAA | 41 | 0 | 1 | -8 | 37 | 162 | 26.6% | 26.6% | 26.6% |
| | 11.AAA | 36 | 0 | 1 | -3 | 32 | 146 | 29.2% | 23.2% | 23.2% |
| | 10.AAA | 32 | 0 | 1 | -1 | 26 | 141 | 29.8% | 18.5% | 18.5% |
| | 9.AAA | 26 | 0 | 0 | -2 | 21 | 127 | 22.4% | 13.4% | 11.4% |
| | 8.AAA | 20 | 0 | 1 | -4 | 18 | 117 | 17.3% | 10.3% | 7.5% |
| | 7.AAA | 18 | 0 | 0 | -2 | 15 | 107 | 24.5% | 14.7% | 10.5% |
| | 6.AAA | 18 | 1 | 2 | -1 | 11 | 103 | 49.0% | 29.4% | 21.0% |
| | 14.BBB- | 343 | 1 | 1 | N/A | 320 | 373 | 40.6% | 40.6% | 40.6% |
| | 13.BBB- | 374 | 0 | 1 | -167 | 339 | 1,151 | 17.6% | 17.6% | 17.6% |
| | 12.BBB- | 378 | 0 | -2 | -239 | 309 | 1,083 | 21.9% | 21.9% | 21.9% |
| | 11.BBB- | 384 | 1 | -2 | -259 | 302 | 1,109 | 37.0% | 30.3% | 30.3% |
| | 10.BBB- | 489 | -4 | -9 | -248 | 297 | 1,052 | 46.9% | 67.0% | 67.0% |
| | 9.BBB- | 510 | -2 | -8 | -352 | 301 | 1,162 | 50.3% | 66.7% | 56.8% |
| | 8.BBB- | 777 | -1 | 1 | -288 | 345 | 1,454 | 49.7% | 69.9% | 78.2% |
| | 7.BBB- | 1,254 | 10 | 31 | 20 | 281 | 1,402 | 89.4% | 93.7% | 95.5% |
| | 6.BBB- | 3,644 | 101 | 387 | 1,214 | 391 | 3,644 | 100.0% | 100.0% | 100.0% |
| | 14.BB | 582 | -1 | 1 | N/A | 568 | 639 | 27.5% | 27.5% | 27.5% |
| | 13.BB | 651 | -2 | 3 | -370 | 609 | 1,782 | 24.7% | 24.7% | 24.7% |
| | 12.BB | 669 | 0 | -1 | -443 | 578 | 1,893 | 23.4% | 23.4% | 23.4% |
| | 11.BB | 671 | 0 | 1 | -548 | 572 | 1,991 | 25.8% | 21.2% | 21.2% |
| | 10.BB | 1,073 | 2 | -12 | -536 | 602 | 2,194 | 48.5% | 68.1% | 68.1% |
| | 9.BB | 1,112 | -2 | -4 | -650 | 574 | 2,292 | 48.3% | 69.1% | 73.5% |
| | 8.BB | 1,998 | 8 | 12 | -389 | 756 | 3,561 | 70.5% | 82.3% | 87.2% |
| | 7.BB | 2,571 | 16 | 25 | 72 | 613 | 3,005 | 91.6% | 95.0% | 96.4% |
| | 6.BB | 6,361 | 104 | 456 | 2,140 | 773 | 6,361 | 100.0% | 100.0% | 100.0% |
| CDX (bp) | 5yr IG | 47 | 1 | -1 | 4 | 13 | 114 | 62.9% | 77.7% | 76.5% |
| | 5yr HY | 272 | 1 | -9 | -136 | 263 | 905 | 2.7% | 1.6% | 1.4% |

Source: J.P. Morgan, IHS Markit

Note: Conduit 10yr BBB- reflects pre-COVID 10yr BBB-

Recent Publications

| Publication Date | Publication title | Frequency |
|------------------|--|-----------|
| | CMBS Weekly | |
| 27-Aug | CMBS Weekly: Agency CMBS bank holdings | |
| 20-Aug | CMBS Weekly: FHFA 2022-24 Housing Goal | |
| 6-Aug | CMBS Weekly: Q2 2021 CRE fundamentals update | |
| 30-Jul | CMBS Weekly: Remit update – recovery continues but slowing | |
| 16-Jul | CMBS Weekly: Pick value in seasoned 10yr front-pay AAAs | |
| 9-Jul | CMBS Weekly: Asset manager demand expands | |
| 25-Jun | CMBS Weekly: CMBS Midyear Outlook | |
| 18-Jun | CMBS Weekly: Assessing CRE CLO manager reinvestment efficacy | |
| 11-Jun | CMBS Weekly: CMBX continues to offer better relative value | |
| 4-Jun | CMBS Weekly: FHFA Agency CMBS risk management guidelines - what premium risk? | |
| 21-May | CMBS Weekly: Time to go long CMBX BBB-10? | |
| 14-May | CMBS Weekly: Q1 2021 CRE fundamentals update | |
| 7-May | CMBS Weekly: CMBS BWIC review – a passing of the torch? | |
| 30-Apr | CMBS Weekly: Ratings actions post pandemic: steady as she goes | |
| 23-Apr | CMBS Weekly: 2021 issuance forecast update | |
| 16-Apr | CMBS Weekly: 1Q 2021 CMBS investor demand | |
| 9-Apr | CMBS Weekly: 1Q 2021 CMBS underwriting trend | |
| 26-Mar | CMBS Weekly: Does the potential extension of the CDC moratorium matter for CMBS? | |
| 19-Mar | CMBS Weekly: Performance post-forbearance surprises to the upside | |
| 12-Mar | CMBS Weekly: Conduit CMBS loan cashflows - retail held up better than expected | |
| 5-Mar | CMBS Weekly: Watchlist loans - do they even matter? | |
| 26-Feb | CMBS Weekly: Loan modifications - it's different this time or is it? | |
| 19-Feb | CMBS Weekly: Rising rates impact on CRE/CMBS and CRE fundamentals update | |
| 5-Feb | CMBS Weekly: FRESB X1s and an ESG update | |
| 29-Jan | CMBS Weekly: CRE CLO update and levered CMBX vs. CMBS returns | |
| 22-Jan | CMBS Weekly: Re-defaults and interest shortfalls | |
| 8-Jan | CMBS Weekly: Blue Wave implications and 2020 indices | |
| 18-Dec | CMBS Weekly: Strong finish to a tough year | |
| 11-Dec | CMBS Weekly: Time to short CMBX BBB-9? | |
| 13-Nov | CMBS Weekly: It's going to get worse before it gets better | |
| 6-Nov | CMBS Weekly: Issuance forecast for 2021 private label CMBS | |
| 30-Oct | CMBS Weekly: Will office loans just roll over? | |
| 23-Oct | CMBS Weekly: What are the latest remits telling us? | |
| | Other periodicals | |
| 10-Sep | CMBX Daily Analytics | Daily |
| 7-Sep | CMBS Weekly Datasheet | Weekly |
| 8-Sep | CMBX Trade Analytics | Weekly |
| 2-Sep | Conduit CMBS and CMBX Credit Monthly | Monthly |
| 7-Sep | Agency CMBS Databook | Monthly |
| 26-Aug | CRE Observer Chartbook | Quarterly |
| 4-Feb | CMBS Relative Value | Monthly |
| 10-Sep | Agency CMBS Bulletin | Monthly |
| 11-Oct | CMBS Comp Sheet | Quarterly |
| 3-Jul | What's Out There | Quarterly |
| | Ad-hoc publications of note | |
| 8-Sep | Introducing the Freddie Mac When-Issued (WI) K-Deal® | |
| 15-Jan | CMBX Series 14: Thoughts on the preliminary list | |
| 4-Jan | 2020 NAIC breakpoint update | |
| 24-Nov | CMBS 2021 Outlook: A vaccine doesn't make loan payments | |
| 17-Sep | That's why they call BBB- the fulcrum bond | |
| 30-Jul | You break it, you own it | |
| 14-May | The \$600 question: Why are rent collections so high? | |
| 9-Apr | TALF 2.0: CMBS, CLO expansion pack and update on funding terms | |
| 12-Feb | CMBS Foundations: Freddie Mac Multi PC | |
| 17-Jan | Flashnote:.... Thoughts from CREFC | |

Source: J.P. Morgan

Asset-Backed Securities

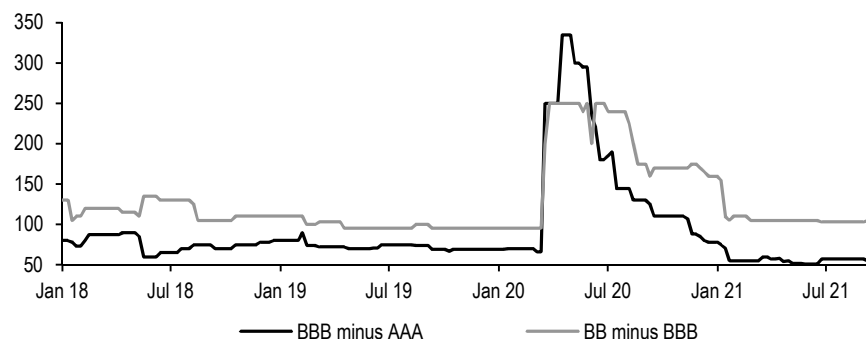
- **Strong technical momentum carries with tighter spreads this week as the primary ABS market fires up once again**
- **Marketplace lending (MPL) ABS has a short and limited history, but a very positive credit story as evident in the upward rating migrations**
- **We believe the MPL ABS sector offers attractive spread pickup over comparable consumer ABS**

ABS spreads tighten on the week as the quarter-end issuance calendar fills up

The floodgates have opened on September ABS issuance this week. Although only two deals made it to the finishing line and priced this week, a slew of transactions are on deck and the order books seem to be filling up rapidly as well towards oversubscription. Across ABS asset classes, sponsors continue to find lowest cost of funding as well as often tightest spreads, on their ABS offerings throughout this year. In secondary, flows started out slow this week, but the pickup in primary market activity should spill over and generate more interest. ABS spreads tightened this week on signs of favorable technical momentum. The issuance pace will likely remain brisk through autumn until the winter holiday season. We expect investor demand should be robust enough to absorb the upcoming supply. We also continue to see strong investor demand for spread pickup in higher yielding ABS. Credit curves remain quite flat. For example, BBB 3-year subprime auto loan ABS spreads tightened by 2bp this week to swaps +65bp, a pickup of 55bp on the AAA2-year level. This differential was roughly 70bp in February 2020 (**Exhibit 1**). The BB to BBB spread differential in subprime auto loan ABS stands at 105bp versus as tight as 95bp pre-pandemic. In addition, we have also seen strong demand and pricing for new/off-the-run sponsors, assets, and structures.

Exhibit 1: Subprime auto loan ABS credit curve quite flat

ABS spread differential (bp)



Source: J.P. Morgan

MPL ABS offering rating upgrade potential and spread pickup

We review the short, but very positive, credit rating history of MPL ABS. Aside from the unprecedented COVID-19 pandemic, the MPL ABS sector has not been through a “normal” economic recession as the major fintechs only launched ABS programs in 2016. Since then, the sector has seen \$36bn in total issuance, including \$3.6bn year-to-date, \$4.0bn in 2020 and \$8.5bn in 2019. Despite significant concerns last year due to the pandemic lockdowns, the rating transition over this period has been overwhelmingly positive with many upgrades and just one downgrade. The positive rating patterns found in MPL ABS is similar to those seen in the auto loan ABS sector. Both sectors have seen regular rating upgrades from rating agencies with extremely limited cases of downgrades as the sequential pay structures with non-declining credit enhancement protect ABS bondholders.

First on MPL ABS ratings, we note that KBRA is the dominant rating agency in the sector, having rated almost 90% of all rated offerings by dollar amount and was sole rating agency on about half of the total. DBRS is a distant second with roughly one-third market share, while S&P, Moody's and Fitch trails in rated volumes. However, the lone downgrade in the sector came from Moody's on FREED 2020-FP1 class C in September 2020 when the bond was lowered to B1 from the original Ba3 given the pandemic uncertainty and risk of higher losses after the initial COVID-19 deferral period. KBRA placed its BB rating on the FREED bond on watch for downgrade in April 2020 and affirmed its BB rating in September 2020. FREED was part of a bigger review KBRA conducted on the MPL ABS sector due to COVID-19.

In April 2020 on unsecured consumer ABS, KBRA put 149 securities totaling \$8.7bn on Watch Downgrade and 20 securities totaling \$1.4bn on Watch Developing due to the pandemic. None of the bonds ended up being downgraded by KBRA as government stimulus and relief programs supported consumers, keeping delinquencies and losses mostly in line, and credit enhancement built up continued as MPL ABS bonds de-levered. MPL ABS may include net loss triggers, which typically uses excess spread to increase required overcollateralization/turbo payment to bondholders if losses go above pre-set thresholds. MPL ABS structures, like auto ABS ones, can tolerate higher losses than expected with still positive rating migrations, as long as the bonds are paying off, the transaction de-levering (helped by fast prepayments) and credit enhancement building faster than losses are eating up the pool.

By our estimates, KBRA has upgraded 185 unique MPL ABS tranches since 2016, roughly 60% by rated tranche count (or roughly 70% of initial rated dollar amount). Likewise, the other rating agencies have also upgraded most of their rated securities. DBRS and S&P both with roughly 60% upgraded and Moody's and Fitch at about 55%. With KBRA, the most active rating agency in MPL ABS, 44 bonds were upgraded to AAA (**Exhibit 2**). In addition, 37 bonds with original ratings in the BB and B categories were upgraded, including 26 to investment grade ratings (i.e., BBB- and higher). For the most part, more recent vintages from MPL ABS issuers have seen a bit faster upgrade timeline from KBRA as well. For example, CLUB bonds from the 2020 vintage on average was first upgraded by KBRA in 13 months versus CLUB 2019 and 2018 vintage bonds upgraded in 15 months and 19 months, respectively (**Exhibit 3**). Bonds with higher initial ratings also took relatively less time to get upgraded than subordinates (**Exhibit 4**).

Exhibit 2: KBRA MPL ABS rating actions from 2016 thru Sept 3, 2021

Count of unique bonds

| Original Rating | New Rating | | | | | | | | | | | | | Total |
|-----------------|------------|-----|----|-----|----|----|----|------|-----|------|-----|----|-----|-------|
| | AAA | AA+ | AA | AA- | A+ | A | A- | BBB+ | BBB | BBB- | BB+ | BB | BB- | |
| AA+ | 8 | | | | | | | | | | | | | 8 |
| AA | 11 | 3 | | | | | | | | | | | | 14 |
| AA- | 1 | | | | | | | | | | | | | 1 |
| A+ | 2 | 3 | | 4 | | | | | | | | | | 9 |
| A | 10 | 11 | 5 | 4 | 1 | | | | | | | | | 31 |
| A- | 2 | 4 | 7 | 4 | 4 | 4 | | | | | | | | 25 |
| BBB+ | 1 | | | | | | | | | | | | | 1 |
| BBB | 7 | 7 | 5 | 2 | 8 | 4 | 2 | 1 | | | | | | 35 |
| BBB- | 1 | 1 | 3 | 1 | 2 | 6 | 3 | 1 | 5 | | | | | 23 |
| BB | 1 | 1 | 2 | | 1 | 2 | 1 | 2 | 2 | 3 | 2 | | | 17 |
| BB+ | | | | | | 1 | | | | | | | | 1 |
| BB- | | | | 1 | 1 | | 1 | 1 | 3 | 3 | 1 | 4 | | 15 |
| B+ | | | | | | | | | | | | | 2 | 2 |
| B- | | | | | | | | | | | 1 | | 1 | 2 |
| Total | 44 | 30 | 22 | 16 | 17 | 17 | 7 | 5 | 10 | 6 | 4 | 4 | 3 | 185 |

Source: J.P. Morgan, KBRA

Exhibit 3: Average number of months to first rating upgrade from KBRA on MPL ABS by issuer and vintage

| Issuer | Vintage | | | | |
|--------|---------|------|------|------|------|
| | 2016 | 2017 | 2018 | 2019 | 2020 |
| ARCT | | 22 | | | |
| AVNT | 17 | 13 | 14 | 14 | |
| CHAI | 20 | | | | |
| CLUB | | 17 | 19 | 15 | 13 |
| CSABS | | | 19 | | |
| FREED | | | | 15 | 13 |
| LCIT | 15 | | | | |
| LDPT | | | | 13 | |
| LLEND | | | | 21 | |
| MFT | 18 | 18 | 19 | 21 | |
| PMIT | | 16 | 13 | 11 | |
| SCLP | 12 | 16 | 13 | | |
| THRM | | | | | 12 |
| UPGR | | | 16 | 20 | |
| UPST | | 19 | 24 | 21 | 15 |

Source: J.P. Morgan, KBRA

Exhibit 4: Average number of months to first rating upgrade from KBRA on MPL ABS by issuer and original rating

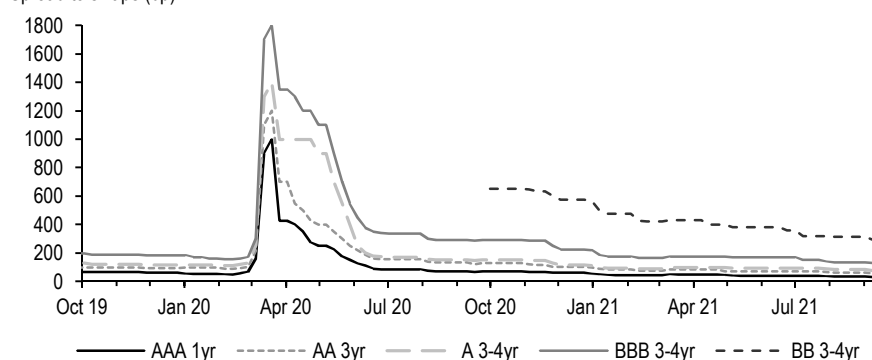
| | Original Rating | | | | |
|-------|-----------------|----|-----|----|----|
| | AA | A | BBB | B | B |
| ARCT | | | 18 | 25 | |
| AVNT | | 11 | 13 | 20 | |
| CHAI | | 15 | 15 | 28 | |
| CLUB | | 15 | 17 | 21 | |
| CSABS | | | 19 | 19 | |
| FREED | 12 | 12 | 15 | | |
| LCIT | | | 12 | 18 | |
| LDPT | | 12 | 14 | | |
| LLEND | | | 21 | 21 | |
| MFT | 17 | 18 | 21 | 25 | |
| PMIT | | 10 | 15 | 15 | 21 |
| SCLP | 16 | 13 | 15 | | |
| THRM | | 12 | 12 | | |
| UPGR | | 12 | 16 | 22 | |
| UPST | | 16 | 16 | 26 | 39 |

Source: J.P. Morgan, KBRA

The positive rating actions supports the spread outperformance seen in MPL ABS this year. MPL ABS spread across the capital structure are at their all-time tights, tighter than pre-pandemic (**Exhibit 5**). For example, our indicative AAA 1-year MPL ABS spreads stands at 30bp, compared to 50bp in early February 2020. At the other end of the credit spectrum, our indicative BB 3-4 year MPL ABS spreads stands at 290bp, having tightened 360bp since the data series inception just about one year ago. Furthermore, the MPL ABS sector continues to offer spread pickup on comparable subprime auto loan ABS (**Exhibit 6**). On BB's, MPL ABS is 120bp cheaper than comparable subprime auto ABS, the smallest differential ever. BBB MPL ABS currently offers 65bp pickup on subprime auto ABS, versus the narrowest point of 40bp back in April 2018. On the more senior tranches, the AAA, AA and A spread pickup in MPL over subprime auto stand at 22bp, 25bp and 30bp.

Exhibit 5: MPL ABS spreads at all-time tights across the capital structure

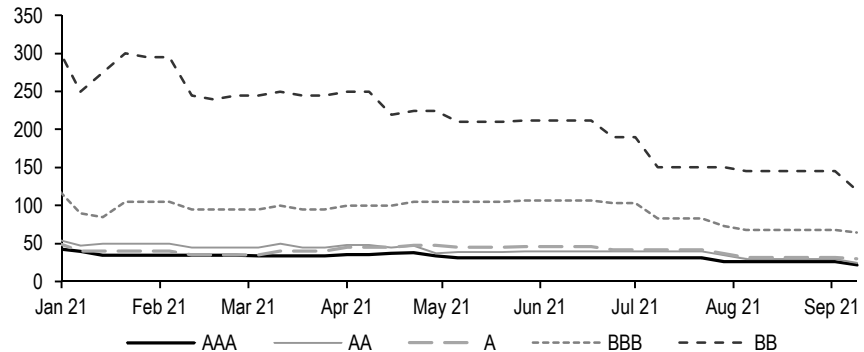
Spread to swaps (bp)



Source: J.P. Morgan

Exhibit 6: MPL ABS offer spread pickup on comparable subprime auto ABS

Spread differential in MPL ABS over comparable rated/WAL subprime auto ABS (bp)



Source: J.P. Morgan

We recognized that the MPL ABS sector has limited track record versus subprime auto loan ABS and lower liquidity/less outstandings. However, the structural protections are sound and the rating/credit outlook remains favorable. MPL ABS pools are backed by predominately prime consumers. While consumer credit delinquencies and losses are expected to rise as stimulus impact fades, household balance sheets have been fortified with pandemic savings/debt pay down. Sustained economic recovery and labor market recovery ahead, absent exogenous derailment (e.g., due to Delta or other variant surge, tapering angst, or other shocks), bode well for continued positive rating migration and spread performance for MPL ABS over the rest of this year and into next.

Week in review

One \$1.25bn auto lease ABS, with spread execution well inside of initial guidance levels, priced this week along with a small \$198mn FFELP ABS. This brings year-to-date ABS supply to \$174bn versus \$121 and \$164bn over the same period in 2020 and 2019, respectively. Over fifteen ABS transaction are already in the pipeline of the next two weeks. ABS spreads tightened this week with indications of strong demand from investors eagerly anticipating the new issues. On the week, consumer ABS spreads are tighter by about 1-5bp on AAAs and 2-5bp tighter on various subordinates across credit cards, autos, private credit student loans and MPL.

On September 1st, Stellantis, the global OEM for Fiat Chrysler and Peugeot, announced a definitive agreement to acquire First Investor in an all cash deal of approximate \$285mn from an investor group led by Gallatin Point. The acquisition will provide Stellantis with a US captive to provide financing options to its customer, including loan, lease and floorplan. Stellantis existing contract with Santander Consumer USA expires on April 30, 2023. The two companies will continue their partnership until that time and explore prospects beyond.

Data appendix

Exhibit 1: ABS supply

\$bn

| | 2018 | 2019 | 2020 | 2019 YTD | 2020 YTD | 2021 YTD |
|--------------------|------|------|------|-------------|-------------|-------------|
| Credit Cards | 36 | 24 | 4 | 20.1 | 2.5 | 8.2 |
| Bank/Charge | 32 | 21 | 4 | 16.8 | 2.3 | 7.7 |
| Retail | 4 | 3 | 0 | 3.3 | 0.1 | 0.5 |
| Autos | 104 | 111 | 98 | 84.6 | 67.6 | 92.1 |
| Prime Loan | 46 | 49 | 46 | 36.8 | 34.6 | 31.0 |
| Subprime Loan | 32 | 30 | 27 | 22.9 | 17.7 | 29.9 |
| Lease | 15 | 21 | 19 | 16.0 | 11.1 | 20.2 |
| Fleet | 10 | 10 | 5 | 8.5 | 3.7 | 9.8 |
| Motorcycle/Truck | - | 1 | 1 | 0.5 | 0.5 | 1.2 |
| Student Loans | 18 | 14 | 17 | 10.0 | 12.7 | 17.1 |
| FFELP | 9 | 7 | 5 | 3.6 | 2.7 | 5.5 |
| Private Credit | 9 | 7 | 12 | 6.3 | 10.0 | 11.6 |
| Equipment | 14 | 19 | 13 | 12.0 | 10.3 | 14.1 |
| Floorplan | 10 | 9 | 4 | 5.4 | 1.4 | 0.5 |
| Unsecured Consumer | 12 | 15 | 9 | 9.3 | 5.8 | 9.8 |
| Miscellaneous | 35 | 37 | 32 | 22.4 | 21.1 | 31.8 |
| Total ABS | 229 | 229 | 175 | 163.9 | 121.4 | 173.6 |
| % 144A | 54% | 55% | 56% | 53% | 56% | 62% |
| % Floating-rate | 15% | 9% | 4% | 9% | 4% | 5% |

Source: J.P. Morgan

Exhibit 3: Other ABS supply

\$bn

| | 2017 | 2018 | 2019 | 2020 | 2021 YTD |
|----------------------|------|------|------|------|-------------|
| Franchise/Whole Bus. | 7.4 | 6.1 | 9.1 | 4.8 | 9.6 |
| Aircraft | 5.4 | 7.4 | 9.2 | 2.6 | 4.5 |
| Device Payment | 4.0 | 2.8 | 3.8 | 4.4 | 1.7 |
| Timeshare | 2.4 | 3.0 | 3.5 | 1.9 | 1.2 |
| Solar | 1.4 | 2.1 | 1.9 | 2.7 | 1.9 |
| Railcar | 0.6 | 0.7 | 1.9 | 0.5 | 2.8 |
| SBL | 0.6 | 0.2 | 1.6 | 0.4 | 0.4 |
| Insurance | 1.2 | 1.9 | 0.8 | 2.2 | 1.1 |
| Containers | 2.8 | 2.4 | 0.7 | 7.3 | 5.2 |
| Taxes | 0.1 | 0.4 | 0.3 | - | 0.5 |
| Healthcare | | | 0.3 | 0.4 | |
| Stranded Ast | | 0.6 | 0.2 | - | 0.1 |
| Trade Rec. | 0.5 | 0.6 | 0.2 | - | 0.3 |
| Infrastructure | | 0.1 | | - | |
| Royalties | | | | - | |
| Miscellaneous | 3.1 | 7.4 | 3.2 | 4.5 | 2.4 |
| Total Other ABS | 29.5 | 35.4 | 36.6 | 31.7 | 31.8 |

Source: J.P. Morgan

Exhibit 2: ABS spread performance

bp

| | Bench mark | Current 9/10/21 | 1-week Change | 10-week Avg | Min | Max |
|------------------------------------|---------------|--------------------|------------------|----------------|-----|-----|
| Credit Card - Fixed Rate | | | | | | |
| 2-yr AAA | Swaps | 1 | 0 | 1 | 1 | 1 |
| 3-yr AAA | Swaps | 2 | 0 | 2 | 2 | 4 |
| 5-yr AAA | Swaps | 16 | -1 | 17 | 16 | 17 |
| 10-yr AAA | Swaps | 43 | -1 | 44 | 43 | 44 |
| B-Piece (5-yr) | Swaps | 41 | 2 | 39 | 39 | 41 |
| C-Piece (5-yr) | Swaps | 57 | 2 | 55 | 55 | 57 |
| Credit Card - Floating Rate | | | | | | |
| 2-yr AAA | Libor | 8 | 0 | 8 | 8 | 8 |
| 3-yr AAA | Libor | 11 | 0 | 11 | 11 | 13 |
| 5-yr AAA | Libor | 28 | 0 | 28 | 28 | 28 |
| 10-yr AAA | Libor | 50 | -3 | 53 | 50 | 53 |
| B-Piece (5-yr) | Libor | 43 | 0 | 43 | 43 | 43 |
| C-Piece (5-yr) | Libor | 68 | 0 | 68 | 68 | 68 |
| Auto - Prime | | | | | | |
| 1-yr AAA | EDSF | 2 | 0 | 2 | 2 | 2 |
| 2-yr AAA | Swaps | 4 | -1 | 5 | 4 | 5 |
| 3-yr AAA | Swaps | 4 | -2 | 6 | 4 | 6 |
| 3-yr AA | Swaps | 25 | 0 | 25 | 25 | 25 |
| Student Loans (FFELP) | | | | | | |
| 3-yr AAA | Libor | 37 | 0 | 37 | 37 | 37 |
| 7-yr AAA | Libor | 60 | 0 | 60 | 60 | 60 |
| Private Credit Student Loan | | | | | | |
| 3-yr AAA | Libor | 50 | -2 | 52 | 50 | 54 |
| Unsecured Consumer MPL | | | | | | |
| 1-yr AAA | EDSF | 30 | -5 | 36 | 30 | 40 |
| 3-yr AA | Swaps | 55 | -5 | 63 | 55 | 70 |
| 3-4yr A | Swaps | 75 | -5 | 80 | 75 | 90 |
| 3-4yr BBB | Swaps | 130 | -5 | 140 | 130 | 150 |
| 3-4yr BB | Swaps | 290 | -25 | 315 | 290 | 320 |
| Auto - Subprime | | | | | | |
| 1-yr AAA | EDSF | 8 | -1 | 9 | 8 | 9 |
| 2-yr AAA | Swaps | 10 | 0 | 10 | 10 | 10 |
| 3-yr AA | Swaps | 30 | 0 | 30 | 30 | 30 |
| 3-yr A | Swaps | 45 | -3 | 48 | 45 | 48 |
| 3-yr BBB | Swaps | 65 | -2 | 67 | 65 | 67 |

Note: Tier 1 names represented by above.

Source: J.P. Morgan

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Exhibit 4: Fixed-rate AAA ABS (3-year) spreads to swaps

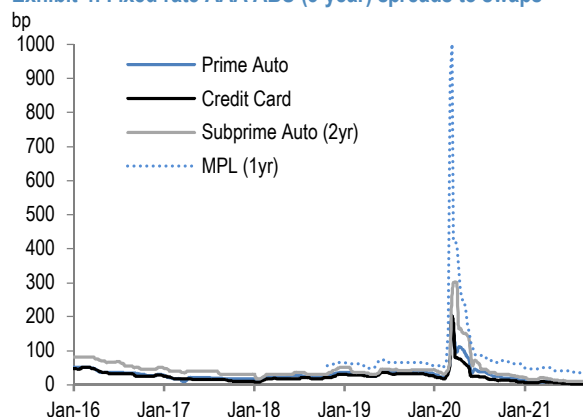


Exhibit 5: Floating-rate AAA ABS (3-year) spreads to Libor

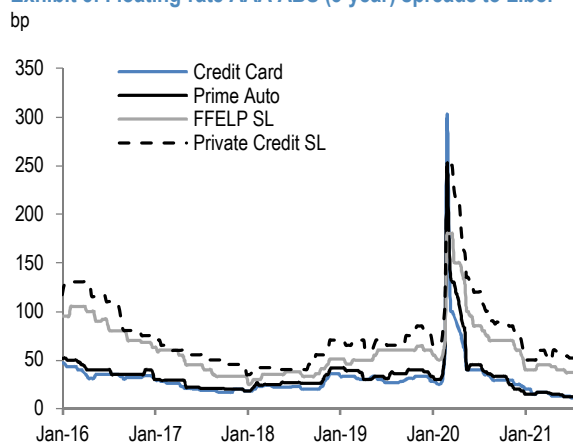


Exhibit 6: AAA cross sector spreads (3-year)

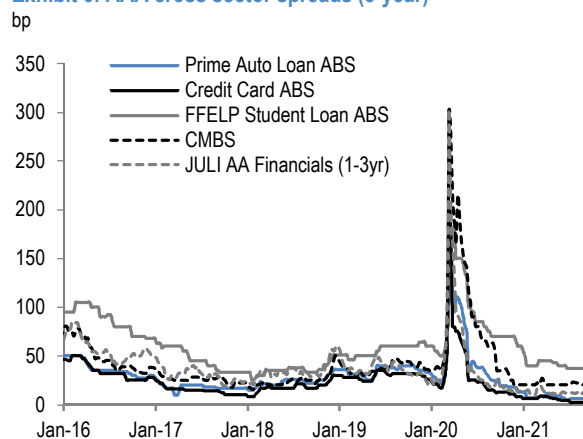
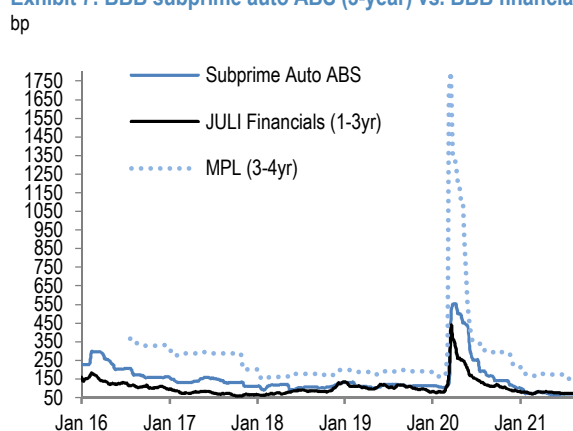
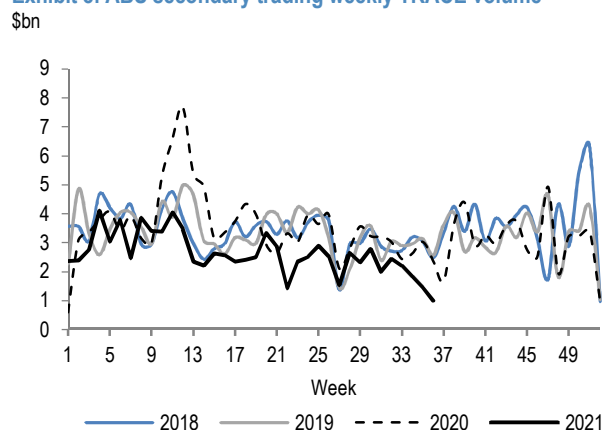


Exhibit 7: BBB subprime auto ABS (3-year) vs. BBB financials



Source: J.P. Morgan

Exhibit 8: ABS secondary trading weekly TRACE volume



Note: TRACE ABS data cut off one day prior to publication
Source: J.P. Morgan, TRACE, Bloomberg

Corporates

-
- **Over \$60bn of bonds were issued in the two days post Labor Day, and this issuance was well absorbed. Spreads widened just 1bp, and dealer net buying of bonds was modest.**
 - **While the pace of issuance was heavier than expected in week 1 post Labor Day, the market reaction seemed logical given light dealer and investor positions coming into the month. Fed data show dealers reduced net positions meaningfully in August, and fund flow data show continued solid demand for HG bonds. Over the past three days, about half of the full month's supply average has come, which should be supportive for spreads going forward.**
 - **Looking forward, we continue to expect modestly tighter spreads and also higher yields on HG bonds. Strong market technicals and the positive economic and corporate earnings trends are powerful drivers, even as we believe valuation already reflects much of the good news.**
 - **The direction of UST yields should drive the near-term spread trends, but with COVID peaking and potentially more fiscal stimulus in Washington later in Sept and then 3Q earnings reports in October, there are potential catalysts for higher yields and lower spreads near term as supply slows.**
-

The first days of Sept supply have been well absorbed

Supply over the first two days of September was near \$60bn, with more coming on Thursday. Dealers net bought just \$1.2bn over these two days, according to TRACE data. This is likely to leave their inventories near the middle of the recent range given the light positioning with which they came into Sept. Investors were supportive of the supply, with spreads wider by just 1bp on Tuesday. As such, spreads are now only 1bp wider after \$57bn of supply in 48 hours.

There was an interesting dichotomy of news on the day. On the positive side, the JOLTS report showed a record number of job openings and a record ratio of openings/unemployed at 1.26x (10.9m vs 8.7m). This makes sense in light of rising wages and ongoing labor shortages. While this should raise inflationary concerns, weaker growth in some delta-impacted sectors in the Fed beige book contributed to economic jitters and lower UST yields on the day. Also on the negative side, our research colleagues in Asia expect their default trends to get worse quickly, raising their expectations for Asia HY defaults to 9.0% for the year (\$34bn). As just 2.6% (\$9bn) has defaulted YTD, this amounts to a rapid default cycle expected over a short time period (see [here](#)); China property stress is the driver of this expectation. Concerns about Chinese growth and policy changes have not really impacted markets outside of Asia and the specific companies affected, but they are something to watch going forward.

In our view, what is notable is the September supply is coming so quickly early in the month such that investors may get comfortable with the notion that the heaviest supply period is behind them by mid-month. Also, the trend of COVID cases in the US has peaked (though it has not come down much yet), implying negatively impacted economic data over the past two months should revert in the coming

months (absent a resurgence again, potentially driven by school openings). At current tight valuations in many markets, including HG credit, there is not much room for spreads to tighten, but we still believe the trend is modestly tighter to year-end.

Back to school – A recap of our views post Labor Day

HG spreads (JULI at 112bp) are currently close to the middle of the 9bp trendless range (107-116bp) of the past 3 months. Over the past 3 months the US economy has been subject to yet another COVID wave, modest shifts in Fed rhetoric, lower UST yields and \$278bn of HG supply, all of which have been insufficient to move spreads much in either direction. We don't foresee any near-term catalysts that would leave us inclined to have a high conviction view that this range is likely to break but think it is worth examining some of the factors that will be at play as we proceed into the fall:

A) Credit technicals: Supply wave or supply tsunami? We believe the pending September supply will be readily absorbed. An increase in supply in Sept is widely expected. September was the busiest month of the year in both 2019 and 2018, and the 4-year average pre-COVID (2016-19) was \$130bn. As we noted previously, the direction of spread moves in Sept has been the opposite of August for the past 5 years, regardless of supply, so if this pattern holds we should be on pace for very modest spread tightening in September (JULI was 2bp wider in August). In our view, the risk on the supply front is that recent publically disclosed regulatory roadblocks to large M&A deals push out the timeline to fund some of these deals. If true, there is likely to be less of the type of supply that might have wider new issue concessions than non-M&A issuance. August supply was modestly below the typical pattern, and more so adjusted for the growth in the market y/y.

B) Credit valuations: Spreads do not look attractive at current levels, and therefore it is mostly yield buyers driving the incremental tightening in our market, in our view. The 10d rolling correlation between spread changes and UST 10yr changes has averaged -64% over the past 3 months, above the YTD average of -49%, i.e. spreads have been more sensitive to UST yields recently than over the full year. With the heavy supply expected over the next few weeks the direction of UST yields is likely to be particularly important in the strength of demand. It is difficult to predict this near term (the big miss in NFP on Friday was met with higher, not lower yields, as an example of this difficulty), but JPM rates strategists continue to believe the direction on UST yields is higher.

C) Credit fundamentals: Is peak stimulus behind us or ahead of us? Corporate earnings have been buoyed this year by the extensive fiscal stimulus passed in 2020 and earlier this year, some of which will begin to taper off in September (federal unemployment benefits, eviction moratorium, etc.). It is possible that alongside the ongoing COVID Delta wave, those growth prospects will cool from here as consumer spending normalizes (as evidenced by a number of recent economic data points), with implication for the pace of corporate deleveraging. On the other hand, it is also quite possible that yet another stimulus bill(s) ends up passing this fall, which could be in the range of \$1tr to \$4.5tr in total. While current proposals do not envisage as much direct and rapid 'direct to consumer' payments as the prior bills, and the implementation periods are significantly longer (infrastructure), further stimulus should still boost corporate earnings. The key risk factor is the extent to which corporate taxes also go up as part of any bill, which could dent some of the positive implications. We expect discussions in D.C. around these bills to pick up in

September. We also expect the tailwind of strong growth (JPM expects 8.5% in 3Q) will support very strong earnings once again.

In sum, we believe the number and magnitude of cross-currents facing spreads will pick up in September relative to August, but it seems somewhat unlikely at this juncture that any of them will lead to a significant move wider or tighter for spreads. Our bias remains constructive in anticipation of yields rising into year-end, and our YE spread forecast remains at 105bp, 6bp tighter versus current levels.

Day 1 of the September supply surge – a review of the day 20 issuers came to market

On Sept 7th \$32bn of HG bonds were issued across 20 different issuers. This was the 7th largest issuance day ever. There were three days last year with supply between \$37-40bn, and the record day was \$52bn in Sept 2013. In terms of the number of deals, this past Tuesday was a record, with 20 different issuers in the market (the prior record was 15 deals on 26th March 2020). YTD before Sept 7th, there had been \$942bn of supply across 166 business days, so an average of \$5.7bn/day. However, in the two weeks before Labor Day just \$5bn was issued, so clearly issuers were waiting for post Labor Day to come to market. On the day HG bond spreads were flat, as the supply was highly anticipated, even if the single-day total surprised to the high side. It was certainly helpful that UST 10yr yields were 8bp higher from last Thursday, attracting yield-based buyers to the market (and perhaps encouraging front-loaded supply from issuers worried about even higher UST yields). Dealers net bought just under \$1bn of bonds on Tuesday, which is a low percentage figure for a heavy supply day. As we noted last week, in the weeks before Labor Day, dealers had reduced net positions substantially, per TRACE. The weighted average maturity of the bonds issued on Tuesday was 10.2 years. This is lower than the 10.8yr average YTD (which is down from 12.6 last year and 11.8 years in 2019). So supply was heavy, but the average duration was shorter than usual. While the one day supply figure is not so relevant, several days of very heavy supply can weigh on the market. September has averaged \$140bn over the past 4 years, and we expect a figure in this range this year as well. If this month ends up at \$140bn, then 23% of this supply has already been issued, so the very heavy supply pace to start the month may bring an earlier slowdown in the pace of supply as well.

Weaker fund flows are likely holiday driven

Flows in HG bond funds weakened this week with the asset class reporting \$3.5bn of inflows, down 40% WoW. The reporting week was 4 days long, as it included the Labor Day holiday. In the prior two years, fund inflows also declined sharply in the week that included Labor Day compared to the prior week, so we would not read any message into the decline in inflows reported yesterday. For the week ending Sept 1, dealer inventories declined by \$1.2bn to \$3.5bn as trading desks prepared for heavy expected supply in September. This preparation was matched by investors who also came into the week prepared for the supply, as evidenced by the fact that HG bond spreads are just 1bp wider despite \$70bn of supply on the week.

Table A: Fund flows by asset class

| Asset Class | Fund Flow (\$mm) | WoW | Trend | 4-week avg (\$mm) | YTD (\$mm) | YTD (% of AUM) | ETF (\$mm) | Mutual Fund (\$mm) | ETF Trend |
|---------------|------------------|---------|-------|-------------------|------------|----------------|------------|--------------------|-----------|
| IG | +3,499 | -2,351 | | +5,182 | +279,328 | 7.47% | +2,156 | +1,342 | |
| HY | +187 | -1,407 | | +810 | -3,474 | -0.74% | -592 | +779 | |
| Lev Loans | +636 | -136 | | +574 | +32,260 | 35.82% | +341 | +295 | |
| Munis | +780 | +238 | | +1,055 | +78,509 | 7.93% | +234 | +546 | |
| Money Markets | -1,467 | +8,776 | | -159 | +202,953 | 3.88% | - | - | |
| Equities | +3,607 | -10,069 | | +9,840 | +266,794 | 2.12% | +3,728 | -122 | |

*Note: IG = Corp + Agg + Total Return (bolded lines from Table B)

Source: J.P. Morgan, EPFR

Table B: High grade fund flows by fund type

| HG Fund Category | Fund Flow (\$mm) | WoW | Trend | 4-week avg (\$mm) | YTD (\$mm) | YTD (% of AUM) | ETF (\$mm) | Mutual Fund (\$mm) | ETF Trend |
|-----------------------------------|------------------|---------------|-------|-------------------|-----------------|----------------|-------------|--------------------|-----------|
| Corp-only | +244 | -385 | | +706 | +15,071 | 2.94% | | | |
| Short | -194 | -492 | | +132 | +32,167 | 16.20% | -83 | -111 | |
| Intermediate | +9 | -527 | | +512 | +28,772 | 14.03% | -75 | +85 | |
| Long | +429 | +634 | | +62 | -20,394 | -18.61% | +446 | -18 | |
| Agg | +3,066 | -232 | | +3,302 | +214,342 | 8.62% | | | |
| Short | +1,123 | +1,203 | | +1,389 | +58,857 | 8.30% | +860 | +264 | |
| Intermediate | +1,802 | -1,547 | | +1,752 | +138,395 | 8.01% | +756 | +1,046 | |
| Long | +141 | +112 | | +160 | +10,904 | 21.78% | +136 | +5 | |
| Total Return | +188 | -1,734 | | +1,174 | +49,916 | 6.75% | +116 | +72 | |
| JPM Estimated All HG Corps | +1,112 | -909 | | +1,899 | +73,587 | 6.26% | | | |

Source: J.P. Morgan, EPFR

Table C: Net Primary Dealer Holdings

| | 01 Sep | Δ1w | Δ1m | 6m range | % 6m in range |
|------------------|--------|------|------|------------|---------------|
| IG Corp >13m | 3.5 | -1.2 | -2.0 | 0.3 / 7.9 | 41% |
| >13m and <5yrs | 3.6 | 0.1 | -1.0 | 0.8 / 4.9 | 67% |
| >5yrs and <10yrs | -1.6 | -1.3 | -2.0 | -1.6 / 3.2 | 0% |
| >10yrs | 1.5 | 0.0 | 1.0 | -0.2 / 2.2 | 71% |
| IG Corp <13m | 1.4 | 0.6 | 0.2 | 0.7 / 2.2 | 45% |
| Non-IG Corp | 1.9 | -0.6 | -1.5 | 0.0 / 4.6 | 41% |

Note: All figures in \$bn

For IG Corp>13m and all related sub categories

Source: J.P. Morgan, Bloomberg Finance L.P

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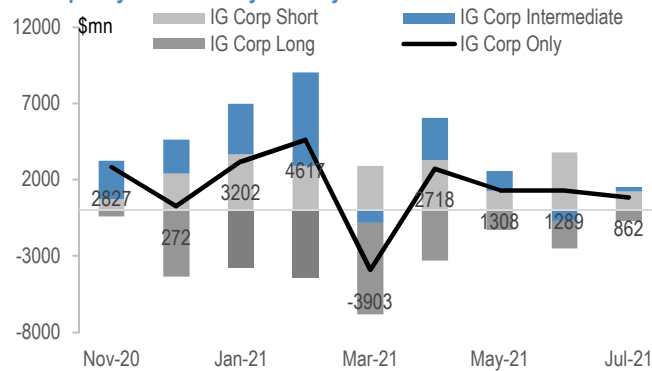
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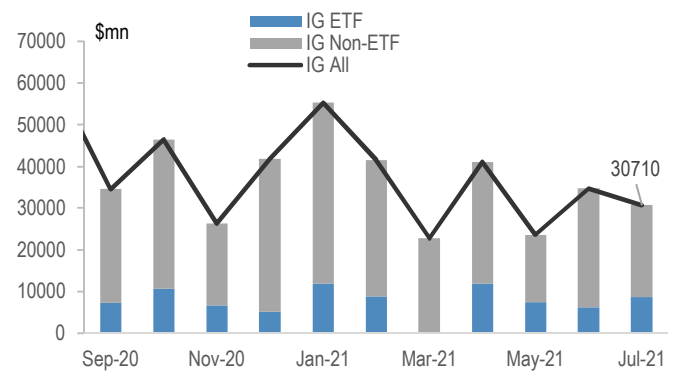
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IG Corp-only fund flows by maturity



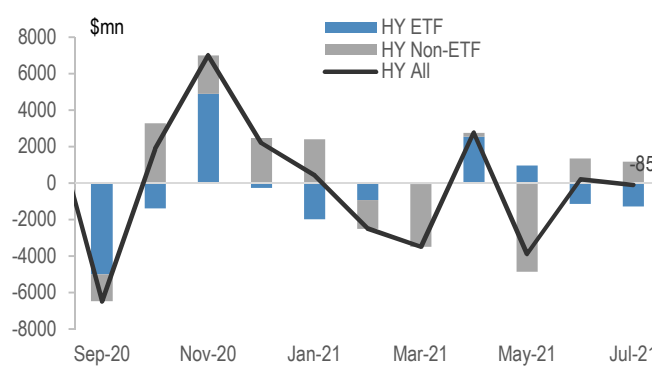
Source: J.P. Morgan, EPFR.

Overall IG fund flows



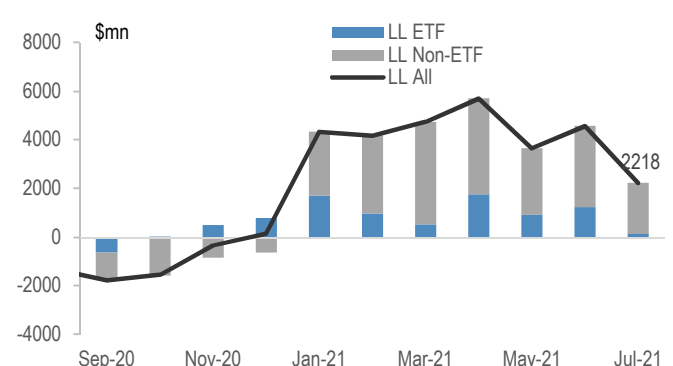
Source: J.P. Morgan, EPFR.

Overall HY fund flows



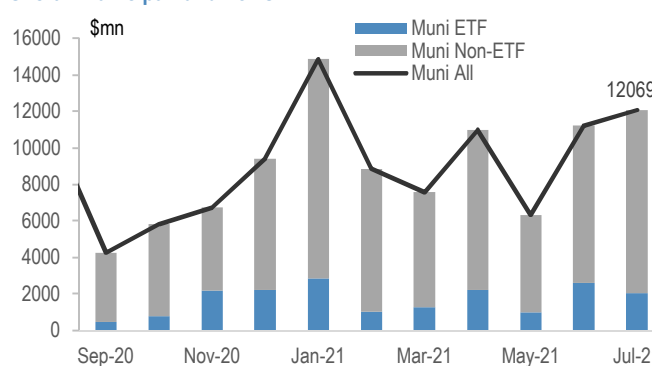
Source: J.P. Morgan, EPFR.

Overall Loan fund flows



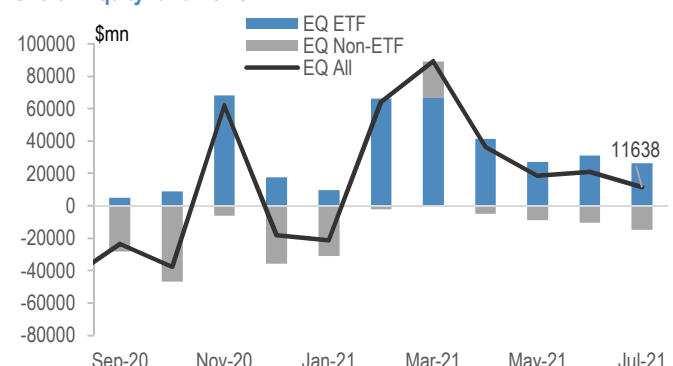
Source: J.P. Morgan, EPFR.

Overall Municipal fund flows



Source: J.P. Morgan, EPFR.

Overall Equity fund flows



Source: J.P. Morgan, EPFR.

High Yield

-
- The steady 3 week decline in high-yield bond yields extended, albeit at a more moderate pace this week as investors debate whether the delta variant, fading stimulus, legislative policies, growth downgrades, and a heavy M&A calendar in leveraged credit will impact valuations. High-yield bond yields and spreads decreased 4bp apiece over the past week to 4.30% and 378bp, which compare to as high as 4.72% and 416bp on August 19th. Yields had reached a record low of 4.22% and spreads a multi-year low 369bp in early July. The HY bond index has provided a 1.38% gain since August 19th amid little supply, the largest retail inflows since April, and as concerns around the delta variant and Fed tapering eased. Expected to rise in the weeks ahead, capital market activity is off to a slow start (\$3.4bn MTD) and totals \$367.8bn YTD or \$126.2bn ex-refi.
 - Leveraged loan prices rose a modest \$0.07 over the past week despite equity losses amid a pickup in retail inflows, steady CLO demand, and as investors brace for a sizeable but well telegraphed M&A calendar. Loan yields (3yr) and spreads (3yr) decreased 2bp and 3bp over the past week to 4.75% and 423bp. Meanwhile, the Leveraged loan index is providing a +0.23% gain in September following a +0.50% gain in August with the percentage of the market trading above Par (19.3%) rising to a high since late July. Light exiting the holiday, loan issuance totaling \$601.3bn YTD or \$246.5bn net of refi/re-pricing is up 115% and 150% yoy.
 - There was only one default in August impacting a \$565mn loan which follows one default impacting \$290mn of loans in July. Notably, this year's default volume (\$9.3bn) is on pace to be the lightest in a calendar year since \$4.5bn defaulted in FY2007. Further, the \$9.3bn is the lightest 8-month stretch since \$8.3bn defaulted in the period ended March 2014. Including distressed exchanges, the US high-yield bond and loan default rates decreased 3bp and 6bp m/m to 1.14% and 1.07%, respectively, and are down 562bp and 320bp YTD. Recall, our 2021 and 2022 HY bond and loan default rate forecasts are 0.65% and 1.25%, respectively. Notably, 2021's forecast would be the lowest default rate for high-yield bonds and loans since 2007 and 2011, respectively.
 - Our forecasts for 2021 HY bond gross and non-refinancing related issuance are \$525bn (unchanged) and \$175bn (+\$15bn), which imply an additional \$157bn gross and \$49bn net volume over the balance of the year. We continue to see a record \$350bn of HY bonds refinanced in 2021. For context, these forecasts compare to the full-year peaks for HY bond gross, net, and refi volume of \$450bn (2020), \$175bn (2013), and \$297bn (2020). Note the HY market has grown 25% since 2013's high for net volume. Our new forecasts for 2021 institutional loan gross and non-refi/repricing issuance are \$825bn (from \$775bn) and \$350bn (from \$265bn), which imply an additional \$224bn gross and \$104bn net volume over the balance of the year. For context, these forecasts compare to the full-year peaks for gross, net, and refi volume of \$974bn (2017), \$316bn (2007), and \$275bn (2017). Notably the loan market size has more than tripled since 2007's high for net issuance. On a leveraged credit basis, our 2021 forecasts would exceed the decade highs on a gross (\$1.35trn vs \$1.30trn 2017) and net (\$525bn vs 2014's \$410bn) basis and shatter the previous record high for refinancing (\$625bn vs 2017's \$483bn).
-

Credit Strategy Weekly Update

The steady three-week decline in high-yield bond yields extended, albeit at a more moderate pace this week as investors debate whether the delta variant, fading stimulus, legislative policies, growth downgrades, and a heavy M&A calendar in leveraged credit will impact valuations. The S&P 500 had posted four consecutive mild losses before Friday's bounce. **High-yield bond yields and spreads decreased 4bp apiece over the past week to 4.30% and 378bp, which compare to as high as 4.72% and 416bp on August 19th.** Yields had reached a record low of 4.22% and spreads a multi-year low 369bp in early July. By rating, BB, B, and CCC yields are now 3.11% (-2bp w/w), 4.67% (-6bp w/w), and 7.16% (+4bp w/w) versus 2021's record lows of 3.11%, 4.51% and 6.56%. Meanwhile, BB, B and CCC spreads are now 251bp (-3bp w/w), 420bp (-7bp w/w), and 672bp (+3bp w/w) which is 0.3%, 3.6%, and 9.9% above their year-to-date lows of 250bp, 405bp, and 611bp. **The HY bond index is providing a 0.35% gain in September following a +0.50% gain in August with Single B bonds (+0.42%) outperforming BB bonds by 8bp (+0.34%) and CCC bonds by 29bp (+0.14%).** Since August 19th, the top performing industries are Energy (+2.92%), Broadcasting (+2.46%), and Utility (+1.62%). Meanwhile, HY/IG spreads of 288bp compare to 322bp on 8/19, 280bp on 7/1/21, the YTD avg. of 311bp, and a decade low of 246bp in October 2018. Similarly, BB/BBB spreads are an YTD low 140bp apart which compare to 169bp on 8/19, 144bp on 7/1/21 and YTD avg. of 161bp. The HY bond index is providing a +5.36% gain year-to-date with CCCs (+7.91%) outperforming Single B bonds (+5.12%) and BB bonds (+4.03%). Energy is an outperformer in 2021 with gains totaling +12.27%, which is followed by Transportation (+10.92%) and Retail (+6.98%). With the US forward M&A calendar for leveraged credit at an elevated ~\$100bn (~\$30bn bonds), historically, September is the second most active month for issuance averaging \$35.5bn since 2010. Excepted to ramp higher in the upcoming weeks, capital market activity is off to a slow start with \$3.4bn pricing between Tuesday and Thursday. High-yield issuance totals \$367.8bn year-to-date or \$126.2bn ex-refi, which compare to \$310.7bn (+18.4%) and \$112.0bn (+12.7%) YTD20.

Table 1: High-yield bond spreads are 38bp tighter since August 19th

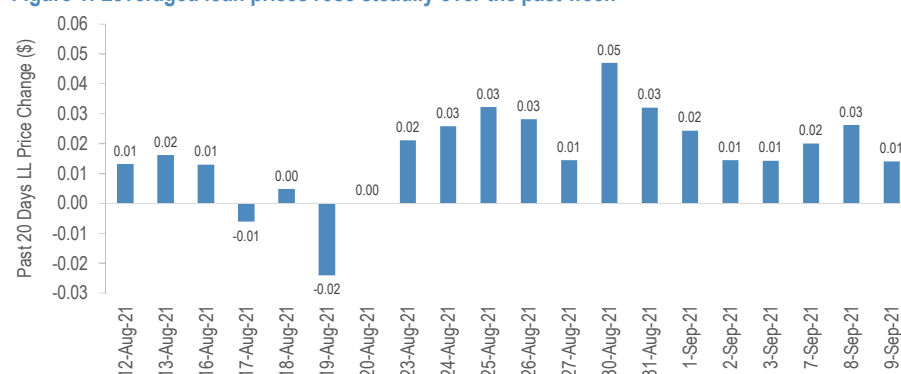
| | HY | IG | BBB | BB | B | CCC | HY – IG | BB-BBB | B – BB | CCC – B |
|------------------------|-------|-------|-------|-------|-------|--------|---------|--------|--------|---------|
| 9-Sep-21 | 378bp | 90bp | 111bp | 251bp | 420bp | 672bp | 288bp | 140bp | 169bp | 252bp |
| 2021 High | 451bp | 105bp | 129bp | 313bp | 486bp | 758bp | 348bp | 186bp | 186bp | 277bp |
| 2021 Low | 369bp | 87bp | 108bp | 250bp | 405bp | 611bp | 280bp | 140bp | 150bp | 206bp |
| Decade low | 355bp | 87bp | 108bp | 212bp | 352bp | 611bp | 246bp | 86bp | 124bp | 206bp |
| All-time low | 266bp | 75bp | 99bp | 162bp | 247bp | 469bp | 179bp | 28bp | 50bp | 206bp |
| 20 Yr Median (Monthly) | 543bp | 135bp | 171bp | 361bp | 545bp | 1011bp | 403bp | 178bp | 183bp | 476bp |
| % Above 2021 low | 2.4% | 3.4% | 2.9% | 0.3% | 3.6% | 9.9% | 2.6% | 0.2% | 12.7% | 22.3% |
| % above decade low | 6.4% | 3.4% | 2.9% | 18.2% | 19.2% | 9.9% | 16.7% | 62.9% | 36.1% | 22.3% |

Source: J.P. Morgan.

Leveraged loan prices were resilient over the past week despite equity losses amid a pickup in retail inflows, steady CLO demand, and as investors brace for a sizeable but well telegraphed M&A calendar. Leveraged loan prices increased \$0.07 over the past week to \$98.57 with the average price for BB loans increasing \$0.08 to \$99.36, Single B loans increasing \$0.06 to \$99.29, and Split B/CCC loans increased \$0.11 to \$91.08. Prices for the index are now only \$0.08 below the YTD high in mid-June (\$98.65), while the \$95-\$97.99, \$98-100, and >\$100 buckets for Loans now reside at 6.90%, 68.62%, and 19.33% of the market. Meanwhile, loan yields (3yr) and spreads (3yr) decreased 2bp and 3bp over the past week to 4.75% and 423bp. Retail loan funds are experiencing their largest inflows since June with the shortened weeks' inflows totaling \$717mn. Meanwhile, September's

CLO volume ex-refi/resets total \$3.6bn month-to-date following a record \$18.5bn in August. With 3 of the 4 most active months on record, 2021's net CLO issuance (ex-refi/reprice/re-issue) now totals \$112.4bn (+125.0% y/y) which is 18% ahead of 2018's record trajectory (2018YTD \$95.6bn, 2018FY \$130.6bn). **The Leveraged loan index is providing a +0.23% gain in September following a +0.50% gain in August with Split B/CCC loans (+0.41%) outperforming B loans (+0.22%) and BB loans (+0.21%).** The loan yield-to-3yr takeout is now 45bp above yields for the HY index, which is down from as high as 50bp above on July 7th. As well, yields for the HY bond index (4.30%) are 16bp above yields for loan issuers with bonds outstanding (4.14%), comparable to 44bp on 8/19, only 8bp below on July 7th and an average 47bp gap year-to-date. The Loan index is providing a +4.20% gain year-to-date with Split B/CCC loans (+11.69%) outperforming B loans (+3.97%) and BB loans (+2.16%). Top performing industries year-to-date are Metals/Mining (+13.33%), Energy (+7.70%) and Retail (+6.79%). Meanwhile, leveraged loan issuance month-to-date totals \$0.2bn or \$0.2bn net of refi/re-pricing. Loan issuance totaling \$601.3bn YTD or \$246.5bn net of refi/re-pricing is up 115% and 150% yoy.

Figure 1: Leveraged loan prices rose steadily over the past week



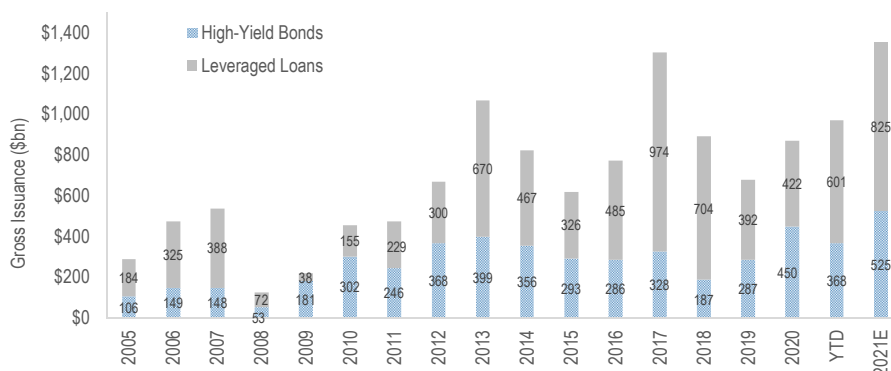
Source: J.P. Morgan.

An Update on 2021 High-Yield Bond and Leveraged Loan Issuance Forecasts

Last updated at the beginning of May, we are revisiting our 2021 high-yield bond and leveraged loan new-issuance forecasts in light of the ~\$100bn M&A calendar. For context, the first 8 months of 2021 produced 5 record calendar months of HY issuance and yields are within an earshot of a record low. Meanwhile, CLO origination has accelerated to a record pace and retail inflows reveal no signs of abating. First, we are making nearly no changes to our 2021 high-yield bond issuance forecasts. High-yield issuance totals \$367.8bn year-to-date or \$126.2bn ex-refi, which compare to \$310.7bn (+18.4%) and \$126.2bn (+12.7%) YTD20. **We maintain our \$525bn FY21 HY bond gross issuance forecast and raise expected non-refinancing related issuance by \$15bn to \$175bn.** This implies an additional \$157bn gross and \$49bn net volume over the balance of the year. **It continues to imply a record \$350bn of HY bonds will be refinanced in 2021.** For context, these forecasts compare to the full-year peaks for high-yield bond gross, net, and refi volume of \$450bn (2020), \$175bn (2013), and \$297bn (2020). Of course, forecasted net HY issuance numbers which are approach 2013's record occur in the context of a market size which has expanded by 25% since. Meanwhile, loan issuance totaling \$601.3bn YTD or \$246.5bn net of refi/re-pricing is up 115% and 150% yoy. **Our new forecast for FY21 institutional loan gross and non-refi/repricing issuance are \$825bn and \$350bn,** which is up from \$775bn and \$265bn prior and implies an

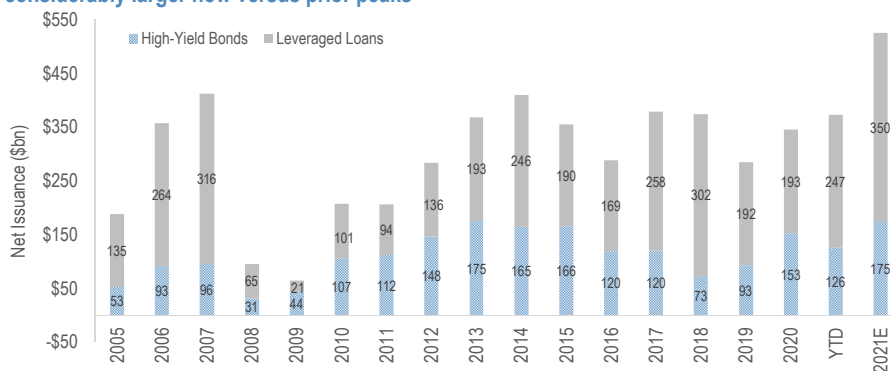
additional \$224bn gross and \$103bn net volume over the balance of the year. For context, these forecasts compare to the full-year peaks for gross, net, and refi volume of \$974bn (2017), \$316bn (2007), and \$275bn (2017). Importantly, record forecasted net loan issuance occurs in the context of a market size which has more than tripled since 2007. **On a leveraged credit basis, our 2021 forecasts would exceed the decade highs on a gross (\$1.35trn vs \$1.3trn 2017) and net (\$525bn vs 2014's \$410bn) basis and shatter the previous record high for refinancing (\$625bn vs 2017's \$483bn).**

Figure 2: Our 2021 forecast for \$1.35trn of issuance across bonds and loans exceeds the prior high in 2017



Source: J.P. Morgan.

Figure 3: While we are forecasting record net issuance across bonds and loans, both markets are considerably larger now versus prior peaks



Source: J.P. Morgan.

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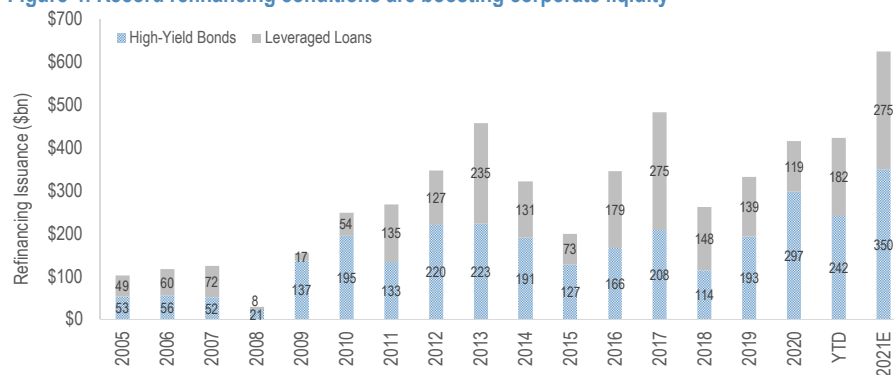
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US Fixed Income Strategy
 10 September 2021

J.P.Morgan

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Figure 4: Record refinancing conditions are boosting corporate liquidity



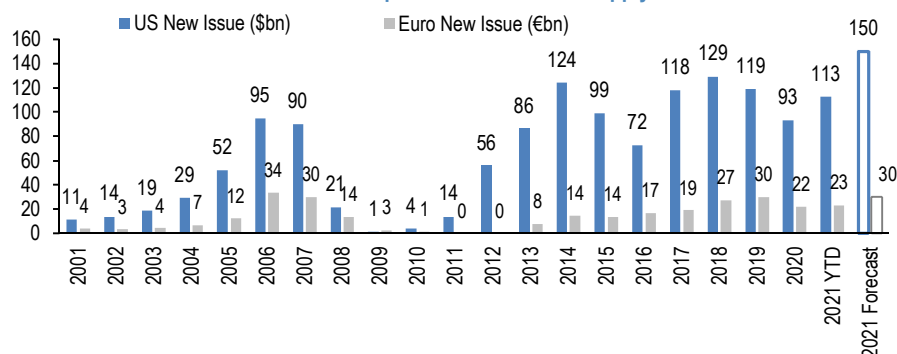
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- *Thanks to those who joined our webinar on September 9th as part of the Credit Strategy Snapshot. For those unable to join, the replay is available [here](#).*
 - **We raise our FY21 net new US CLO supply forecast to \$145-155bn (from \$130-140bn) and our Euro forecast to €30bn (from €25bn), implying global CLO formation of about \$185bn which if realized would surpass the prior \$161bn record in 2018.**
 - **US CLO formation is on a record pace with \$112.7bn YTD, which is also impacting leveraged capital markets by providing liquidity to loans. Our \$150bn baseline US CLO forecast is reasonable as it requires \$9-10bn monthly in Q4 (YTD, supply has averaged \$13.6bn monthly). Our colleagues also recently raised net supply forecasts for HY and Loans to \$175bn and \$350bn.**
 - **On balance, we adjust our US CLO AAA primary spread forecast from 100bp to 110bp (currently 119bp midpoint). This is partly related to higher supply and competing yields in US Treasuries. We expect CLO Mezz to trade mostly sideways to yearend as valuations seem about fairly-valued relative to US growth expectations, with risks around Delta.**
 - **Bank demand for CLOs should remain solid especially given the continued cannibalization of bank C&I lending by markets and non-bank players. Our equity research colleagues observe increased exposure to CLOs in 1H21 ([here](#)). We expect insurance demand, noting the NAIC has proposed a change in capital requirements creating a steeper slope across the CLO risk spectrum.**
-

Raising the Global CLO New Issue Forecast to \$185bn

We raise our FY21 net new US CLO supply forecast to \$145-155bn (from \$130-140bn) and our European CLO forecast to €30bn (from €25bn, €23.3bn YTD), implying global CLO formation of about \$185bn in 2021 which if realized would surpass the prior \$161bn record in 2018. New US CLO supply remains on a record trajectory, with \$112.7bn YTD, and expect FY net supply growth⁶ of +20%, similar to Loans (+22%), and compares to +7% and +11% in HG and HY. In 2021, US CLO supply has averaged \$13.6bn per month, with 6 months ranking in the top 15 all-time, including the highest all-time of \$18.5bn in August. Our \$150bn forecast implies c. \$9-10bn per month in Q4, which seems reasonable considering the highest historical October was \$13.8bn, November was \$13.7bn, and December was \$10.7bn. Our colleagues also recently raised their net supply forecasts for HY and Loans to \$175bn and \$350bn (see [here](#)).

Exhibit 1: Historical Annual US and European CLO New Issue Supply and 2021 Forecasts



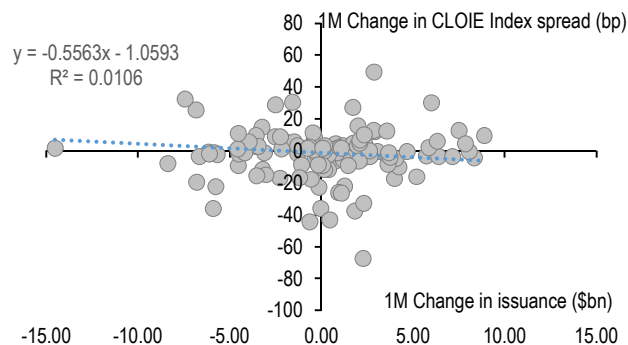
Source: J.P. Morgan. \$150bn based on our \$145-155bn US CLO supply forecast. Excludes refi/resets. As of September 10, 2021.

On balance, we adjust our US CLO AAA primary spread forecast from 100bp to 110bp (currently 119bp midpoint). This is partly related to higher supply, given a limited relationship (Exhibit 2), but also other themes including competing yields in US Treasuries. We expect CLO Mezz spreads to trade mostly sideways to yearend, as valuations seem about fairly-valued relative to growth expectations (Exhibit 3). Bank demand for CLOs should remain solid especially given the continued cannibalization of bank C&I lending by markets and non-bank players and our equity research colleagues observe increased exposure to CLOs in 1H21 (see [here](#)). On the insurance side, we expect continued demand, noting the NAIC has proposed a change in capital requirements creating a steeper slope across the CLO risk spectrum, which are currently constant for AAA, AA, Single-A tranches. The changes are minor in AA through BBB but of note there are proposed decreases in capital requirements on AAA and BB ratings.

⁶ 2021 Net supply forecast (gross minus refinancings/repricing/reset) divided by market size as of YE2020.

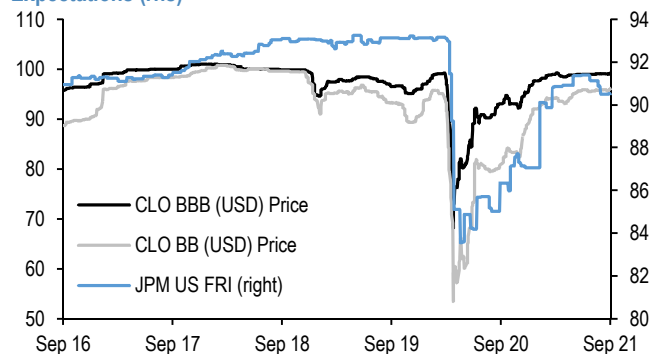
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Exhibit 2: 1 Month change in CLO spreads versus 1 Month change in CLO new supply



Source: J.P. Morgan. Based on CLOIE Composite Index DM. Issuance data excludes refinanced, reset, re-issued and repriced CLOs. As of September 10, 2021.

Exhibit 3: CLO Mezzanine Price (\$) versus US GDP Growth Expectations (rhs)



Source: J.P. Morgan. Based on CLOIE index price and the J.P. Morgan Forecast Revision Index. As of September 1, 2021.

Exhibit 4: Current versus March 2021 Proposed Base Factors

| Moody's Rating | Current Base Factors | Proposed (March 2021) |
|----------------|----------------------|-----------------------|
| Aaa | 0.39% | 0.29% |
| Aa1 | 0.39% | 0.42% |
| Aa2 | 0.39% | 0.55% |
| Aa3 | 0.39% | 0.70% |
| A1 | 0.39% | 0.84% |
| A2 | 0.39% | 1.02% |
| A3 | 0.39% | 1.19% |
| Baa1 | 1.26% | 1.37% |
| Baa2 | 1.26% | 1.63% |
| Baa3 | 1.26% | 1.94% |
| Ba1 | 4.46% | 3.65% |
| Ba2 | 4.46% | 4.66% |
| Ba3 | 4.46% | 5.97% |
| B1 | 9.70% | 6.15% |
| B2 | 9.70% | 8.32% |
| B3 | 9.70% | 11.48% |
| Caa1 | 22.31% | 16.83% |
| Caa2 | 22.31% | 22.80% |
| Caa3 | 22.31% | 33.86% |

Source: J.P. Morgan, NAIC. Presents pretax C1 base factors under the current formula and the 2021 Academy-proposed base factors, see [here](#) for details.

Credit Derivatives

-
- **We discuss our latest CDX.IG roll estimates following the publication of the Provisional List of constituents. There are two name changes in the index. We expect the new index to trade 6.2bp wider than the current index series**
 - **We also discuss our expectations regarding composition changes and roll valuations for the CDX.HY S37 index. We expect 2 name changes in the index. We expect the new index to trade 16bp wider/7 cents higher than the current index series**
 - **We discuss the transition of iBoxx TRS away from Libor to new RFRs by the YE**
 - **We discuss a Payer Ladder that takes advantage of elevated levels of CDX option skew to hedge against a modest selloff**
 - **We discuss a credit-equity trade for Boeing**
-

Back to School

The quiet summer months are now in the rear view mirror, and broadly speaking panned out as we had hoped and expected. Now that markets are returning to life, and focus again is turning towards the timing and nature of tapering in the coming months and with the rolls only a couple of weeks away, we think now is the time to begin taking some chips off the table as investors look to consolidate the years returns as we move into Q4. We still believe that the next few months are likely to be relatively low volatility, with broadly speaking spreads moving sideways, but we think it is prudent to position now for any potential weakness.

In *Market Themes* we update our latest roll expectations, as more details are confirmed as they move firmly into view, and we also take a look at Standardised TRS as details about the transition away from Libor at the end of the year are finalised.

In the *Trade Ideas* section we again look to the option market for exposure to a modest widening of spreads from here, adding a payer structure on iTraxx Main to our bearish seagull on CDX.IG that we added last time. We also highlight Boeing for a credit-equity trade, and close out three other credit equity trades taking our total closed trades in this space to 13 over the last year for almost €5mm of P&L.

Our *CD Player Total Return Portfolio* is up €1.455mm since the last update on July 14. We open two new trades: iTraxx Main Payer Ladder and a Boeing Credit Equity trade. We also clean our locker at the start of the new term, closing a number of trades (Buy S34/35 XO Roll; 10y France v QW5A; Long Snr Mezz vs Jnr Mezz in Main; Long XO Snr Mezz v IBOXXMJA; Total, CSTM and TKAGR Credit-Equity Trades), and reduce market exposure to match our thesis for the upcoming weeks.

Figure: Recent IG Index Time Series

Spread (bp), roll adjusted



Source: J.P. Morgan.

Figure: Recent HY Index Time Series

Spread (bp), roll-adjusted



Source: J.P. Morgan.

Market Themes

CDX.IG Roll Update

On Tuesday IHS Markit published the Provisional List of changes for the upcoming CDX.IG Series 37 roll.

The Final Composition for the index will be published on or before Friday, 17 September EOD. The new Series 37 Roll rules are available [here](#).

Composition changes: There are two name changes in the provisional list published by Markit, in line with our expectations. **TransCanada Pipelines Limited** and **Cigna Corporation** are expected to leave the index, as they are the least liquid index names. On the other hand, **M.D.C. Holdings, Inc.** and **Advanced Micro Devices, Inc.** are expected to enter the index due to the rising star inclusion criteria.

Valuations: From a fair value perspective, the new index series should trade 6.2bp wider than the current index series. The 6 month extension in maturity should result in the new index series trading 5.8bp wider while the name changes should result in the new index trading 0.4bp wider.

Table: Provisional composition changes in CDX.IG for the S37 roll

| ENTRANTS | | | | | LEAVERS | | | |
|----------|------------------------------|------------|--------|-------------|-------------------------------|------------|--------|-----------|
| # | Name | Sector | Spread | Reason | Name | Sector | Spread | Reason |
| 1 | M.D.C. Holdings, Inc. | Cons Goods | 82 | Rising star | Cigna Corporation | Healthcare | 33 | Liquidity |
| 2 | Advanced Micro Devices, Inc. | Technology | 60 | Rising star | TransCanada Pipelines Limited | Utilities | 55 | Liquidity |

Source: J.P. Morgan. Data as of 8 September 2021.

Domtar is currently in CDX.IG, but is at risk of a downgrade to HY due to the possibility that Domtar's credit profile will weaken post an acquisition. The acquisition is expected to be completed by YE21, but potential LBO financing prior to the index roll could result in the name being downgraded near term. We expect the removal of Domtar to result in the new index series trading only 4.3bp wider than the current index versus our current expectations of 6.2bp.

Table: Historical Roll Cost

| Series | Roll Date | Traded Roll | Theo Roll | Roll Cost at roll | Roll Cost 1w after | Roll Cost 1m after |
|--------|-----------|-------------|-----------|-------------------|--------------------|--------------------|
| S26-27 | Sep-16 | 6.0 | 8.9 | -3.0 | -2.7 | -1.6 |
| S27-28 | Mar-17 | 6.5 | 9.1 | -2.5 | -1.5 | -1.0 |
| S28-29 | Sep-17 | 2.7 | 2.6 | 0.2 | 0.1 | 1.2 |
| S29-30 | Mar-18 | 7.8 | 7.7 | 0.1 | -0.4 | 0.2 |
| S30-31 | Sep-18 | 5.2 | 4.8 | 0.4 | 0.1 | -0.5 |
| S31-32 | Mar-19 | 7.3 | 7.8 | -0.5 | -0.3 | 0.5 |
| S32-33 | Sep-19 | 7.2 | 7.6 | -0.4 | -0.7 | -0.3 |
| S33-34 | Mar-20 | 6.6 | 12.4 | -5.7 | -0.2 | -0.8 |
| S34-35 | Sep-20 | -23.5 | -23.5 | 0.0 | 1.0 | 0.3 |
| S35-36 | Mar-21 | 6.0 | 5.9 | 0.2 | -0.2 | -0.4 |
| Avg | | 3.2 | 4.3 | -1.1 | -0.5 | -0.2 |

Source: J.P. Morgan.

Figure 5: Investor net positioning in the CDX.IG index is around the higher end of its historical range



Source: J.P. Morgan, DTCC

CDX.HY Roll Preview

CDX.HY Series 37 will start trading on Monday, September 27th with a December 20, 2026 maturity for the five-year contract.

We expect two name changes in the new CDX.HY series. Note that this is our expectation based on current publically available information and not the official list published by Markit. Markit is expected to publish the provisional list on or before Wednesday, 15th September EOD.

Composition changes: We expect **M.D.C. Holdings, Inc.** to leave the index due a rating upgrade to HG. We expect **Norbord Inc.** to leave the index as there is no debt outstanding for the issuer. On the other hand, we expect **Nordstrom Inc.** to enter the index as it is a part of the top 50 liquid single name CDS in the HY liquidity list. We expect **EQT Corporation** to enter the index due to additional CDS liquidity inclusion.

Valuations: From a fair value perspective, the new index series should trade **16bp wider/7 cents higher** than the current index series. The 6 month extension in maturity should result in the new index series trading 13bp wider/22 cents lower, while the name changes should result in the new index trading 3bp wider/14 cents lower.

Note that the impact of the maturity extension is based on current single name curve pricing and our estimate of where these curves will trade post-roll. This is what matters for the CDX.HY index roll as it takes place after all the single names have rolled, contrary to the other CDX/iTraxx indices.

Table: Expected composition changes in CDX.HY for the S37 roll

| ENTRANTS | | | | | LEAVERS | | | |
|----------|-----------------|---------------|--------|--------------------|-----------------------|-----------------|--------|---------------------|
| # | Name | Sector | Spread | Reason | Name | Sector | Spread | Reason |
| 1 | Nordstrom, Inc. | Cons Services | 234 | Top 50 liquid CDS | M.D.C. Holdings, Inc. | Consumer Goods | 82 | Rising star |
| 2 | EQT Corporation | Energy | 200 | Addl CDS liquidity | Norbord Inc. | Basic Materials | 53 | No debt outstanding |

Source: J.P. Morgan. Data as of 8 September 2021.

Libor Transition – Standardised Total Return Swaps

- As the transition away from Libor continues, the latest credit product to adopt the new Risk Free Rates (RFR) will be the Standardised Total Return Swaps.

- From 20 December 2021, the convention for the funding leg of the trade for Standardised TRS in USD and GBP will become compounded-in-arrears SOFR and SONIA, respectively. EUR denominated trades will continue to use 3M Euribor.
- The new convention only impacts new trades entered into from 20 December and is a trading convention; trades entered into prior to this date will remain on their current 3M Libor standard unless they are rolled into the new convention.

The transition away from Libor continues apace, with Credit TRS the latest product to adapt RFR conventions. We have previously written about the move to RFR in the clearing space ([Benchmark Reform for CDS](#), 8 June) and expect changes to CDSW in the coming months.

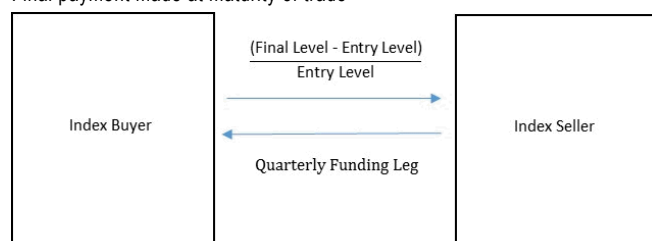
Standardised TRS in the credit market are traded on a variety of underlying indices. These indices are total return indices in the sense that they reflect the total return, including all coupon returns, an investor would earn from holding all the bonds underlying the reference index in the relevant amount.

The basic structure of the TRS is such that TRS buyer pays the quarterly funding or floating leg in exchange for the percentage return of the reference index from Trade Date to Maturity Date.

Historically, the floating leg of the Standardised TRS has been 3M Libor (USD and GBP) or Euribor (EUR) with a full first coupon. This means that, at each of the quarterly coupon payment dates (20 Mar, Jun, Sep, Dec), the floating leg coupon is paid and the rate for the next period is set. A long risk trade midway through a coupon period would receive the linearly accrued coupon from the start of the coupon period until Trade Date as the first coupon is paid in full on the next coupon date.

Figure: Typical Total Return Structure

Final payment made at maturity of trade



Source: J.P. Morgan

Table: Current and Future Trade Convention

Quarterly floating leg

| Currency | Prior to 20th Dec 2021 | From 20th Dec 2021 onward |
|----------|------------------------|-----------------------------|
| EUR | 3M Euribor | 3M Euribor |
| GBP | 3M GBP Libor | SONIA compounded-in-arrears |
| USD | 3M USD Libor | SOFR compounded-in-arrears |

Source: J.P. Morgan, HIS Markit

From 20 December 2021, the rate paid on the floating leg of trades denominated in USD and GBP will be RFRs, SOFR and SONIA, respectively. For EUR denominated trades, since EURIBOR is not terminating in the near future, there is no convention change for EUR contracts.

As the new RFRs are not known in advance the simple linear accrual of coupons used previously needs to change. The new convention will be daily compounding of the RFR from the Last Coupon Date to Trade Date. Since the full first coupon convention will remain, this will ensure that the TRS buyer is compensated for the coupon accrued before they traded.

To calculate the coupon and accrual, the RFR daily accrual index calculated by either the Federal Reserve or the Bank of England will be used. The calculation of the coupon payments will now be given by Equation 1. A trade entered into during a coupon period will be given by Equation 2.

Equation 1: Coupon Amount

$$\text{Coupon Amount} = \text{Notional} * \left(\frac{\text{RFR Index}_{\text{IMM Period End Date}-2\text{bd}}}{\text{RFR Index}_{\text{IMM Period Start Date}-2\text{bd}}} - 1 \right)$$

Equation 2: Accrued Amount

$$\text{Accrued Amount} = \text{Notional} * \left(\frac{\text{RFR Index}_{\text{Trade Date}-1\text{bd}}}{\text{RFR Index}_{\text{IMM Period Start Date}-2\text{bd}}} - 1 \right)$$

The SOFR Index [methodology](#) and the [historical](#) data can be accessed via the Federal Reserve website. The SONIA Compounded Index [methodology](#) and the [historical](#) data can be accessed via the Bank of England website.

The two-day delay on the RFR used is to ensure that the rate is available at the time the trade is entered into. Both SOFR and SONIA are expected to be published in the morning of the following business day. It is worth noting that the current convention in USD and EUR coupons is to use the Libor rate from 2 days prior to the date the coupon is set.

Table: Standardised TRS Indices

| iBoxx Index | Ticker | Currency |
|---|----------|----------|
| iBoxx EUR Contingent Convertible Liquid Developed Market AT1 | IBXXC2D1 | EUR |
| iBoxx EUR Corporates | QW5A | EUR |
| iBoxx EUR Liquid High Yield | IBOXXMJA | EUR |
| iBoxx USD Contingent Convertible Liquid Developed Market AT1 | IBXXC1D1 | USD |
| iBoxx USD Liquid High Yield | IBOXHY | USD |
| iBoxx USD Liquid Investment Grade | IBOXIG | USD |
| iBoxx USD Liquid Leveraged Loans | IBXXLLTR | USD |
| iBoxx USD Liquid High Yield Oil & Gas (5/25/50 Issuer Cap) | IBXXLOG1 | USD |
| iBoxx USD Liquid Investment Grade 10+ Index | IBXXLIG1 | USD |
| iBoxx USD Emerging Markets Sovereigns & Sub-Sovereigns Capped | IBXXEM11 | USD |
| iBoxx USD Liquid Investment Grade BBB 0+ | IBXXUQ0T | USD |
| iBoxx GBP Corporates | IYDU | GBP |

Source: J.P. Morgan

Municipals

- This week, UST yields rose by 1-3-2bps in 2-5-10yr spots and fell by 1bp in the 30yr spot. Benchmark municipal yields were unchanged in 2-5yrs and rose by 1-1bp in 10-30yrs on the curve, outperforming Treasuries by 1-3-1bps in 2-5-10yr spots, while underperforming by 2bps in 30yrs
- Over the holiday shortened week, the municipal market struck an uneasy tone, with light customer buying as tax-exempt customer buys fell 27% from the 5-day average for Thursdays, and taxable buys were lower by 25%. At the same time, selling was elevated as tax-exempt customer sells were up 11% and taxable selling surged by 55%
- Amid relatively few data releases, August headline and core PPI rose, while initial claims hit a new post-pandemic low of 310k. Tight labor markets in recent months have contributed to somewhat-faster-than-usual earnings growth
- After rounding, our tracking estimate of 2Q real GDP growth was unchanged at 6.6% saar following the latest quarterly services survey (QSS), which looked very similar to earlier figures used in the BEA's 2Q GDP growth estimate
- Next week we anticipate \$12.3bn in supply, or 119% of the 5yr equiv week avg (\$10.3bn). Tax-exempt volume is expected to be \$9.4bn (110% of 5yr week avg), and taxable/corp cusip supply is expected at \$2.9bn (1.77x the avg)
- Lipper reported combined weekly and monthly inflows of \$2.7bn for the period ending September 8th, increasing YTD inflows to \$85.3bn. Municipal bond funds have seen inflows in 68 of the past 69 weeks, totaling a record \$146.8bn. After 36 weeks, the pace of combined weekly/monthly fund inflows remains the fastest on record, and the current YTD inflow of \$85.3bn would be the 2nd highest among full-year calendar inflows, since the inception of the data in 1992
- From a dollar value perspective, there is only ~\$700mn or 0.9% of ETFs held by muni mutual funds. As such, in our view, this capital does not represent a significant vulnerability of these ETFs
- We analyze the relationship between bidwants and MSRB trade data by curve. The correlation of bidwants to trade volume, is stronger in shorter dated maturity buckets and get progressively weaker as we move out on the curve. The correlation between the change in tax-exempt bidwanted volume and trade volume in 0-5yrs on the curve was 83%, versus just 42% in 20-30yrs on the curve
- We also note some selling pressure in 10-20yr part of the curve in the past days as the trend of bidwants continued move higher (141%), while the transaction volume declined (only 112%)
- YTD 2021 state tax receipts as of July, for the 47 states who report the data, show an avg increase of just 18.6% vs. 2020, with a weighted avg increase of 22%. Compared to the same period in 2019 (pre-pandemic), the avg increase was 13.4% (17.4% weighted avg)

- **The 33 states that have published July PIT receipts reported avg 2021 YTD revenue growth of 18.0% vs the same period in 2020, and 17.1% vs 2019. While unemployment remains above pre-pandemic levels in the U.S. overall, rates have improved significantly (5.2% as of July 2021), boosting PIT collections**
 - **Avg YTD sales tax revenue collections are higher by 15.7% for YTD 2021 vs 2020, and 12.7% higher vs 2019. Certain tourism-dependent states (NV +28.4%, FL +23.7%) saw improvement in sales tax revenue in 2021, as widespread vaccination and relaxed restrictions in the spring, combined with pent up consumer demand, supported economic recovery**
-

The holiday shortened week saw relative slight market participation ahead of higher supply next week and less favorable seasonals

Over the holiday shortened week, the municipal market struck an uneasy tone, with light customer buying as tax-exempt customer buys fell 27% from the 5-day average for Thursdays, and taxable buys were lower by 25%. **At the same time, selling was elevated as tax-exempt customer sells were up 11% and taxable selling surged by 55%. Bidwants remained relatively stable on Thursday (\$545mn/+6%).**

While fund flows were positive for the week, Tuesday and Wednesday saw consecutive days of muni HY and ETF outflows. These outflows were likely the result of a handful of asset allocation shifts versus a broad based migration of capital from the sector, as both muni HY and ETF investors tend to move capital more freely than traditional muni mutual fund investors. **We continue to believe that the next outflow cycle will be triggered by a pronounced/abrupt increase in UST yields or some existential capital markets event.**

There were relatively few economic data releases this week given the holiday. The release of the August producer price index (PPI) showed building inflationary pressures as the headline rose 0.7%, while the core (excl. food and energy) rose 0.6%. The headline PPI jumped 8.3% oya, while the core increased 6.7% oya. Despite solid the August increases in the main PPI aggregates, the details that are used to estimate PCE inflation looked soft on net. **Our tracking estimate of the core PCE price index points to a 0.15% gain in August (3.4% oya), as we look to next week's CPI release to help refine this estimate ([US: PPI increases 0.7% in August](#), Silver).**

Initial jobless claims in regular state programs fell from 345,000 to 310,000 during the week ending September 4, beating expectations and marking a new post-pandemic low ([US: Regular jobless claims filings keep trending lower](#), Silver). In July 2021, ratios of job openings to hires in most sectors were more than 30% higher than in January 2020. Tight labor markets have contributed to somewhat-faster-than-usual earnings growth, with total private monthly earnings growth averaging 0.48%/m/m since April 2021, of which elevated labor market tightness alone would predict 0.41%/m/m growth on average. **The implied elasticity of wage growth to elevated labor market tightness is relatively low, indicating that earnings growth will not spike as sharply as tightness has, though tight labor markets will likely support a modest pickup in earnings growth in months to come ([Focus: Tight labor markets have led to higher wages](#), McCrory).**

Data from the latest quarterly services survey (QSS) looked very similar to earlier figures that the BEA used to estimate 2Q GDP growth. **After rounding, our tracking estimate of 2Q real GDP growth was unchanged at 6.6% saar following the QSS ([US: Little impact from QSS on 2Q GDP tracking](#), Silver).**

This week House Committees also began the process of marking up potential Democratic priorities that may be included in an eventual reconciliation package. The mark up and negotiations surrounding the package will continue throughout September. **We are mindful that gaps in policy objectives among moderate and progressive Democrats, and thin margins in the House and no room for dissent in the Senate, are obstacles to passage of an expansive reconciliation bill.**

Resolving differences among factions in the party is complicated by the relative short legislative session between now and year-end. **This is exacerbated as the reconciliation package will be considered alongside the Senate approved bipartisan infrastructure bill, while also needing to address government funding (expiring at the end of the month) and reach a deal to raise the debt ceiling.**

This week, UST yields rose by 1-3-2bps in 2-5-10yr spots and fell by 1bp in the 30yr spot. Benchmark municipal yields were unchanged in 2-5yrs and rose by 1-1bp in 10-30yrs on the curve, outperforming Treasuries by 1-3-1bps in 2-5-10yr spots, while underperforming by 2bps in 30yrs (Exhibit 1).

Exhibit 1: Benchmark municipal yields were unchanged in 2-5yrs and rose by 1-1bp in 10-30yrs on the curve, outperforming Treasuries by 1-3-1bps in 2-5-10yr spots, while underperforming by 2bps in 30yrs

| Sector | HG Municipal Yields | | Treasury Yields | | Relative Change | HG Muni/Tsy Ratio | |
|--------|---------------------|----------------|-----------------|----------------|-----------------|-------------------|----------------|
| | Current (%) | 1w k chg (bps) | Current (%) | 1w k chg (bps) | | Ratio (%) | change (% pts) |
| 2yr | 0.11 | 0 | 0.22 | 1 | 1 | 51 | -2 |
| 5yr | 0.41 | 0 | 0.81 | 3 | 3 | 50 | -2 |
| 10yr | 0.94 | 1 | 1.34 | 2 | 1 | 70 | 0 |
| 30yr | 1.53 | 1 | 1.93 | -1 | -2 | 79 | 1 |

Source: Refinitiv, J.P. Morgan

Over the holiday shortened week, the municipal market struck an uneasy tone, with light customer buying as tax-exempt customer buys fell 27% from the 5-day average for Thursdays, and taxable buys were lower by 25%. **At the same time, selling was elevated as tax-exempt customer sells were up 11% and taxable selling surged by 55%. Bidwants remained relatively stable on Thursday (\$545mn/+6%).**

While fund flows were positive for the week, Tuesday and Wednesday saw consecutive days of muni HY and ETF outflows. These outflows were likely the result of a handful of asset allocation shifts versus a broad based migration of capital from the sector, as both muni HY and ETF investors tend to move capital more freely than traditional muni mutual fund investors. **We continue to believe that the next outflow cycle will be triggered by a pronounced/abrupt increase in UST yields or some existential capital markets event.**

That said, we believe that it is prudent to consider reigning in credit overweighs that have provided sizable outperformance over the past 18-months. As we wrote in [7/9/2021 publication](#), it is hard to ignore the pace and magnitude of the current inflows streak, and we expect that we are in the very late innings. **The next outflow period will likely be foreshadowed by rising longer dated tax-exempt yields.**

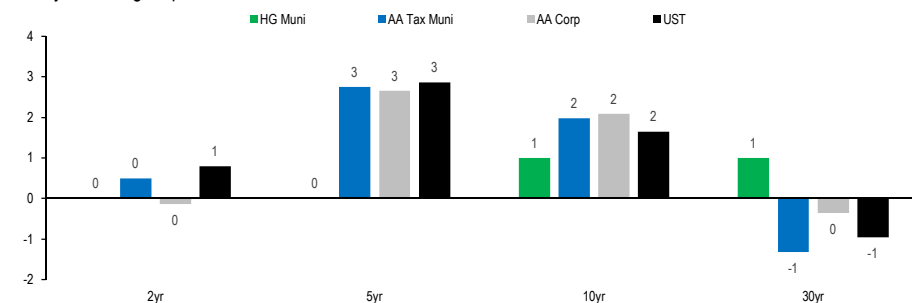
Each passing week of inflows, and continued low base HG rates and near record tight spreads, adds further tension to the spring.

While it is impossible to predict the timing of the next outflow cycle, we believe that it is possible to identify securities with a high degree of exposure. Holding data of the largest HY muni ETFs are very similarly concentrated. **We expect that the eventual outflow cycle would trigger immediate selling of the more concentrated and liquid securities in these funds ([JPM Muni Weekly August 27, 2021](#)).**

This week, tax-exempts outperformed taxables through 10yrs on the curve, while lagging by 2bps in the 30yr spot, as HG muni yields were unchanged in 2-5yrs and higher by 1bp in 10-30yr spots. UST yields were up 1-3-2bps in 2-5-10yrs, and lower by 1bp in 30yrs on the curve.

Exhibit 2: For the week, tax-exempts outperformed taxables through 10yrs on the curve, while lagging by 2bps in the 30yr spot

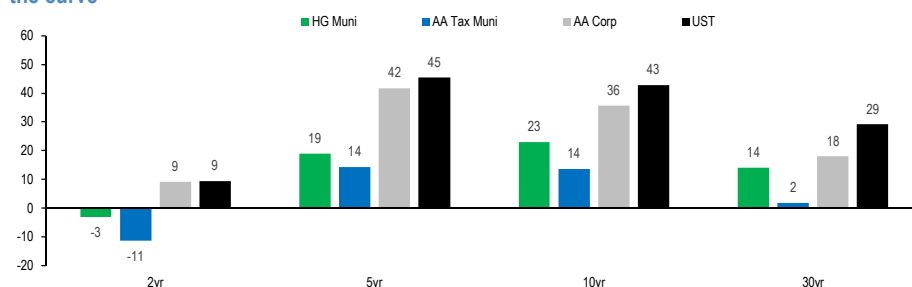
WTD yield change, bps



Source: Refinitiv, J.P. Morgan

YTD tax-exempts have outperformed UST by 12-26-20-15bps in 2-5-10-30yrs on the curve. **Taxable municipals have outperformed tax-exempts, corporates, and UST across the curve.**

Exhibit 3: YTD, taxable municipals have outperformed tax-exempts, corporates, and UST across the curve



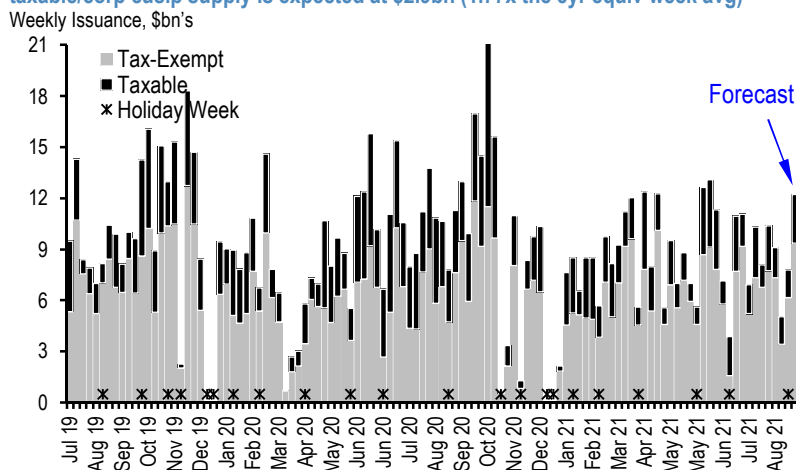
Source: ICE, Refinitiv, J.P. Morgan

This week's total issuance of \$7.8bn included \$6.1bn tax-exempt supply. Next week we anticipate \$12.3bn in supply, or 119% of the 5yr equiv week avg (\$10.3bn). **Tax-exempt issuance is expected to be \$9.4bn (110% of 5yr equiv week avg), and taxable/corp cusip supply is expected at \$2.9bn (1.77x the 5yr equiv week avg).**

The largest deal next week is State of California, with \$2.1bn of tax-exempt bonds. The second largest deal, Black Belt Energy Gas District (Project No. 6) backed by Goldman Sachs, is expected to bring \$805mn of tax-exempt bonds. The

third largest issue is Providence St. Joseph Health Obligated Group with \$775mn of taxable bonds.

Exhibit 4: Tax-exempt issuance is expected to be \$9.4bn (110% of 5yr equiv week avg), and taxable/corp cusip supply is expected at \$2.9bn (1.77x the 5yr equiv week avg)



Source: IPREO, Bloomberg Finance L.P., J.P. Morgan

For the period ending 09/08/2021, Lipper's combined weekly and monthly reporting funds indicated inflows of \$2.7bn

Lipper reported combined weekly and monthly inflows of \$2.7bn for the period ending September 8th, increasing YTD inflows to \$85.3bn. High Yield funds recorded \$199mn of inflows, Intermediate funds saw \$677mn of inflows, and Long Term funds saw \$994mn of inflows. Municipal ETF's registered \$202mn of inflows.

Weekly reporting funds were responsible for \$1.1bn of inflows. Long Term funds reported \$691mn of inflows, High Yield funds received \$145mn of inflows, and Intermediate funds received \$138mn of inflows.

California municipal bond funds experienced \$131mn of inflows, while New York municipal funds indicated \$2mn of outflows.

For the period, Tax-exempt money market funds reported outflows of \$307mn, and Taxable money market funds reported net outflows of \$3.7bn.

Taxable Fixed Income funds reported inflows of \$14.0bn, while Equity funds (US & Global) saw outflows of \$5.3bn.

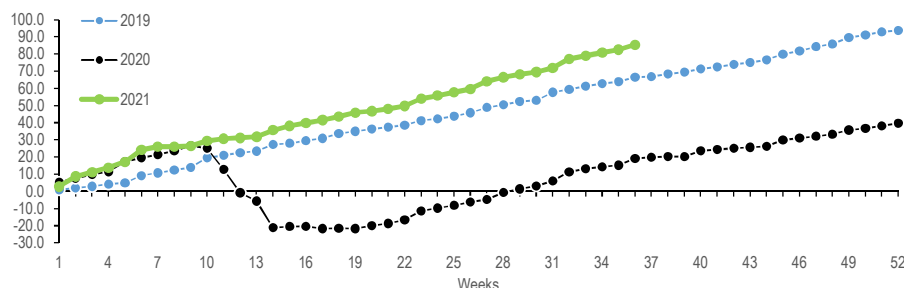
Excluding ETFs, all term muni funds reported \$2.5bn of inflows.

Exhibit 5: Municipal bond funds indicated combined monthly and weekly inflows of \$2.7bn for the period ending 09/08/2021

Fund flows and fund assets, \$mn's

| Type of funds | Fund flows | | | Fund Assets | |
|-------------------------|------------|-----------|------------|-------------|------------|
| | Actual | YTD Total | 4-wk. avg. | Actual | 4-wk. avg. |
| All term muni funds | 2,737 | 85,269 | 2,031 | 1,037,396 | 1,034,614 |
| New York | -2 | 199 | 0 | 35,107 | 35,129 |
| California | 131 | 3,260 | 83 | 92,581 | 92,556 |
| National funds | 2,538 | 80,077 | 1,903 | 831,851 | 829,024 |
| High Yield | 199 | 18,979 | 378 | 154,521 | 154,085 |
| Intermediate | 677 | 16,254 | 408 | 241,658 | 241,041 |
| Long Term | 994 | 49,808 | 1,040 | 601,346 | 600,283 |
| Tax-exempt money market | -307 | -15,180 | -97 | 90,911 | 91,114 |
| Taxable money market | -3,711 | 194,605 | -2,926 | 4,363,925 | 4,374,573 |
| Taxable Fixed Income | 13,976 | 412,967 | 9,033 | 6,899,559 | 6,868,988 |
| Equity | -5,281 | 259,793 | 8,972 | 18,878,455 | 18,648,950 |

Cumulative fund flows, \$bn

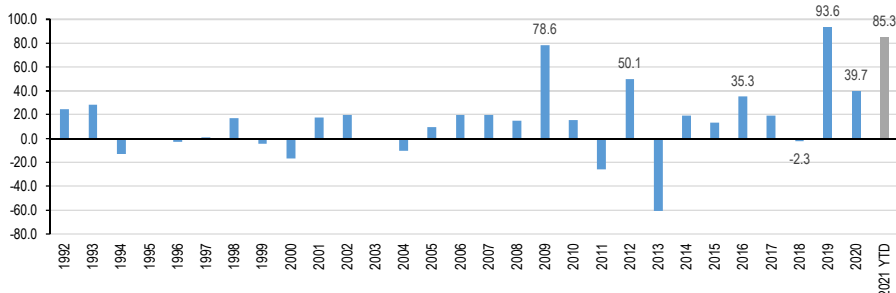


Source: Refinitiv Lipper US Flow, J.P. Morgan. Note: Combined weekly and Monthly flows

Municipal bond funds have seen inflows in 68 of the past 69 weeks, totaling a record \$146.8bn. After 36 weeks, the pace of combined weekly/monthly fund inflows remains the fastest on record, and the current YTD inflow of \$85.3bn would be the 2nd highest among full-year calendar inflows, since the inception of the data in 1992.

Exhibit 6: The current YTD inflow of \$85.3bn would be the 2nd highest among full-year calendar inflows, since the inception of the data in 1992

Cumulative fund flows, \$bn



Source: Refinitiv Lipper US Flow, J.P. Morgan. Note: Combined weekly and Monthly flows

Muni mutual funds invest about 0.9% of AUM in ETFs

In our [8/27/2021 publication](#), we talked about rapid growth in muni ETFs and their top holdings. Since the publication investors have been asking about possible double counting of inflows, as some mutual funds invest in their fund complex's ETF's.

To quantify the extent of the practice, we analyzed the percentage of ETF holdings among the 5 largest municipal ETFs. As illustrated in Exhibit 7 the AUM of top 5 muni ETFs are about 68% of all muni ETFs. The second column shows the % of AUM held by all mutual funds or ETFs. These fixed-income mutual funds may simply buy muni ETFs to gain diversified and immediate exposure to the asset class. **The highlighted column indicates the proportion of AUM held by municipal funds. This is the portion that could be considered as double counting of inflows, as the capital would show up in both the mutual funds and the ETF.**

From a dollar value perspective, there is only ~\$700mn or 0.9% of ETFs held by muni mutual funds. As such, in our view, this capital does not represent a significant vulnerability of these ETFs.

Exhibit 7: There are only ~\$700mn or 0.9% of the ETF are held by other muni funds. As such, in our view, this capital does not represent a significant vulnerability of these ETFs

| | Total Assets (\$bn) | % held by Mutual Fund or ETF | % held by Muni only Mutual Fund or ETF | AUM held by Muni funds (\$bn) |
|-----------------------|------------------------|------------------------------------|--|-------------------------------------|
| ETF 1 | 23.5 | 1.86% | 1.75% | 0.4 |
| ETF 2 | 13.9 | 0.49% | 0.00% | 0.0 |
| ETF 3 | 6.0 | 2.31% | 2.30% | 0.1 |
| ETF 4 | 4.9 | 0.01% | 0.00% | 0.0 |
| ETF 5 | 3.9 | 5.87% | 3.69% | 0.1 |
| Total of All Muni ETF | 76.7 | | | 0.7 |

Source: Refinitiv Lipper fund flow, Bloomberg Finance L.P., J.P. Morgan

Bidwants and trading data are highly correlated in the short end of the curve but increasingly disconnected further out on the curve

In the following, we analyze bidwanted and MSRB trade data by curve, to explore any potential relationship between the two. In our analysis we use trade and bidwanted data from 8/2/2021 to 9/9/2021. **As shown in Exhibit 8, in aggregate, BW and trading volume data for tax-exempt bonds appear to trend together for both upward and downward changes.**

When we parse the data into maturity buckets, we find that the correlation of bidwants to trade volume is stronger in shorter dated maturity buckets, and get progressively weaker as we move out on the curve. For example, since the beginning of August, the correlation between the change in tax-exempt bidwanted volume and trade volume, in 0-5yrs on the curve was 83%, versus just 42% in 20-30yrs on the curve (Exhibit 8).

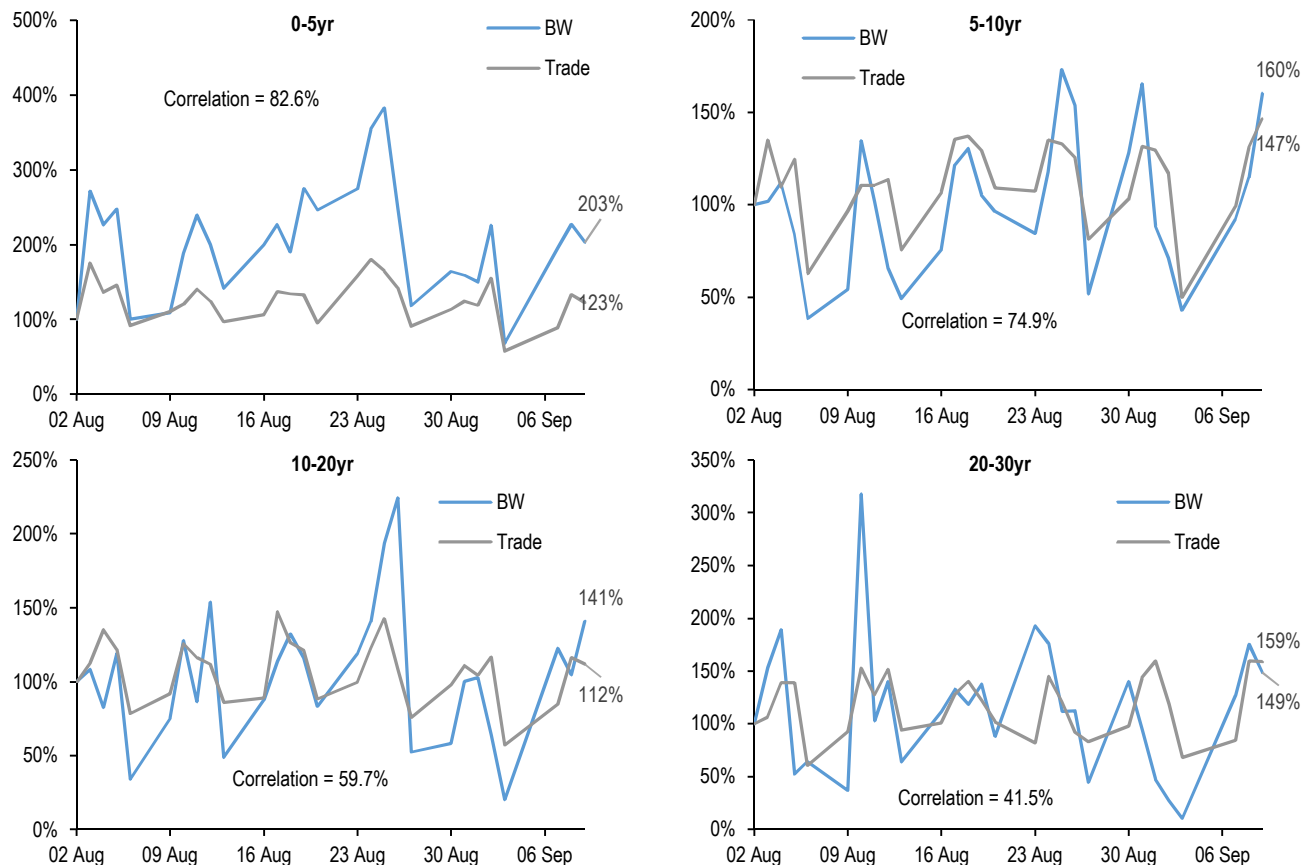
This is likely explained by a greater number of small dollar value (avg par traded of \$93k) retail trades performed via bidwanted in the shorter dated bonds.

Transactions in longer dated bonds, are usually in larger block size and via voice trades as opposed to over bidwanted platforms.

We also note some selling pressure in 10-20yr part of the curve in the past days as the trend of bidwants continued move higher (141%), while the transaction volume declined (only 112%).

Exhibit 8: In shorter end of the curve BW and trades are better correlated than longer dated. We also note some selling pressure in 10-20yr part of the curve in the past days as the trend of bidwants continued move higher (141%), while the transaction volume declined (only 112%)

Ratio of secondary trading volume and bidwanted par value to benchmark of 8/2, %



Source: Bloomberg Finance L.P., MSRB, J.P. Morgan

YTD state tax receipts through July, for the 47 states who report the data, show an average increase of 18.6% compared to 2020 and 13.6% compared to 2019 (pre-pandemic)

Below we present our analysis of available state reported tax receipts thus far in 2021. **Across the U.S., 47 states report their tax receipts on a monthly basis, with only a few (Oregon, Wyoming, and Alaska) who do not provide regular updates. As of 9/9/2021, 38 states provide tax data through July, while 9 states reported their data through May or June.**

We view the improvement in YTD aggregate tax collections, as well as major tax sources, compared to both prior year and pre-pandemic levels as a positive sign for

the economic recovery of U.S. states. However, as noted in the past, the conclusions drawn from the analysis, are based current data, and are not indicative of future revenue results, particularly given economic, pandemic, and legislative unknowns. While we do not anticipate the same large scale economic shutdowns we saw last year, with the rise of the delta variant and the potential for future variants and other challenges, the trajectory of state revenue collections may vary from its current path.

Based on all available tax data, YTD tax receipts are up an average of 18.6% across the 47 states, who report monthly revenue data

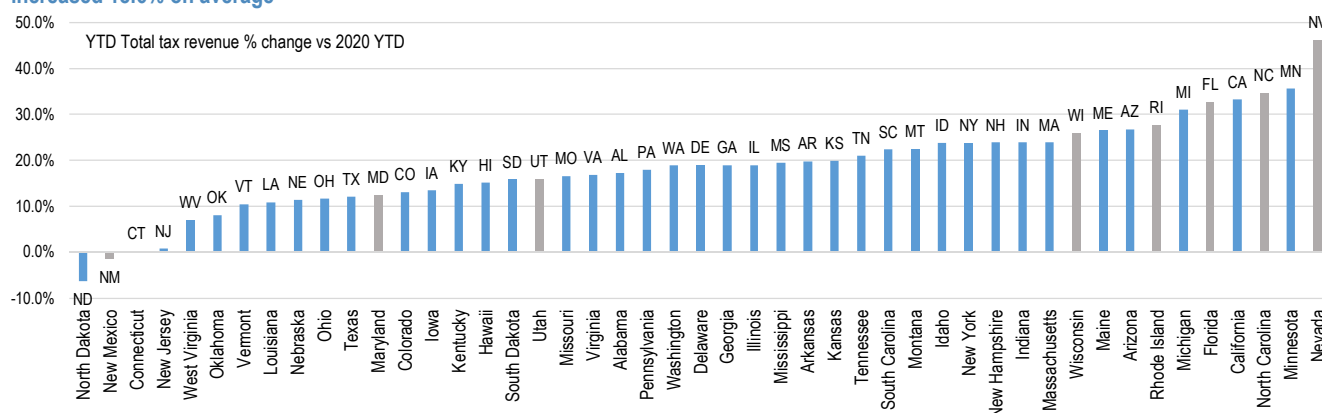
Across our sample size of 47 states, we find an aggregate average increase of 18.6%, with a relatively low variance between most states, but a significant range between the worst and strongest performances. The weighted average yoy increase for the same period was 22%. As compared to comparable months in the 2019 (pre-pandemic) period, the 47 states are up by 13.4% (17.4% weighted avg).

When we normalize and exclude states which have not yet reported July data, we find that 38 states reported an average increase of 17.9%. As compared to comparable months in the 2019 (pre-pandemic) period, these 38 states are up by 16.4%. While the majority of states see a calendar YTD tax revenue increase versus 2020, just two states saw YoY declines (North Dakota -6.2%, New Mexico -1.4%) (Exhibit 9).

Focusing on some individual states, Nevada has seen the greatest increase yoy (+46.1%) in YTD 2021 (versus YTD 2020) (Exhibit 10). We note that the data for Nevada is through May 2021, as more current revenues are not available. The year over year comparison for the state, which relies heavily on tourism, was likely boosted by the 2020 COVID-19 related slowdown. The current period of spiking cases may hurt the state's collections in the coming months. We also note that the rise in Nevada's YTD collections is partially driven by temporary changes to distribution methods for certain tax proceeds.

Nevada's Jan-May 2021 period returns look robust even as compare to the pre-pandemic Jan-May 2019 period, showing a 16.3% increase in revenue.

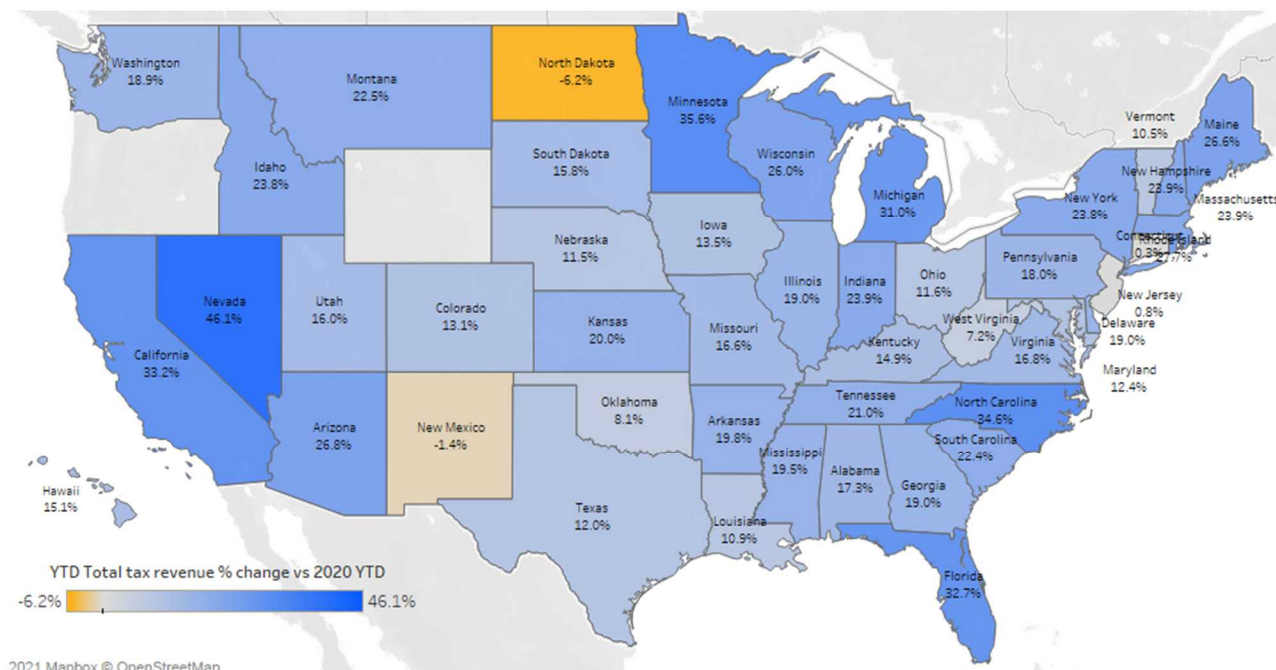
Exhibit 9: YTD total tax receipts % change vs 2020 YTD Across our sample size of 47 states, we find that on average, YTD tax revenue increased 18.6% on average



Source: Individual state monthly tax reports, J.P. Morgan. Note: Oregon, Wyoming, and Alaska do not provide monthly tax data. Bars in gray indicate July data is not yet available

Exhibit 10: The State of Nevada has seen the greatest increase yoy (+46.1%) in YTD 2021 versus YTD 2020

YTD total tax receipts % change vs 2020 YTD



Source: Individual state monthly tax reports, J.P. Morgan. Note: Oregon, Wyoming, and Alaska do not provide monthly tax data. Asterisk (*) denotes states where July data is not yet available

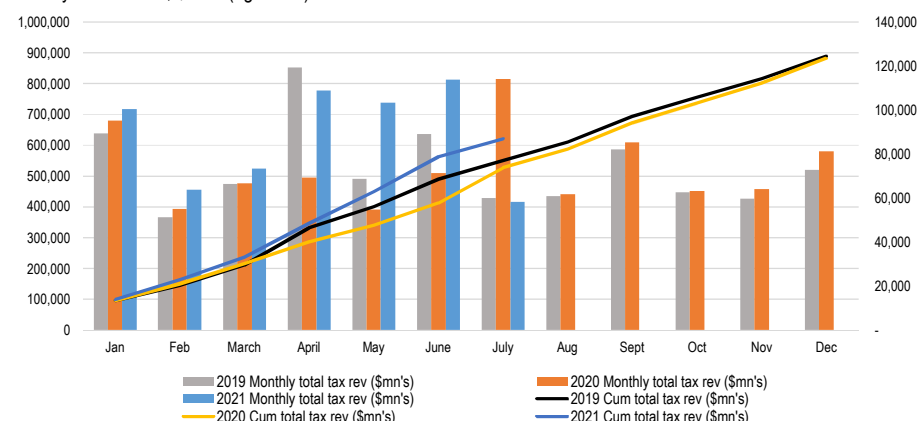
Further, analyzing the dataset by month, we see that 2021 tax revenue data (in aggregate across 47 states) has outperformed 2020 in every month except July (Exhibit 11). **The relative drop in July 2021 and spike in April, are somewhat misleading as the spike reflects a shifting of the personal income tax deadline in 2020, from April to July.** Additionally, July 2020 tax receipts reflect the bounce in activity associated with the early months of the reopening.

The consistent rebound in the early years of 2021 was a reflection of improved infection rates and widespread vaccinations which led to a more consistent economic rebound in early 2021. April 2021 tax receipts leapt 57%, despite the extension of the filing deadline to May, leading to an 88% increase in May, and 60% in June. Naturally, the relative increase in April was offset by the 49% decrease in July tax receipts.

Exhibit 11 also includes a monthly comparison to 2019 tax collections, illustrating the performance of 2021 monthly collections versus pre-pandemic levels. Thus far in 2021, total tax collections have generally outperformed or been in line with 2019 levels, with the exception of April. This is likely the result of the extension of the federal tax filing deadline from April to May in 2021, evidenced by the spike in collections in May and June.

Exhibit 11: On a monthly basis, 2021 tax revenue data (in aggregate across 47 states) has outperformed 2020 in every month except July

Cumulative total tax revenue, \$mn's (left axis)
Monthly tax revenue, \$mn's (right axis)



Source: Individual state monthly tax reports, J.P. Morgan. Note: Oregon, Wyoming, and Alaska do not provide monthly tax data

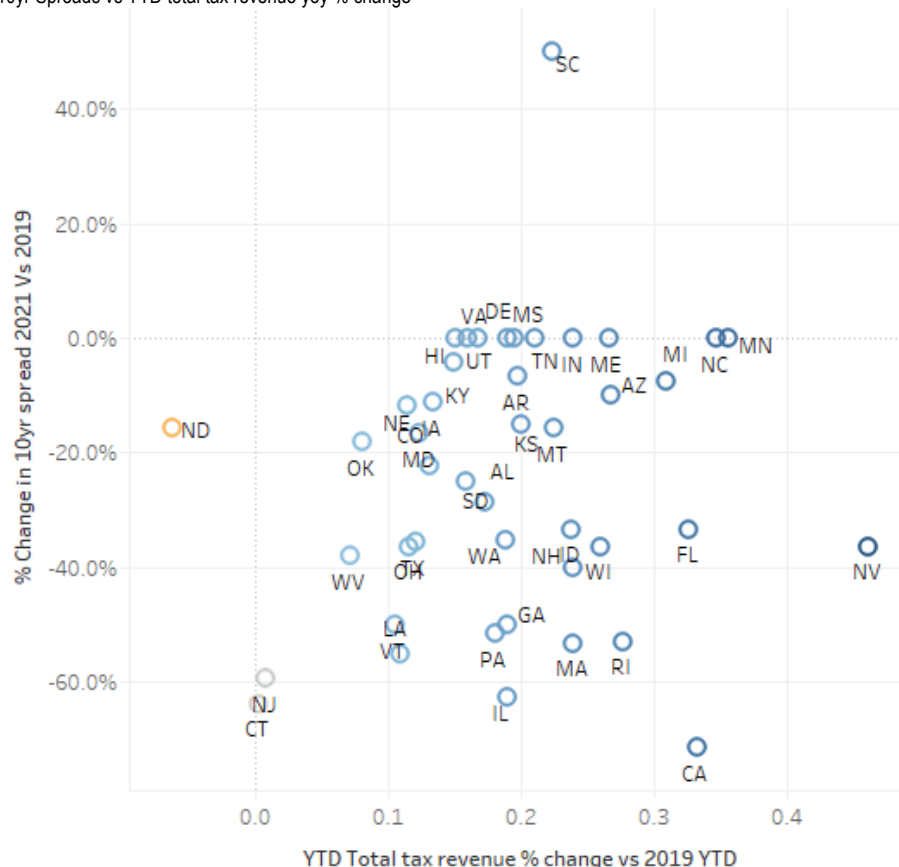
The improving tax collection picture corroborates reports from recent months which highlight recovery milestones after early pandemic losses. **A report by [Pew Trusts](#) in May found that 29 states had taken in as much or more revenue in the 12 months since the pandemic began as they did in the 12 months before the pandemic, as of February 2021, according to preliminary monthly data from the Urban Institute.**

With early August data from a handful of states, we have also seen the trend of recovering tax collections continue. **Illinois, for example, saw monthly collections rise 17% in August from a year prior, and 16% from August of 2019. Texas experienced an even steeper increase of 30% from August 2020, and 10% versus August of 2019.**

When we look at YTD total tax revenue % change from pre-pandemic levels and the change in 10yr spreads over the same period, we find that, generally, states which saw greater improvement in tax collections also saw more compression in spreads (Exhibit 12).

Exhibit 12: Generally, states which saw greater improvement in tax collections YTD in 2021 compared to the pre-pandemic period, also saw more compression in spreads

10yr Spreads vs YTD total tax revenue yoy % change



Source: Refinitiv TM3, Individual state monthly tax reports, J.P. Morgan. Note: % change in spreads calculated from 9/9/2019 to 9/7/2021. New York, New Mexico, and Missouri excluded from the dataset as outliers.

Income tax collections show similar trend, with PIT collections up an average of 20.6% in YTD 2021 versus same period 2020

We further evaluate 40 states which report personal income tax collections on a monthly basis. YTD PIT collections increased an average of 20.6% over the prior year, and 15.8% over the similar period in 2019. As with total tax collections, the majority of states saw growth in PIT collections in 2021, as just three states have reported revenue declines (New Jersey, New Mexico, and North Dakota). When compared to 2019, six states showed a decline in revenues (New Jersey, Maryland, Connecticut, New Mexico, West Virginia, and North Dakota). New Jersey, New Mexico, and North Dakota saw declines over both periods, which could indicate more persistent factors are impacting state PIT revenues.

Normalizing the data to look at the 33 states that have reported July PIT receipts, average 2021 YTD revenue growth versus the same period in 2020, was slightly lower at 18.0%. When compared to 2019, the increase in revenues was 17.1%.

In 2020, we saw spiking unemployment rates at the start of the pandemic with elevated rates lingering for months, dampening monthly withholding and PIT

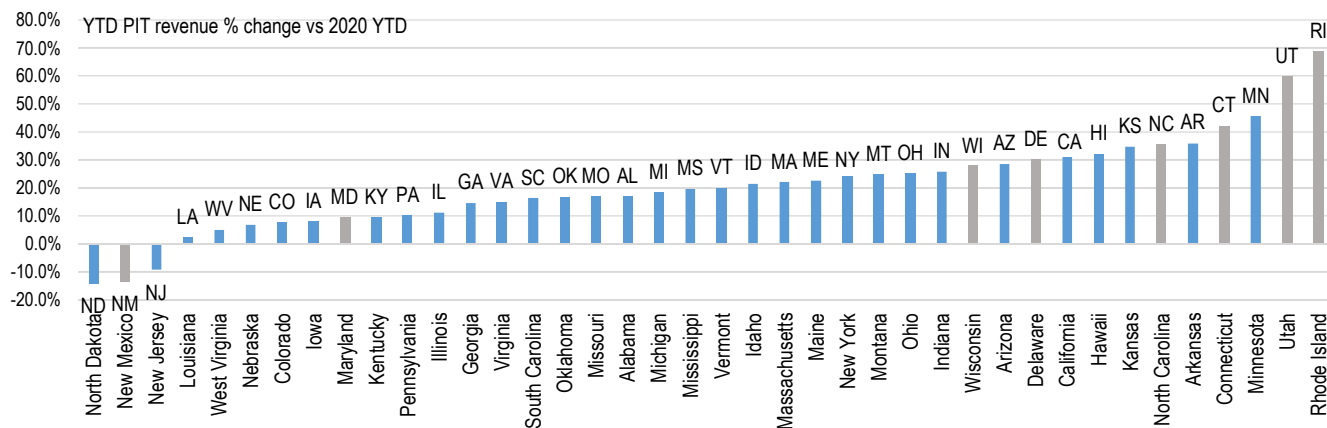
revenue. While unemployment remains above pre-pandemic levels in the U.S. overall, rates have improved significantly (5.2% as of July 2021), boosting PIT collections.

Of the six states with the greatest revenue growth (Rhode Island +68.7%, Utah +59.8%, Minnesota +45.5%, Connecticut +42.0%, Arkansas +35.8%, North Carolina +35.5%), four have not reported July 2021 figures (RI, UT, CT, NC) (Exhibit 13). We note that it is likely that yoy increases will moderate somewhat for these states, given the July 2020 PIT surge which is not captured in the figures for these states. Again, due to extension of the federal tax filing deadline was to July in 2021, with most states following suit, which resulted in delayed of PIT collections.

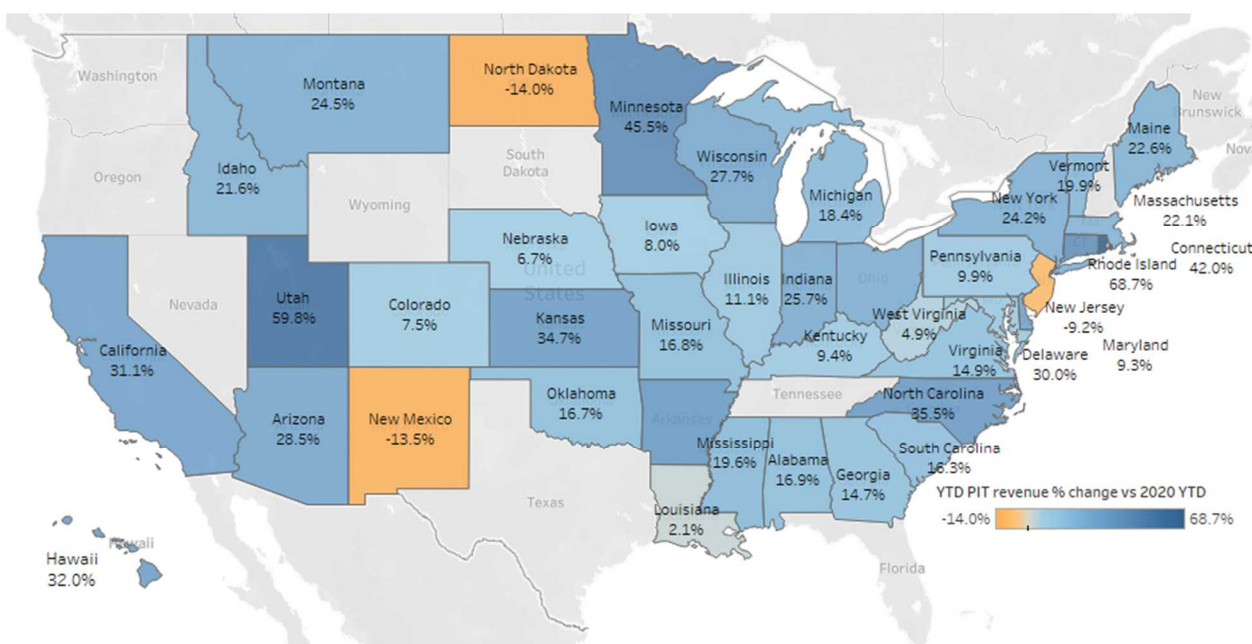
Versus the pre-pandemic period in 2019, Idaho (+38.8%), Arkansas (+35.3%), Delaware (+32.8%), Maine (+30.7%), and Rhode Island (+30.4%) saw the greatest increases in PIT revenues.

Exhibit 13: YTD PIT collections increased an average of 20.6% over the prior year

YTD income tax receipts % change vs 2020 YTD



YTD income tax receipts % change vs 2020 YTD



Source: Individual state monthly tax reports, J.P. Morgan. Note: Oregon, Wyoming, and Alaska do not provide monthly tax data. Texas, Florida, Washington, Tennessee, Nevada, New Hampshire, and South Dakota do not report monthly PIT revenues. Bars in gray indicate July data is not yet available

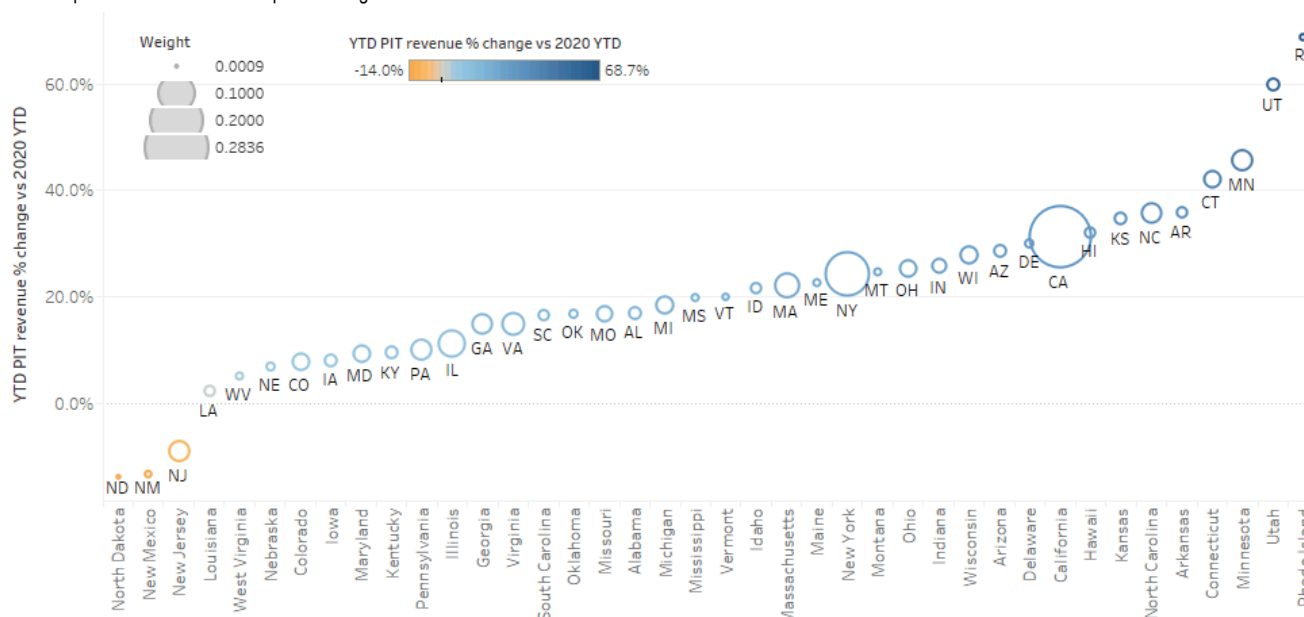
Aggregate state income tax receipts as a proportion of total state income increased slightly to 49.5% for YTD 2021, an increase of 0.7 percentage-points vs 2020. **This outcome results from some larger weighted states seeing stronger growth in income tax collections, such as California (28.4% weight, +31.1% YoY PIT), New York (14.2% weight, +24.2% YoY PIT), and Massachusetts (4.3% weight, +22.1% YoY PIT) (Exhibit 14). Using a weighted average, PIT collections increased 23.4% in YTD 2021 compared to 2020 (vs 20.6% simple avg).** Given that income tax makes up a significant portion of total tax revenues for many states, this signals stabilization in tax revenue, particularly as the labor market has seen a relatively steady recovery trajectory thus far in 2021.

Versus the pre-pandemic period, the proportion of total tax collections from PIT revenues increased by 1.4 percentage-points in 2021. **Using a weighted average, PIT collections increased 20.0% in YTD 2021 compared to the 2019 period (vs 15.8% simple avg).**

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Exhibit 14: Certain larger weighted states saw stronger growth in income tax collections (CA, NY, MA, etc.). Using a weighted average, PIT collections increased 23.4% in YTD 2021 compared to 2020 (vs 20.6% simple avg)

YTD 2021 personal income tax receipts % change vs YTD 2020



Source: Individual state monthly tax reports, J.P. Morgan. Note: Size of circles based on proportionate contribution of states' PIT revenue to total 40 state aggregate PIT revenue

Sales tax collections show improvement as well, albeit somewhat less accelerated than aggregate collections and PIT collections

For sales tax collections, average YTD revenue collections are higher by 15.7% for YTD 2021 vs 2020, and 12.7% vs the same period in 2019. **Here, we witness an even wider variance between states from 2020 to 2021, with states such as Kansas and Mississippi reporting YTD yoy declines of 16.1% and 15.5%, respectively, while the top gaining states of Delaware and Michigan report YTD yoy gains of 52.4% and 36.9%, respectively (Exhibit 15).**

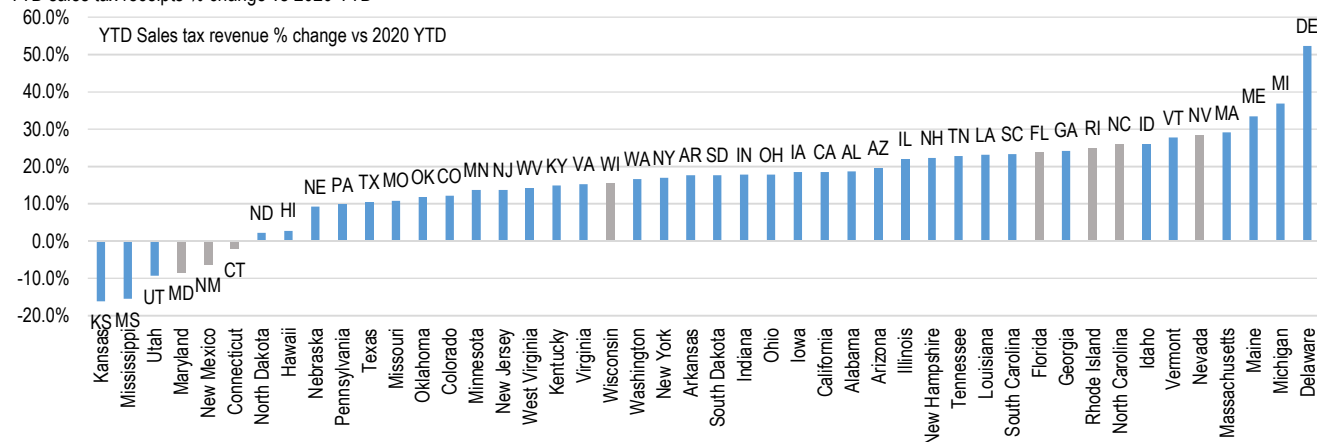
Normalizing the data, for the 38 states that have reported July sales tax receipts, average 2021 YTD revenue growth versus the same period in 2020 was 17.1%. When compared to 2019, the increase in revenues was 13.9%.

Certain tourism-dependent states (Nevada +28.4%, Florida +23.7%) saw significant improvement in sales tax revenue in 2021, as widespread vaccination and relaxed restrictions in the spring of 2021, combined with pent up consumer demand, supported economic recovery in these areas.

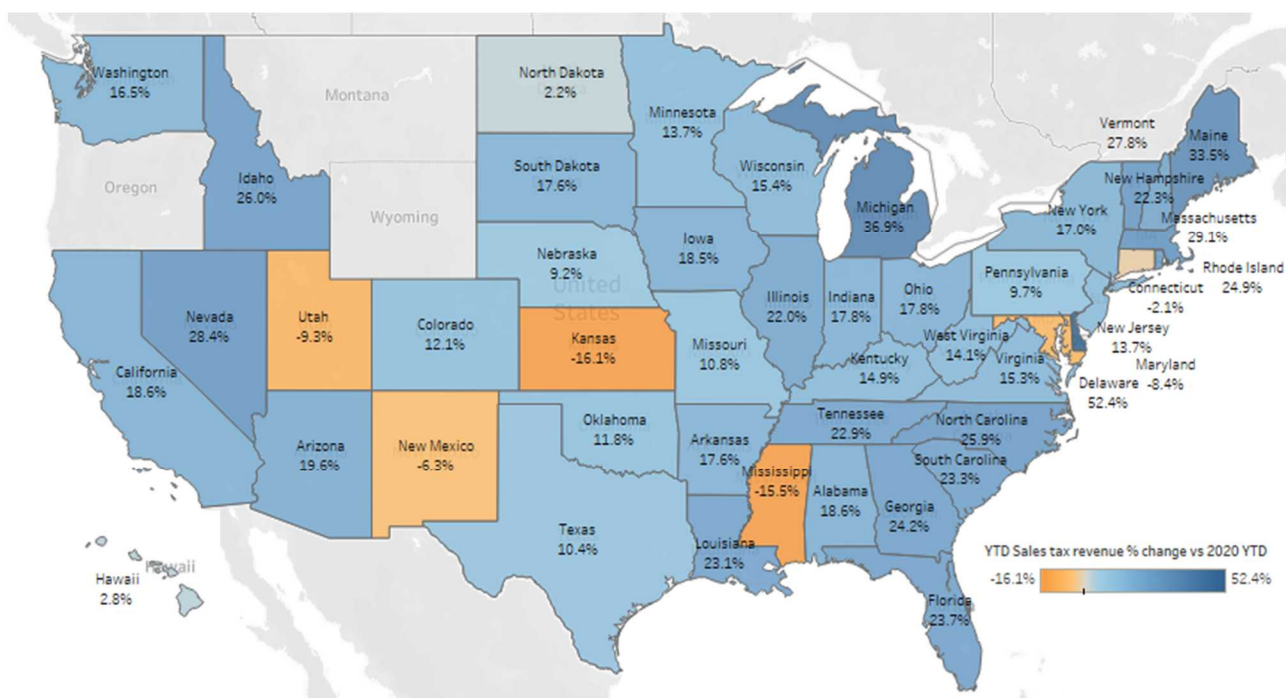
Ye Tian
(1-212) 834-3051
ye.tian@jpmorgan.com

Exhibit 15: For sales tax collections, average YTD revenue collections are higher by 15.7% for YTD 2021 vs 2020

YTD sales tax receipts % change vs 2020 YTD



YTD sales tax receipts % change vs 2020 YTD



Source: Individual state monthly tax reports, J.P. Morgan. Note: Bars in gray indicate July data is not yet available

Using a weighted average, sales tax collections increased 14.3% in YTD 2021 compared to 2020, as compared to 15.7% when using a simple average. In contrast to the trend in PIT taxes, a number of more heavily weighted states saw more moderate growth in sales tax collections YTD in 2021 vs 2020, resulting in weaker average growth overall, such as Pennsylvania (weight 2.9%, +9.7% yoy change), Texas (weight 6.8%, +10.4% yoy change), and New Jersey (weight 10.8%, +13.7% yoy change) (Exhibit 16). **Versus the pre-pandemic period, sales tax collections increased 10.9% for YTD 2021 compared to the 2019 period using a weighted average, versus the 12.7% simple average.**

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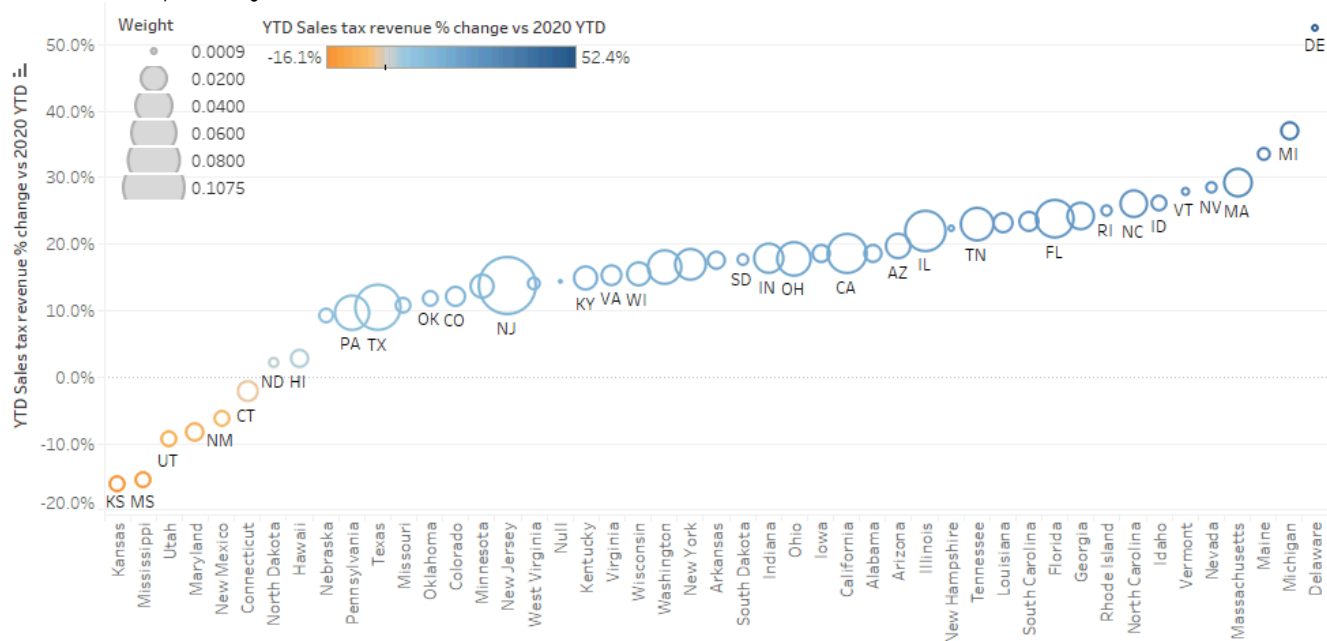
US Fixed Income Strategy
10 September 2021

J.P.Morgan

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Exhibit 16: Using a weighted average, sales tax collections increased 14.3% in YTD 2021 compared to 2020, as compared to 15.7% when using a simple average

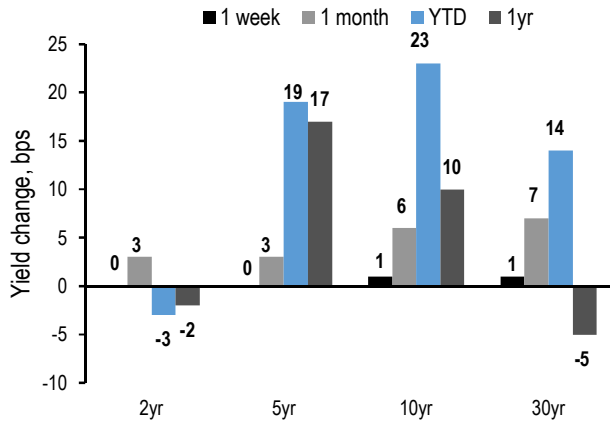
YTD sales tax receipts % change vs 2020 YTD



Source: Individual state monthly tax reports, J.P. Morgan

Markets at a glance

YTD, yields across the HG curve have decreased by 3bps in the 2yr spot and increased by 19-23-14bps in 5-10-30yr spots



Source: Refinitiv, J.P. Morgan

We expect 10yr municipal high-grade yields to reach 1.35% by 4Q21

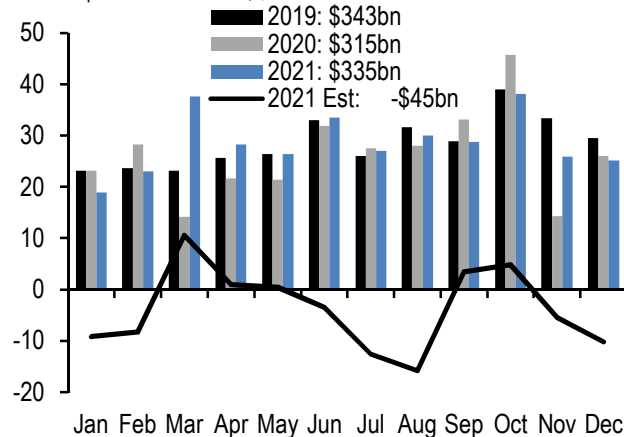
Yields, %

| Treasury | 9/10/2021 | 1mo ahead | 4Q21 Forecast | 1Q22 Forecast | 2Q22 Forecast | 3Q22 Forecast |
|------------------|-----------|-----------|---------------|---------------|---------------|---------------|
| 2yr | 0.22 | 0.25 | 0.30 | 0.40 | 0.45 | 0.50 |
| 5yr | 0.81 | 0.90 | 1.05 | 1.10 | 1.35 | 1.45 |
| 10yr | 1.34 | 1.45 | 1.75 | 1.85 | 2.00 | 2.10 |
| 30yr | 1.93 | 2.10 | 2.40 | 2.50 | 2.65 | 2.70 |
| AAA Tax-exempt | | | | | | |
| 2yr | 0.11 | 0.15 | 0.15 | 0.25 | 0.30 | 0.35 |
| 5yr | 0.41 | 0.45 | 0.55 | 0.75 | 0.95 | 1.00 |
| 10yr | 0.94 | 1.10 | 1.35 | 1.45 | 1.60 | 1.65 |
| 30yr | 1.53 | 1.70 | 1.85 | 2.00 | 2.15 | 2.20 |
| AAA / TSY Ratios | | | | | | |
| 2yr | 51% | 60% | 50% | 63% | 67% | 70% |
| 5yr | 50% | 50% | 52% | 68% | 70% | 69% |
| 10yr | 70% | 76% | 77% | 78% | 80% | 79% |
| 30yr | 79% | 81% | 77% | 80% | 81% | 81% |

Source: Bloomberg Finance L.P., Refinitiv, J.P. Morgan

We project 2021 tax-exempt gross supply of \$335bn with net supply of -\$45bn

Tax-exempt issuance Forecast, \$bn



Source: Bloomberg Finance L.P., Refinitiv, J.P. Morgan

Benchmark municipals look fair value vs Corporates

AAA tax-exempt yield / Treasury yield (%)

| | Last | Min | Max | Mean | St. Dev. | Z-score | |
|------|------|------|------|------|----------|---------|------|
| | | | | | | 3yr | 5yr |
| 2yr | 51.1 | 24.9 | 77.3 | 47.9 | 12.5 | -0.5 | -0.6 |
| 5yr | 52.2 | 45.4 | 59.4 | 52.0 | 3.4 | -0.6 | -0.7 |
| 10yr | 72.3 | 56.8 | 72.3 | 66.8 | 3.4 | -0.5 | -0.6 |
| 30yr | 80.6 | 63.5 | 80.6 | 73.3 | 4.7 | -0.7 | -0.9 |

AA corporate yield - AA tax-exempt yield (bp)

| | Last | Min | Max | Mean | St. Dev. | Z-score | |
|--------|------|-----|-----|------|----------|---------|------|
| | | | | | | 3yr | 5yr |
| 3-5yr | 65 | 52 | 74 | 63 | 5 | -0.4 | -0.6 |
| 5-7yr | 71 | 66 | 86 | 75 | 4 | -0.5 | -0.7 |
| 7-10yr | 80 | 75 | 101 | 85 | 5 | -0.5 | -0.6 |
| 25yr | 106 | 106 | 145 | 122 | 10 | 0.2 | 0.5 |

values over last 3 months displayed, as of , Z-Score +/- 1.5 Rich / Cheap

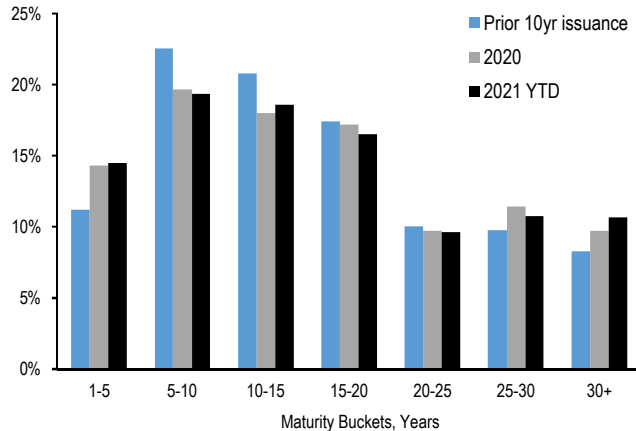
yy indicates rich yy indicates cheap

Source: TRACE, Refinitiv, J.P. Morgan

YTD Issuance and Trading Trends

30yr+ maturities are about 11% of YTD issuance

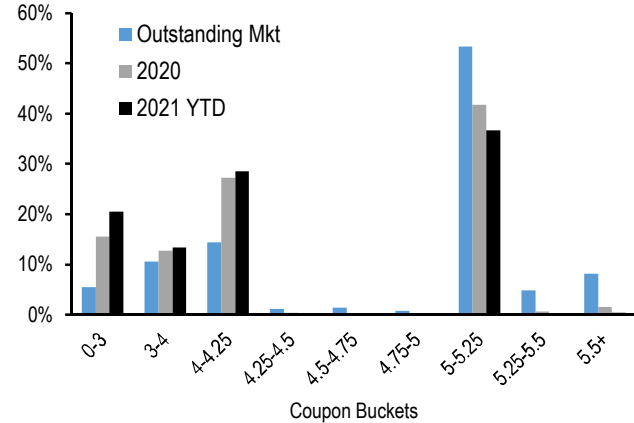
Proportion of issuance, %



Note: Long term, fixed coupon, tax-exempt bonds only
Source: ICE, J.P. Morgan

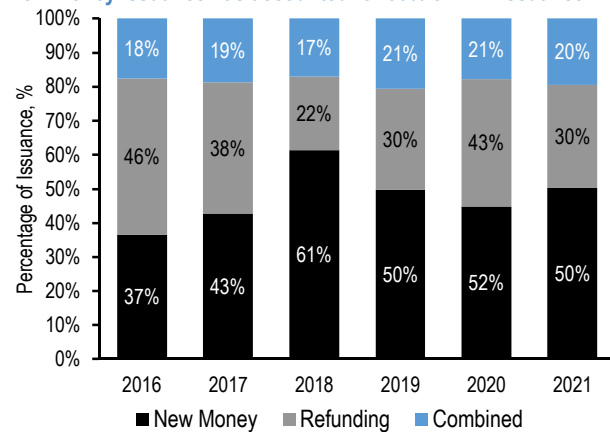
42% of YTD issuance has been in 3-4.25% coupon bonds

Proportion of issuance, %



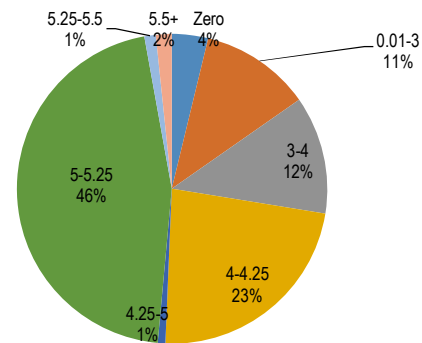
Note: Long term, fixed coupon, tax-exempt bonds only
Source: ICE, J.P. Morgan

New Money issuance has accounted for 50% of YTD issuance



Note: Long term bonds only
Source: Bloomberg Finance L.P., J.P. Morgan

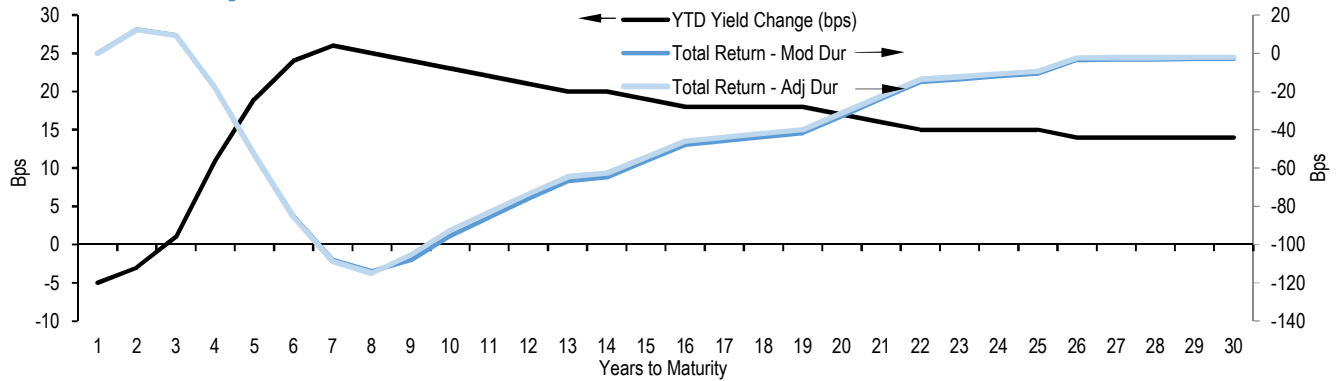
3% to 4% coupon bonds have accounted for 12% of YTD trading volume



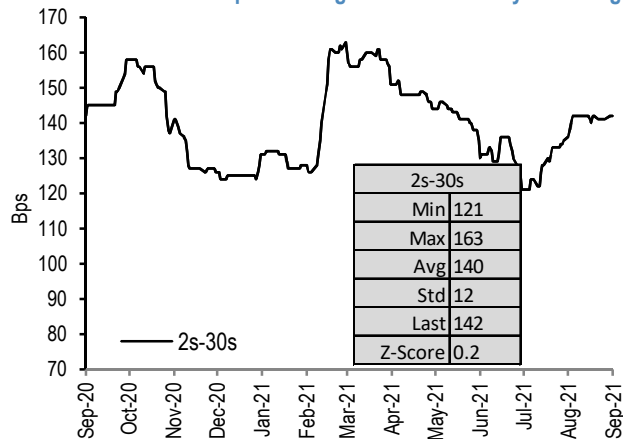
Note: Long term, fixed coupon, tax-exempt bonds only
Source: MSRB, ICE, J.P. Morgan.

YTD Total return and Curve Spreads

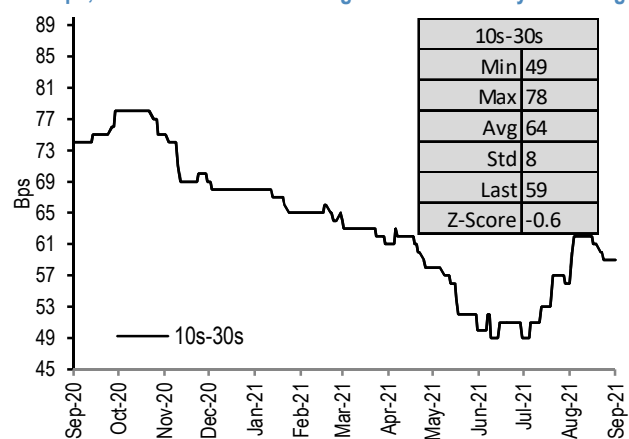
YTD total returns are negative across most of the curve



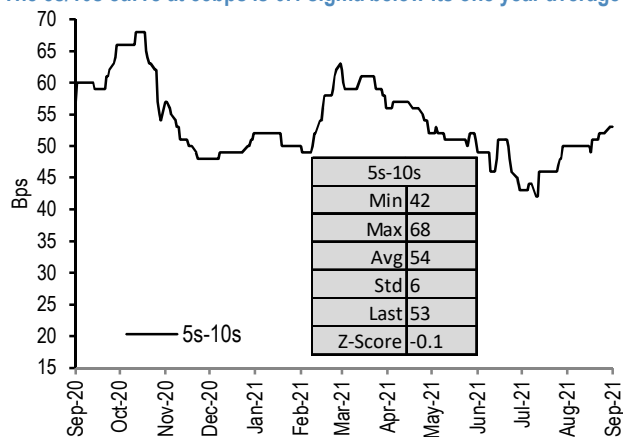
The 2s/30s curve at 142bps is 0.2 sigma above its one year average



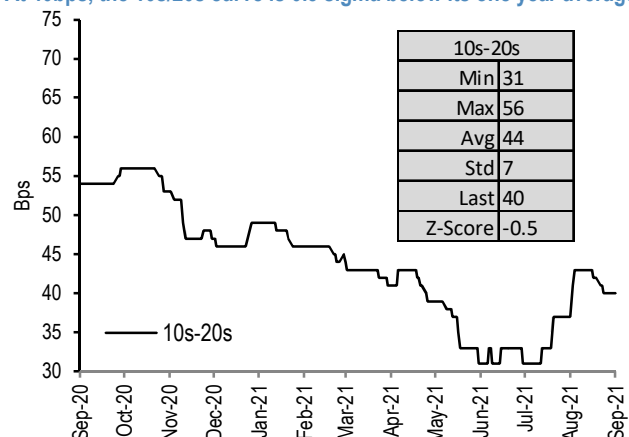
At 59bps, the 10s/30s curve is 0.6 sigma below its one year average



The 5s/10s curve at 53bps is 0.1 sigma below its one year average



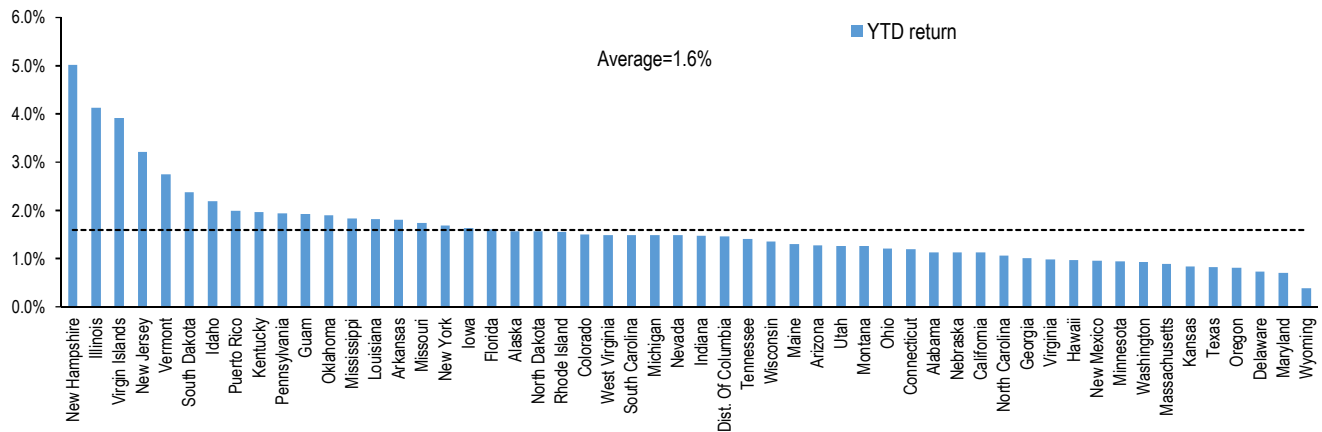
At 40bps, the 10s/20s curve is 0.5 sigma below its one year average



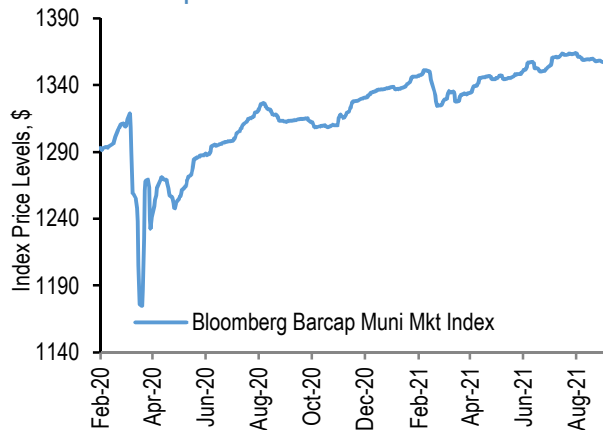
Source: Thomson Reuters, Bloomberg Finance L.P., J.P. Morgan. Note: As of 9/10/2021

Total return by State and Sector

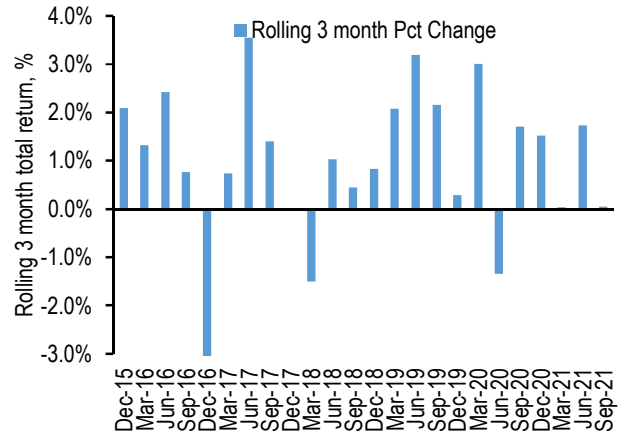
The average YTD total return for Bloomberg municipal bond indices by state is 1.6%



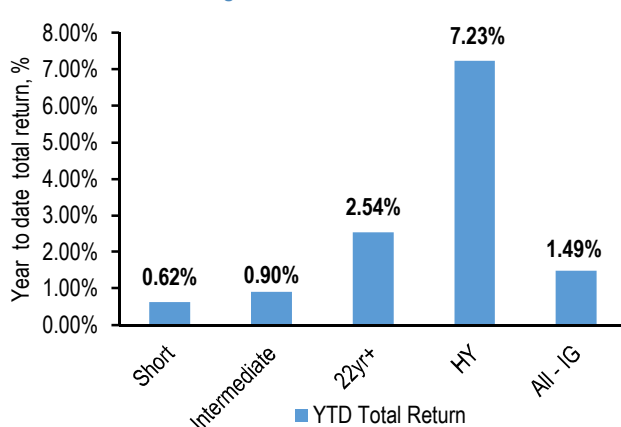
The broader municipal market has returned 1.49%



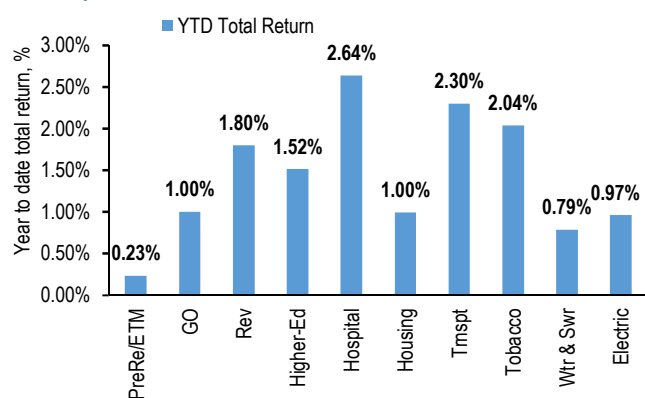
The Bloomberg Muni index has increased 0.05% in the three months between 6/10/2021 and 9/10/2021



The HY index has the highest YTD returns, of 7.23%



The Hospital sector exhibits the best YTD return of 2.64%



Source: Bloomberg Finance L.P., J.P. Morgan, as of 9/10/2021. Note: Total return calculated as the percentage change in index levels. Bloomberg Municipal bond total return indices used

Glossary of Publication Topics

Sector Overviews

- Airports: [03/11/2016](#), [05/20/2016](#), [11/18/2016](#), [12/08/2017](#), [04/13/2018](#), [04/20/2018](#), [09/06/2019](#), [05/15/2020](#), [06/11/2021](#)
- Bond Insurance: [03/18/2016](#), [6/23/2017](#), [10/27/2017](#)
- Double-Barreled Bonds: [05/13/2016](#), [6/24/2016](#)
- Energy: [01/22/2016](#), [01/29/2016](#), [02/05/2016](#), [02/19/2016](#), [04/23/2021](#)
- Environmental, Social, Governance (ESG)/Green Bonds: [04/10/2015](#), [06/01/2018](#)
- Housing: [04/17/2015](#), [1/20/2017](#), [10/20/2017](#), [07/26/2019](#), [08/02/2019](#)
- Healthcare: [04/29/2016](#), [1/27/2017](#), [3/03/2017](#), [1/19/2018](#), [1/28/2019](#), [2/1/2019](#), [01/24/2020](#), [10/16/2020](#), [01/22/2021](#)
- Higher-Education: [12/18/2015](#), [01/08/2016](#), [3/03/2017](#), [5/19/2017](#), [9/14/2018](#), [07/24/2020](#)
- High/Enhanced Yield: [9/8/2017](#), [9/15/2017](#), [7/27/2018](#), [8/03/2018](#), [05/08/2020](#), [05/15/2020](#), [06/05/2020](#), [06/12/2020](#), [08/28/2020](#)
- Local Government Credit: [11/23/2016](#), [4/07/2017](#), [11/10/2017](#), [06/18/2021](#)
- Low beta/defensive: [08/25/2017](#)
- Pensions: [10/14/2016](#), [11/23/2016](#), [10/20/2017](#), [10/27/2017](#), [11/03/2017](#), [10/12/2018](#), [10/19/2018](#), [10/26/2018](#), [04/05/2019](#), [04/17/2019](#), [08/16/2019](#), [08/23/2019](#), [10/18/2019](#)
- Pre-paid Gas: [3/10/2017](#), [06/07/2019](#)
- Pre-refunded bonds: [1/29/2018](#)
- Primary and secondary (K-12) education: [11/02/2018](#)
- Public Power/Electric: [05/06/2016](#), [6/02/2017](#), [2/09/2018](#), [02/19/2021](#)
- U.S. Ports: [04/15/2016](#), [05/20/2016](#), [11/18/2016](#), [04/06/2018](#)
- Secured Credits: [08/07/2015](#), [09/18/2015](#), [09/25/2015](#)
- Special Tax Bonds: [05/01/2015](#), [07/31/2015](#), [09/25/2015](#), [01/29/2016](#), [5/5/2017](#), [09/29/2017](#), [5/18/2018](#), [04/26/2019](#), [05/03/2019](#), [01/31/2020](#)
- States: [06/26/2015](#), [02/26/2016](#), [6/24/2016](#), [8/5/2016](#), [11/23/2016](#), [11/03/2017](#)
- SIFMA/Floating Rate notes: [03/15/2016](#), [08/26/2016](#), [3/31/2017](#), [4/28/2017](#), [04/13/2018](#), [9/14/2018](#), [02/20/2019](#), [04/26/2019](#)
- Taxable bonds: [02/23/2018](#), [5/11/2018](#), [12/14/2018](#), [03/29/2019](#), [05/31/2019](#), [09/27/2019](#), [04/03/2020](#), [07/10/2020](#), [07/24/2020](#), [08/14/2020](#), [08/21/2020](#), [10/16/2020](#), [10/23/2020](#)
- Toll Roads: [02/20/2015](#), [9/16/2016](#), [5/12/2017](#), [09/15/2017](#), [07/10/2020](#)
- Tobacco: [11/20/2015](#), [12/15/2017](#), [7/27/2018](#), [03/29/2019](#), [05/07/2021](#)
- Water & Sewer: [05/06/2016](#), [6/24/2016](#), [02/02/2018](#)

Specific Credits

- Assured Guaranty: [03/18/2016](#), [6/23/2017](#), [10/27/2017](#)
- National Public Finance Guarantee Corporation: [6/23/2017](#), [10/27/2017](#)
- Chicago & related credits: [09/25/2015](#), [10/30/2015](#), [9/23/2016](#), [2/10/2017](#), [04/13/2018](#), [10/25/2019](#), [02/07/2020](#), [06/12/2020](#), [10/23/2020](#), [02/19/2021](#)
- Detroit: [05/14/2021](#)
- Dallas/Fort Worth & related credits: [02/19/2016](#), [12/16/2016](#), [3/10/2017](#), [6/02/2017](#), [08/04/2017](#), [04/13/2018](#)
- Houston & related credits: [02/19/2016](#), [6/02/2017](#), [08/04/2017](#), [09/01/2017](#)
- New York City & related credits: [03/31/2015](#), [6/17/2016](#), [9/9/2016](#), [8/17/2018](#), [08/23/2019](#), [06/12/2020](#), [05/21/2021](#)
- Puerto Rico: [07/08/2016](#), [07/29/2016](#), [8/19/2016](#), [1/27/2017](#), [3/17/2017](#), [5/5/2017](#), [5/12/2017](#), [6/02/2017](#), [09/22/2017](#), [5/04/2018](#), [9/7/2018](#), [02/22/2019](#), [04/26/2019](#), [05/10/2019](#), [05/17/2019](#), [02/21/2020](#), [03/05/2021](#), [04/30/2021](#)
- Philadelphia & related credits: [12/12/2014](#), [07/20/2015](#)
- Santee Cooper / MEAG / Westinghouse Bankruptcy: [3/17/2017](#), [3/24/2017](#), [3/31/2017](#), [9/21/2018](#), [9/28/2018](#)
- Seattle: [9/23/2016](#)
- State of Arizona: [05/15/2015](#), [11/18/2016](#)
- State of Alaska: [07/28/2017](#), [06/15/2018](#)
- State of California & locals: [04/24/2015](#), [04/08/2016](#), [8/19/2016](#), [9/30/2016](#), [11/4/2016](#), [03/02/2018](#), [03/09/2018](#), [06/08/2018](#), [02/05/2021](#)
- State of Connecticut & locals: [08/18/2017](#), [5/18/2018](#), [10/04/2019](#), [05/01/2020](#)
- State of Florida & locals: [03/06/2015](#), [09/25/2015](#)

- State of Illinois & related credits: [6/09/2017](#), [6/16/2017](#), [7/07/2017](#), [9/29/2017](#), [7/13/2018](#), [1/11/2019](#), [03/01/2019](#), [05/31/2019](#), [07/26/2019](#), [02/28/2020](#), [05/01/2020](#), [02/19/2021](#)
- State of New York: [5/16/2014](#), [09/29/2017](#), [2/8/2019](#)
- State of New Jersey & locals: [6/17/2016](#), [8/05/2016](#), [3/24/2017](#), [3/31/2017](#), [4/27/2018](#), [5/04/2018](#), [03/15/2019](#), [05/01/2020](#), [05/21/2021](#), [06/04/2021](#)
- State of Pennsylvania: [7/15/2016](#)
- State of Texas & locals: [10/2/2015](#), [02/05/2016](#), [07/28/2017](#), [08/04/2017](#), [08/16/2019](#), [03/12/2021](#), [03/19/2021](#)
- State of Wisconsin & locals: [03/15/2015](#), [9/30/2016](#)
- U.S. Virgin Islands & Guam: [07/15/2016](#), [07/29/2016](#), [2/24/2017](#)

Defaults/Distressed Munis

- Chapter 9/Distressed locals: [10/31/2014](#), [11/21/2014](#), [06/30/2015](#), [07/08/2016](#), [04/26/2019](#), [01/31/2020](#), [02/07/2020](#)
- Defaults: [04/15/201606/17/2016](#), [07/08/2016](#), [08/26/2016](#), [04/23/2020](#), [07/24/2020](#)
- GO Security/Statutory Lien: [10/2/2015](#), [11/4/2016](#)

Tax Policy

- AMT: [05/20/2016](#), [11/18/2016](#), [03/16/2018](#), [5/18/2018](#), [10/19/2018](#), [06/14/2019](#)
- Deminimis: [5/31/2013](#), [1/3/2014](#), [12/9/2016](#), [03/02/2018](#), [06/14/2019](#)
- State and local tax (SALT) deduction cap: [1/26/2018](#), [7/6/2018](#), [4/16/2021](#)
- Tax-exemption: [3/1/2013](#), [3/15/2013](#), [05/20/2016](#)
- Tax swapping: [1/24/2014](#), [10/28/2016](#), [2/09/2018](#), [10/12/2018](#), [11/15/2019](#)
- Tax reform: [2/28/2014](#), [12/16/2016](#), [4/28/2017](#), [5/05/2017](#), [6/16/2017](#), [09/29/2017](#), [10/27/2017](#), [11/03/2017](#), [11/10/2017](#), [1/26/2018](#)

Other Federal Public Policy

- COVID-19: [03/06/2020](#), [03/13/2020](#), [03/20/2020](#), [03/27/2020](#), [04/03/2020](#), [04/17/2020](#), [06/26/2020](#), [07/31/2020](#), [01/08/2021](#), [02/26/2021](#)
- CARES Act: [04/03/2020](#)
- American Rescue Plan: [03/26/2021](#), [04/09/2021](#), [05/21/2021](#)
- Infrastructure spending: [04/09/2021](#), [05/14/2021](#)
- Fed facilities/Municipal Liquidity Facility: [8/11/2020](#)
- Regulatory reform/High-Quality Liquid Assets: [04/01/2016](#), [07/14/2017](#), [03/09/2018](#), [8/24/2018](#)
- Health-care reform/Medicaid funding: [3/10/2017](#), [3/17/2017](#), [3/24/2017](#), [6/23/2017](#), [07/28/2017](#), [11/22/2017](#)
- Trade war and tariffs: [04/06/2018](#), [06/07/2019](#)

Periodic Updates

- Coupon performance: [5/9/2014](#), [10/17/2015](#), [04/08/2016](#), [9/21/2018](#), [03/15/2019](#), [06/14/2019](#), [06/28/2019](#), [10/18/2019](#)
- Default rates: [10/17/2015](#), [11/20/2015](#), [06/24/2016](#), [8/24/2018](#)
- Federal Reserve Flow of Funds: [12/07/2018](#), [03/08/2019](#), [06/14/2019](#), [09/27/2019](#), [01/10/2020](#), [03/27/2020](#), [06/26/2020](#), [09/25/2020](#), [12/11/2020](#), [06/18/2021](#)
- State and Local revenues: [6/16/2017](#), [9/29/2017](#), [01/05/2018](#), [04/13/2018](#), [9/21/2018](#), [1/11/2019](#), [05/17/2019](#), [06/21/2019](#), [09/20/2019](#), [01/10/2020](#), [04/17/2020](#), [09/11/2020](#), [09/18/2020](#), [11/13/2020](#), [01/29/2021](#), [06/18/2021](#)
- Make-Whole Call: [04/22/2016](#), [07/12/2019](#)
- Short call bonds: [03/04/2016](#), [3/3/2017](#), [3/10/2017](#), [08/04/2017](#), [03/26/2021](#)
- Taxable advance refunding: [09/06/2019](#), [09/13/2019](#), [10/25/2019](#), [10/16/2020](#)
- Total Return & Performance: [05/13/2016](#), [06/10/2016](#), [5/19/2017](#), [07/07/2017](#), [11/10/2017](#), [02/23/2018](#), [1/4/2019](#)
- Sovereign Government Relative Value: [09/09/2016](#), [01/19/2018](#), [8/17/2018](#)
- Appropriation debt: [8/19/2016](#)

Municipal Market Outlook

- 2021 Outlook: [11/24/2020](#)
- 2H21 Outlook: [06/25/2021](#)

Weekly Updates

- Economic and policy updates
- Next week's supply, Fund flows
- Comparisons versus Corporates, Treasuries, and Global Sovereigns
- Full year gross and net-supply estimates
- Interest rate forecast

Emerging Markets

-
- **In EM fixed income, we are OW EM sovereign credit, OW EM corporates and MW EM local rates**
 - **EM bond flows were +\$1.7bn (+0.30% of weekly AUM, up from +\$997mn)**
-

Weekly Summary

EM spreads were more rangebound this week after trend tightening in the prior 2 weeks. EMBIGD STW widened 1bp to 342bp, while CEMBI Broad STW remained relatively unchanged and GBI-EM rose by 6bp. EM bond funds increased to the highest level in 10 weeks as a moderate decline in hard currency bond fund inflows (+\$926mn vs. our model estimate of +\$924mn) was more than offset by the largest inflow in 10 weeks into local currency bond funds (+\$785mn vs. our model estimate of +\$197mn). Inflows were mainly into ETFs (+\$1bn) although also observed in non-ETFs (+\$689mn). Within local currency bond funds, inflows were pretty much all into China-related bond funds (+\$768mn) which had their largest inflow in six weeks, as EM ex-China bond fund flows were flat (+\$17mn).

Emerging Markets Outlook and Strategy: EM growth downgrades tarnish an otherwise improving risk backdrop

After an uncertainty-ridden summer, markets seem to be digesting the delta variant and Fed stance better, although China's policy-induced slowdown still weighs on the outlook. EM fixed income assets have rallied over the last month as concerns around the impact of the COVID-19 delta variant have morphed into an acceptance of an endemic virus. US data have softened as virus cases have increased, leading to less fear the Fed will unwind current policy supports faster. EM spreads have tightened 13bp for EM sovereigns over the past month and 18bp for EM corporates, helped also by China's support for systemically important credits. EM FX has rallied 1% from recent lows, while local rates moved 10bp higher given continuing EM central bank tightening. China's growth outlook remains a dampening force on an otherwise marginally improving EM environment which sees growth pick-up into 3Q and the DM outlook move more towards a slower near-term recovery pace. Last month we moved back to OW in EM sovereign credit, which should benefit in this environment and given spreads were around the year's wides, while staying OW EM corporates. We now take profits on our UW in EM rates, moving back to MW. For EM FX we stay MW, as it is difficult to get too optimistic on trend appreciation given an environment where global growth forecasts—particularly in China—are being marked down. Corporate bond QE program extended, but this is unlikely to offset the slowdown in weekly sovereign QE purchases unless the pace of corporate bond buying increases.

Within this context, stay OW on EM Sovereigns. We moved OW EMBIGD at the start of August with the view that valuations had cheapened and tail-risks abated enough to add incremental risk. With no hawkish surprises on taper timing from Jackson Hole, EMBIGD spreads have started to tighten. However we still remain 31bp above our end-2021 target of 310bp. The revision lower from our US rates colleagues for 10y UST year-end yields to 1.75% now equates to a better +1.3% full-

year total return forecast, with +0.5% to year-end. Technicals are somewhat balanced with expectations of strong supply over the coming months offset both by a marginal return of fund inflows as well as the external liquidity benefits from the SDR allocations. Meanwhile frontier special situations are returning to the forefront, although default concerns are limited in our view.

Specifically, we sustain a long commodity and mid-yielding Africa bias. We maintain a long oil exposure with OW Ghana, Qatar, and Colombia. Elsewhere in Africa, we stay OW Cote d'Ivoire, Mozambique, and Egypt, as well as UW Kenya. In EM Asia IG, we hold OW PHILIP versus UW MALAYS, similarly expressed in long-end bonds, and OW PLNII as a high beta expression of a positive Indonesia view. We are also OW MONGOL as an attractive yielding short-dated frontier credit. In Latin America, we are OW Colombia and Panama, versus UW in Peru. We maintain our IG UWs in both Poland and Kuwait. In outright and RV trades, we stay long Ukraine GDP warrants, long IRAQ 2023, and long PKSTAN 2024. In RV trades, we hold our existing curve trades and EUR versus USD RV trades in Romania and Mexico.

Technicals are somewhat balanced as supply pressures are offset by returning inflows and SDR allocations. We expect EM sovereign supply to remain strong over the coming months as nearly \$73.6bn (37% of 2021F) of forecast supply still remains to come, with nearly 40% of that from the MEA region. Since 2011, nearly 30% of the annual issuance has been issued between September and November, and we expect this year to be no different. This large supply pressure may somewhat be offset by EM hard currency bond fund inflows which reverted back to weekly inflows after three consecutive weeks of outflows over August. Recent inflows however have been concentrated into EM Asia-focused hard currency bond funds and as such may not benefit EM sovereigns more broadly. While still at early stages, recent SDR allocations may also help ease financing pressures, similar to what occurred recently in Colombia ([*Colombia: Three's company: IMF SDRs facilitate a BanRep deal with the Treasury*](#), B. Ramsey, 30 Aug 2021).

EM corporates outperformed in August amid the overall tightening in credit spreads, supported by the recovery in China credits. CEMBI Broad has delivered a +1.0% return since end-July, which is in line with other EM fixed income but beat US credit. China remained the driver of CEMBI performance during August as the recovery there supported the overall index after being a major drag in July. The rebound in Huarong contributed to the outperformance of China IG, as it tightened by -704bp to 454bp with a +34.4% return since end-July. This alleviated the drag on performance and followed the redemptions of recent maturities/calls and better clarity on the outlook following news of SOE-led capital injection. While China is still lagging quite meaningfully YTD at +49bp spread and -1.0% return vs ex-China at -25bp and +2.4%, China IG (-9bp, +0.3%) is actually tighter YTD with a marginally positive return, narrowing the gap versus IG ex-China (-25bp, +1.1%). The rest of Asia IG looks to have been separated from the uncertainty in China quasi-sovereigns triggered by Huarong, as CEMBI Broad Asia IG ex-China (-24bp, +1.4%) is outperforming the other EM IG regions YTD.

The main uncertainty stems from China HY and the Evergrande situation continues to indicate rising risks. We maintain OW CEMBI as we have been focusing on HY ex-China while the drag on performance should be contained. Evergrande has weakened further in recent weeks, with the average price falling below \$30, but Asia HY ex-China (-56bp, +4.2%) has actually outperformed the other regional HY segments, suggesting there has not really been contagion to the

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North America
10 September 2021

J.P.Morgan

rest of the Asia HY space. The weight of Evergrande itself has shrunk to 0.15% in CEMBI Broad and only 0.04% in the Diversified version of the index, limiting further drag on performance.

The risk is that a debt restructuring of Evergrande leads to pressure on other China real estate companies as well as the broader HY market. We are not too concerned about contagion to Asia ex-China HY or the other regional HY segments, as we find that the investor base and drivers are different. In addition, while China real estate HY is still sizable at 4.1% weight in the CEMBI Broad, it is meaningfully smaller at 1.1% in the Diversified version of the index to which most dedicated funds are benchmarked. As a result, we think the drag on the overall index should not be as prominent, especially given that the average spread of the sector is close to 1,200bp with a few of the riskier issuers already trading at stressed levels.

Forecasts & Analytics

Interest Rate Forecast

| | 10 Sep 21 | 10-Oct-21 1m ahead | 31-Dec-21 4Q21 | 31-Mar-22 1Q22 | 30-Jun-22 2Q22 | 30-Sep-22 3Q22 |
|----------------------|-----------|-----------------------|-------------------|-------------------|-------------------|-------------------|
| Rates | Forecast | Forecast | Forecast | Forecast | Forecast | Forecast |
| Effective funds rate | 0.080 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 |
| SOFR | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 |
| 3-month Libor | .114 | 0.150 | 0.175 | 0.150 | 0.150 | 0.150 |
| 2-year T-note | 0.22 | 0.25 | 0.30 | 0.40 | 0.45 | 0.50 |
| 3-year T-note | 0.45 | 0.45 | 0.50 | 0.70 | 0.80 | 0.85 |
| 5-year T-note | 0.82 | 0.90 | 1.05 | 1.10 | 1.35 | 1.45 |
| 7-year T-note | 1.12 | 1.20 | 1.50 | 1.60 | 1.85 | 1.95 |
| 10-year T-note | 1.34 | 1.45 | 1.75 | 1.85 | 2.00 | 2.10 |
| 20-year Treasury | 1.86 | 2.00 | 2.30 | 2.40 | 2.55 | 2.60 |
| 30-year T-bond | 1.93 | 2.10 | 2.40 | 2.50 | 2.65 | 2.70 |
| Curves | | | | | | |
| 2s/5s | 60 | 65 | 75 | 70 | 90 | 95 |
| 2s/10s | 112 | 120 | 145 | 145 | 155 | 160 |
| 5s/10s | 53 | 55 | 70 | 75 | 65 | 65 |
| 5s/30s | 112 | 120 | 135 | 140 | 130 | 125 |
| 10s/30s | 59 | 65 | 65 | 65 | 65 | 60 |

* EFR and SOFR forecasts reflect trailing 1m moving average as of the indicated date

Source: J.P. Morgan

Swap spread forecast*

| Sep 10, 2021 | |
|--------------------|---|
| 2-year swap spread | 7 |
| 5-year swap spread | 7 |

*Forecast uses matched maturity spreads

Source: J.P. Morgan

Economic forecast

%ch q/q, saar, unless otherwise noted

| | 20Q2 | 20Q3 | 20Q4 | 21Q1 | 21Q2 | 21Q3 | 21Q4 | 2019* | 2020* | 2021* |
|-------------------------------------|-------|------|------|------|------|------|------|-------|-------|-------|
| Gross Domestic Product | | | | | | | | | | |
| Real GDP | -31.2 | 33.8 | 4.5 | 6.3 | 6.6 | 7.0 | 3.0 | 2.6 | -2.3 | 5.7 |
| Final Sales | -27.6 | 25.9 | 3.4 | 9.1 | 7.9 | 2.6 | 2.2 | 2.9 | -2.6 | 5.4 |
| Domestic Final Sales | -27.3 | 29.9 | 5.0 | 10.4 | 7.9 | 2.4 | 4.2 | 2.5 | -1.3 | 6.2 |
| Business Investment | -30.3 | 18.7 | 12.5 | 12.9 | 9.3 | 5.0 | 6.6 | 3.1 | -3.8 | 8.4 |
| Net Trade (% contribution to GDP) | 1.5 | -3.3 | -1.7 | -1.6 | -0.2 | 0.0 | -2.1 | 0.4 | -1.3 | -0.8 |
| Inventories (% contribution to GDP) | -4.0 | 6.8 | 1.1 | -2.6 | -1.3 | 4.4 | 0.8 | -0.4 | 0.4 | 0.3 |
| Prices and Labor Cost | | | | | | | | | | |
| Consumer Price Index | -3.1 | 4.7 | 2.4 | 3.7 | 8.4 | 6.9 | 3.4 | 2.0 | 1.2 | 5.6 |
| Core | -1.1 | 4.0 | 1.8 | 1.2 | 8.1 | 6.0 | 3.1 | 2.3 | 1.6 | 4.6 |
| Employment Cost Index | 2.3 | 2.0 | 2.9 | 3.7 | 2.8 | 2.2 | 2.1 | 2.7 | 2.5 | 2.7 |
| Unemployment Rate (% sa) | 13.1 | 8.8 | 6.8 | 6.2 | 5.9 | 5.2 | 5.0 | - | - | - |

Source: J.P. Morgan

Financial markets forecast

| Credit Spread | Current | YE 2021 | | Current | YE 2021 |
|---|---------|---------|-------------------|---------|---------|
| 5Y swap spread* | 9 | 5 | S&P 500** (level) | 4509 | 4400 |
| FNMA 30yr 2.0% Front Tsy OAS | -10.7 | 0 | Brent* (\$/oz) | 73 | 73 |
| 10Y AAA 30% New Issue CMBS** | 68 | 85 | Gold* (\$/oz) | 1818 | 1500 |
| 3Y AAA Credit Cards fixed** | 2 | 7 | EUR/USD | 1.18 | 1.16 |
| JULI portfolio spread*† | 112 | 110 | USD/JPY | 110 | 112 |
| High Yield Index*† | 395 | 375 | | | |
| Emerging Market Index† | 346 | 325 | | | |
| Corporate Emerging Market Index (Broad)*† | 251 | 225 | | | |

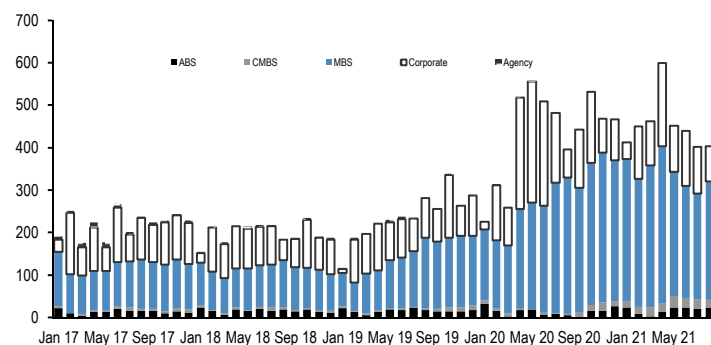
* spread to Treasuries

** spread to swaps

† Year-end forecasts only

Source: J.P. Morgan

Gross fixed-rate product supply*



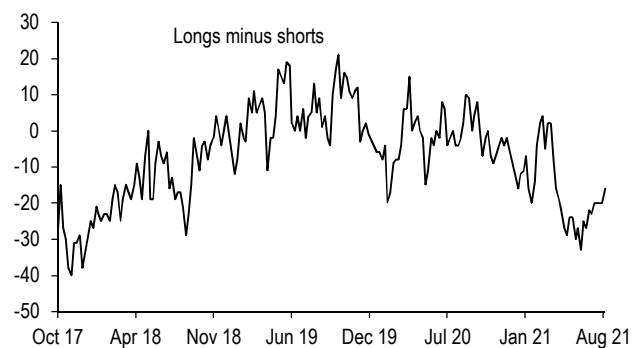
*amount in \$ billions

Source: J.P. Morgan

Treasury Client Survey

| Duration | Long | Neutral | Short | Changes |
|-----------------|------|---------|-------|---------|
| Sep 6, 2021 | 7 | 58 | 35 | 13 |
| Aug 29, 2021 | 11 | 58 | 31 | 16 |
| 3-month average | 10 | 40 | 50 | 10 |

Source: J.P. Morgan



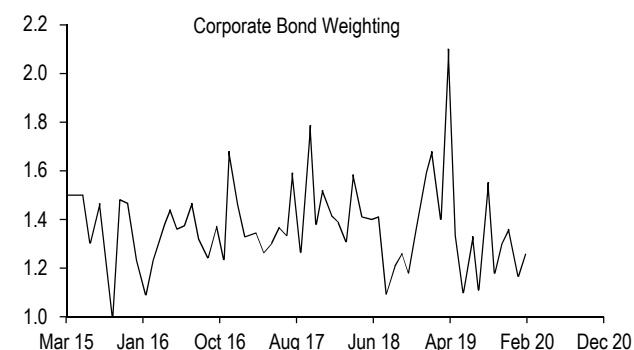
Source: J.P. Morgan

Credit Client Survey

| Credit | Corporate Bond Weighting | Cash Position | Spread Outlook |
|-----------------|--------------------------|---------------|----------------|
| Feb 4, 2020 | 1.26 | 0.77 | 1.57 |
| Jan 8, 2020 | 1.17 | 1.03 | 0.83 |
| 3-month average | 1.26 | 0.86 | 1.28 |

*Corporate bond weighting index is the ratio of the sum of overweights and neutral positions to the sum of underweights and neutral positions; the cash position index is the ratio of the sum of high and medium cash positions to the sum of low and medium positions; the spread outlook index is the ratio of the sum of positive and neutral outlooks to the sum of negative and neutral outlooks.

Source: J.P. Morgan

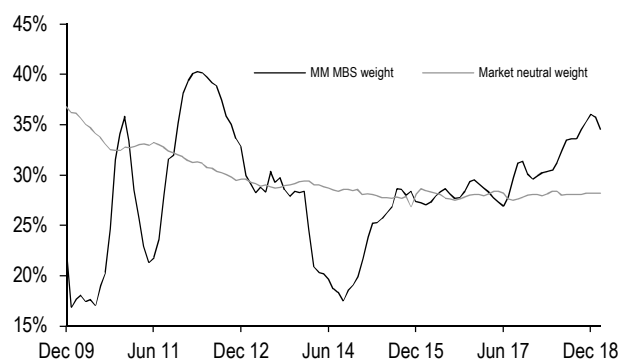


Source: J.P. Morgan

MBS Investor Survey

| MBS | MM MBS weight | Market weight |
|-----------------|---------------|---------------|
| February 2019 | 34.54% | 28.20% |
| January 2019 | 35.76% | 28.20% |
| 3-month average | 35.45% | 28.20% |

Source: J.P. Morgan



Source: J.P. Morgan

Market Movers Calendar

| Monday | Tuesday | Wednesday | Thursday | Friday |
|--|---|---|--|---|
| 13 Sep Federal budget (2:00pm) Aug | 14 Sep NFIB survey (6:00am) Aug CPI (8:30am) Aug <u>0.4%</u> Core <u>0.31%</u> | 15 Sep Empire State survey (8:30am) Sep <u>17.0</u> Import prices (8:30am) Aug <u>0.0%</u> Industrial production (9:15am) Aug <u>0.5%</u> Manufacturing <u>0.4%</u> Capacity utilization <u>76.5%</u> | 16 Sep Initial claims (8:30am) w/e Sep 11 <u>350,000</u> Retail sales (8:30am) Aug <u>-0.2%</u> Ex. autos <u>0.7%</u> Philadelphia Fed manufacturing (8:30am) Sep <u>22.0</u> Business leaders survey (8:30am) Sep Business inventories (10:00am) Jul <u>0.5%</u> TIC data (4:00pm) Jul Announce 10-year TIPS (r) <u>\$14bn</u> Announce 20-year bond (r) <u>\$24bn</u> Announce 2-year FRN (r) <u>\$26bn</u> | 17 Sep Consumer sentiment (10:00am) Sep prelim <u>72.0</u> |
| 20 Sep NAHB survey (10:00am) Sep | 21 Sep Housing starts (8:30am) Aug Current account (8:30am) 2Q Philadelphia Fed nonmanufacturing (8:30am) Sep Auction 20-year bond (r) <u>\$24bn</u> FOMC meeting | 22 Sep Existing home sales (10:00am) Aug Auction 2-year FRN (r) <u>\$26bn</u> FOMC statement and projections (2:00pm) and press conference (2:30pm) | 23 Sep Initial claims (8:30am) w/e Sep 18 Manufacturing PMI (9:45am) Sep flash Services PMI (9:45am) Sep flash Leading indicators (10:00am) Aug KC Fed survey (11:00am) Sep Announce 2-year note <u>\$60bn</u> Announce 5-year note <u>\$61bn</u> Announce 7-year note <u>\$62bn</u> Auction 10-year TIPS (r) <u>\$14bn</u> | 24 Sep New home sales (10:00am) Aug Cleveland Fed President Mester speaks (8:45am) |
| 27 Sep Durable goods (8:30am) Aug Dallas Fed manufacturing (10:30am) Sep Auction 2-year note <u>\$60bn</u> Auction 5-year note <u>\$61bn</u> Chicago Fed President Evans speaks (8:00am) Fed Governor Brainard speaks (12:15pm) | 28 Sep Advance economic indicators (8:30am) Aug FHFA HPI (9:00am) Jul S&P/Case-Shiller HPI (9:00am) Jul Consumer confidence (10:00am) Sep Richmond Fed survey (10:00am) Sep Dallas Fed services (10:30am) Sep Auction 7-year note <u>\$62bn</u> | 29 Sep Pending home sales (10:00am) Aug | 30 Sep Initial claims (8:30am) w/e Sep 25 Real GDP (8:30am) 2Q final Chicago PMI (9:45am) Sep | 1 Oct Personal income (8:30am) Sep Manufacturing PMI (9:45am) Sep final ISM manufacturing (10:00am) Sep Construction spending (10:00am) Aug Consumer sentiment (10:00am) Sep final Light vehicle sales Sep |

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J.P. Morgan Sovereign Research Ratings Distribution, as of July 3, 2021

| | Overweight | Marketweight | Underweight |
|-------------------------------------|------------|--------------|-------------|
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J.P. Morgan Credit Research Ratings Distribution, as of July 03, 2021

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|----------------------------------|------------|---------|-------------|
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