J.P.Morgan

North America Fixed Income Strategy
05 January 2024

U.S. Fixed Income Markets Weekly

Cross Sector *P. White, L. Wash, H. Cunningham*
The fixed income rally came to a halt amid heavy corporate supply and stronger labor market data. The December FOMC minutes suggest we could see an earlier end to QT than previously expected. We review potential implications for fixed income markets.

Governments *J. Barry, P. White, A. Borges, L. Wash*
We covered tactical shorts and stay neutral duration on dovish Fed path, fair valuations, and neutral positioning, but look to add duration in the 3- to 5-year sectors in a selloff. Hold 5s/30s steepeners: the long end should steepen as we approach the first ease and this curve remains too flat to its drivers. We discuss risks of an earlier termination to the QT process, following this week's minutes. A repetition of the 2019 QT timeline would result in reduced T-bill issuance over the course of the year and help improve the supply-demand backdrop in the Treasury market. We review record stripping activity over the course of December and the full year. Stay neutral on TIPS with valuations broadly fair and a mixed technical backdrop.

Interest Rate Derivatives *S. Ramaswamy, I. Ozil, P. Michaelides, A. Parikh*
An earlier end to QT brings upside risk to RRP and Reserves, and could make balance sheet policy a tailwind for investors looking to asset swap USTs - initiate 5Y swap spread wideners. Long end spreads are too wide however - add narrowing exposure. Initiate 1s/Greens flatteners paired with 2s/10s steepeners to earn attractive risk-adjusted carry. Buy 2Yx2Y swaption volatility.

Short-Term Fixed Income *T. Ho, P. Vohra, H. Cunningham*
The recent volatility in SOFR, while temporary, will likely become a regular feature in 2024, particularly around statement dates and large Treasury settlement dates. Assuming the Fed slows the pace of QT, this should moderate the upward pressure on SOFR relative to FF, T-bills/OIS should be biased narrower, and we do not expect the Fed to make any technical adjustment to its administered rates.

MBS and CMBS *J. Sim*
Continue to fade tightening in the mortgage basis. Private label CMBS serious delinquency rates ended 2023 at 4%, a 1.4pt increase year-over year, driven by refi-related issues. We expect serious delinquencies to reach 5.7% by 2024 year-end.

ABS and CLOs *A. Sze, R. Ahluwalia*
The ABS market is off to good start in 2024 with spreads firm to tighter over the turn of the year.

Investment-Grade Corporates *E. Beinstein, N. Rosenbaum, S. Mantri*
HG spreads have widened in 2024 due to a very tight level of spreads at YE, heavy supply this week and an increase in geopolitical tensions. 2023 HG market and

Fixed Income Strategy

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See page 149 for analyst certification and important disclosures.

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rating trends reviewed.

High Yield *N. Jantzen, T. Linares*
High-yield bond yields retraced approximately 20% of their decline in Nov-Dec over the past week, whereas leveraged loan prices rose to a high since May 2022.

Municipals *P. DeGroot, Y. Tian, R.Gargan*
We expect next week's heavy tax-exempt calendar will test valuations after the three-week supply hiatus and sizable reinvestment capital, have municipals largely at their richest levels since April of last year. More broadly, we brace for choppy returns in 2024.

Emerging Markets *L. Oganes*
In EM fixed income, we are OW GBI-EM local rates, and are MW CEMBI and EMBIGD. EM bond flows were -$568mn (-0.15% of weekly AUM, down from -$116mn).

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Summary of Views

SECTOR	CURRENT LEVEL Jan 5, 2024	YEAR END TARGET Dec 31, 2024	COMMENT
Treasuries			
2-year yield (%)	4.39	3.25	Maintain 2s/5s flatterners and 5s/30s steepeners
10-year yield (%)	4.04	3.65	Maintain 75:6 weighted 5s/10s/30s belly-cheapening butterflies to position for higher term premium
Technical Analysis		**Mid-year target**	
2-year yield (%)	4.39	4.50	The front end has built a clear bullish reversal pattern. Look for a breakout into 2024
10-year yield (%)	4.04	4.25	While we expect the longer-end to lag, we still look for a material retrace to lower yields
TIPS			
10-year TIPS breakevens (bp)	222	220	Stay neutral on breakevens.
Interest Rate Derivatives		**Mid-year target**	
2-year SOFR swap spread (bp)	-16	-20	An earlier end to QT brings upside risk to RRP and Reserves, and could make balance sheet policy a tailwind for investors looking to asset swap USTs - initiate 5Y swap spread wideners. Long end spreads are too wide however - add narrowing exposure. Initiate 1s/Greens flatteners paired with 2s/10s steepeners to earn attractive risk-adjusted carry. Buy 2Yx2Y swaption volatility
5-year SOFR swap spread (bp)	-30	-24	
10-year SOFR swap spread (bp)	-40	-32	
30-year SOFR swap spread (bp)	-70	-71	
Agency MBS			
FNMA 30yr 5.5% Front Tsy OAS (bp)	28	35	Continue to fade tightening in the mortgage basis.
RMBS Credit			
CRT M1B/M2 (DM@10CPR)	1MS + 179bp	1MS + 250bp	A strong rally into 2024 pushed spreads tighter across securitized products, with CRT firmly at the richer end along with corporates. Regardless, yields are attractive and limited supply may compound the bullish undertone.
RMBS 2.0 PT (6s)	1-08bk of TBA	1-16bk of TBA	
AAA Non-QM	I + 153bp	I + 185bp	
ABS			
3-year AAA card ABS to Treasuries (bp)	55	45	Given the fine line the US economy will be walking in the year ahead, we prefer staying within the relative safety of high quality ABS and recommend investment grade rated subprime auto ABS for attractive spread pickup
CMBS		**Mid-year target**	
10yr conduit CMBS LCF AAA	120	125	10yr conduit CMBS LCF AAA spreads can tighten into mid-year 2024 as sanitized new issue underwriting can modestly bolster investor demand. Agency CMBS remains cheap to AA corporates.
10yr Freddie K A2	59	60	
Investment-grade corporates			
JULI spread to Treasuries (bp)	118	125	Tight spreads make the market sensitive to near term data as well as supply trends.
High yield			
Domestic HY Index spread to worst (bp)	400	475	We believe HY spreads will be supported in the near-term by low near-term recession risks and improving capital market access into 1Q.
Credit Derivatives			
High Grade (bp)	60	60	US HG bonds underperformed CDX.IG in the first week of 2024 as extreme optimism into year end reversed on the back of heavy supply
High Yield	$105/373bp	400	
Short-term fixed income			
EFFR (%)	5.33	4.10	Continued increases in money market supply should result in T-bills/OIS and CPCD/OIS spreads to widen on the margin. Spread curves should steepen. SOFR is biased wider, while EFFR holds steady.
SOFR (%)	5.32	4.15	
CLOs			
US CLO Primary AAA (Tier 1, bp)	160	SOFR + 140-150	We are adopting our prior CLO AAA T1 new issue bull case target of 150bp as the base case for MY24 and see spreads in the 140-150bp range by YE24.
Municipals			
10-year muni yield (%)	2.28	2.20	Finding sustained market consensus while navigating the end of the tightening cycle may be difficult, but we suggest playing the long game, and buying municipal bonds with a longer term perspective, particularly in periods where Treasuries sell-off. We suggest adding idiosyncratic municipal risk on market weakness, with the belief that bouts of illiquidity should be viewed as an opportunity, given that a cycle turn is in the offing.
30-year muni yield (%)	3.43	3.55	
Emerging Markets			
Hard currency: EMBIG Div (bp)	404	475	MW EMBIGD
Hard currency: CEMBI Broad (bp)	286	330	MW CEMBI Br
Local currency: GBI-EM yield (%)	6.29%	5.76%	MW local rates

Source: J.P. Morgan

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US Fixed Income Overview

Considering an earlier end to QT

- The year-end rally came to a halt this week as Treasury yields rose and spreads widened, alongside heavy corporate supply and stronger labor market data. Markets remain priced for a more dovish Fed path than our own forecast. Stay neutral duration and expect spread volatility to remain high
- The December FOMC minutes showed that "several" participants anticipate slowing the pace of balance sheet runoff before stopping, and suggested that the technical discussion should begin so that the public has appropriate advance notice
- If form holds and the Fed replicates their 2019 plan, we think the Fed could formally announce a plan to slow the pace of QT at the March FOMC meeting, with implementation in May and QT coming to an end by September. This would result in only $390bn of passive Treasury runoff this year versus a prior forecast of $720bn
- We would not expect the Fed to reduce the pace of MBS runoff in May, but once QT ends, we expect MBS paydowns will be reinvested in Treasuries via secondary market purchases as the Fed aims to achieve an all-Treasury balance sheet over time
- **Economics**: Non-farm payrolls growth accelerated to 216k in December but the details were mixed. We expect core CPI rose 0.26% in December, allowing the year-ago rate to decline from 4.0% to 3.8%
- **Treasuries**: We covered tactical shorts and stay neutral duration on dovish Fed path, fair valuations, and neutral positioning, but look to add duration in the 3- to 5-year sectors in a selloff. Hold 5s/30s steepeners: the long end should steepen as we approach the first ease and this curve remains too flat to its drivers. Stay neutral on TIPS with valuations broadly fair and a mixed technical backdrop
- **Interest Rate Derivatives**: An earlier end to QT brings upside risk to RRP and Reserves, and could make balance sheet policy a tailwind for investors looking to asset swap USTs – initiate 5Y swap spread wideners. Long end spreads are too wide however – add narrowing exposure. Initiate 1s/Greens flatteners paired with 2s/10s steepeners to earn attractive risk-adjusted carry. Buy 2Yx2Y swaption volatility
- **Securitized Products**: Continue to fade tightening in the mortgage basis. A quicker end to QT could be beneficial to spreads as it reduces pressure on bank deposits. But with MBS OASs already on the tighter side, and we don't expect the Fed's recent communication to drive much further spread tightening from here
- **Corporates**: HG spreads have widened in 2024 due to a very tight level of spreads at YE, heavy supply this week and an increase in geopolitical tensions. Down the credit spectrum, total default activity in December was the softest since October 2022. Leveraged loan fundamentals are in a good position despite signs of deterioration, but we note a stark divide between the public and private cohort
- **Near-term catalysts**: Dec CPI (1/11), Dec retail sales (1/17), 4Q advance real GDP (1/25), Dec personal income (1/26)

Must Read This Week
Solid job growth, but with less rosy details, Michael Feroli, 1/5/24
Not so fast: Global core CPI to rise 3% in 1H24, Bruce Kasman and Nora Szentivanyi, 1/4/24

After a quiet holiday period, fixed income markets leaped into the new year with delayed fireworks as 10-year Treasury yields rose 19bp and high grade credit and mortgage spreads widened by 6bp and 3bp, respectively, over the past week (**Figure 1**). This halt to the end-of-year 2023 rally was likely predicated on a number of factors including year-end seasonals,

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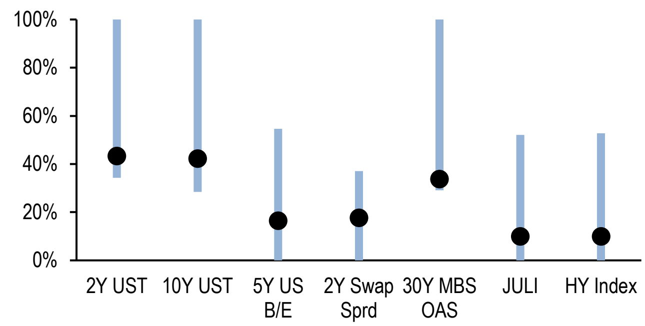
US HG Credit Ratings Review, Eric Beinstein, 1/4/24
Fed minutes get balance sheet discussion rolling, Michael Feroli, 1/3/24
3Q23 Leveraged Loan Credit Fundamentals, Nelson Jantzen and Tony Linares, 12/18/23

And Now Hear This…
At Any Rate: History Rhymes, Jay Barry, Srini Ramaswamy, Teresa Ho, and Nick Maciunas, 1/5/24

corporate supply dynamics, and firm labor market data. Friday's BLS report showed the monthly gain in nonfarm payrolls accelerated from a downward-revised 173k in November to 216k in December. Stepping back, labor demand has been gradually cooling. Job growth averaged 165,000 in the fourth quarter, the weakest quarter of the expansion though still above what's required to meet the growth in the population. Similarly, wages grew at a 3.7% annual rate last quarter, the weakest pace since late 2020 though still probably a little too hot from a labor cost and inflation perspective. We believe the apparent resilience of the labor market should dial down expectations of a Fed rate cut in 1Q, and we still look for easing to begin at the June meeting and for the Fed to deliver a total of 125bp of rate cuts this year (see *Solid job growth, but with less rosy details*, Michael Feroli, 1/5/24). Looking ahead to next week, we expect core CPI rose at a near-consensus 0.26% in December, allowing the year rate to decline from 4.0% to 3.8% (see *Economics*).

Figure 1: Yields and spreads moved off of their 3-month tights over the past week

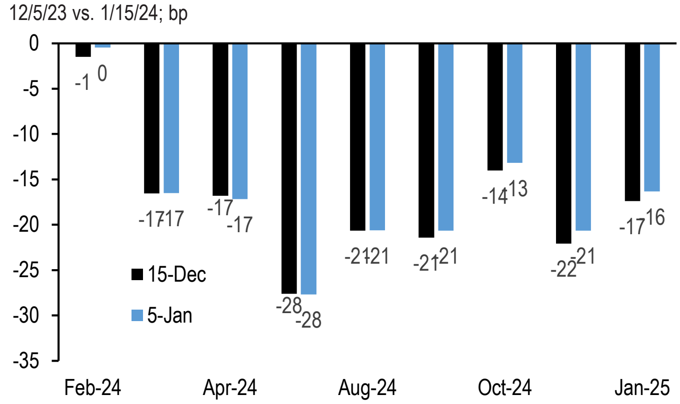
Respective yields and spreads (black dots) within their 3-month range (blue section), normalized as a percentage of their 1-year histories; %



Source: J.P. Morgan

Figure 2: Markets continue to price a more dovish path for the Fed than our modal forecast, and given this backdrop we do not recommend adding duration at current levels

Expected change in Fed funds effective rate by FOMC meeting implied by OIS forwards, 12/5/23 vs. 1/15/24; bp



Source: J.P. Morgan

Looking ahead, we unwound tactical duration shorts at the long end earlier this week, and remain neutral on duration over the near term (see *US Treasury Market Daily*, 1/4/24). For choice, we would rather use any backup in yields to add duration exposure in the 3- to 5-year sector, as the rebalancing of the labor markets, against the backdrop of a Fed on hold, remains supportive of being long Treasuries in 2024 (see *Treasuries 2024 Outlook*, 11/21/23). However, we are not sure now is the time to add duration, for a number of reasons. **First**, market-based Fed pricing remains somewhat aggressive versus our baseline forecast: OIS forwards are pricing in about 65% probability of a 25bp cut at the March FOMC meeting and about 140bp of cuts in 2024 (**Figure 2**). **Moreover**, 10-year Treasury yields look appropriately priced in our fair-valued framework, adjusting for the market's medium term Fed policy, inflation, and growth expectations, and the Fed's share of the Treasury market. **Finally**, while our *Treasury Client Survey* had extended to the long side in December, flagging risks to higher yields, it has reversed in recent weeks, and now sits at its most neutral level since early-October. **Given this backdrop, we would look to add duration should yields in the 3- to 5-year sector rise 10-15bp from current levels. Meanwhile, we continue to hold 5s/30s steepeners as a medium-term expression of our view, as this curve tends to steepen consistently as we approach the first Fed ease, and even after this recent steepening, the long end remains too flat after adjusting for its drivers.**

Considering an earlier end to QT

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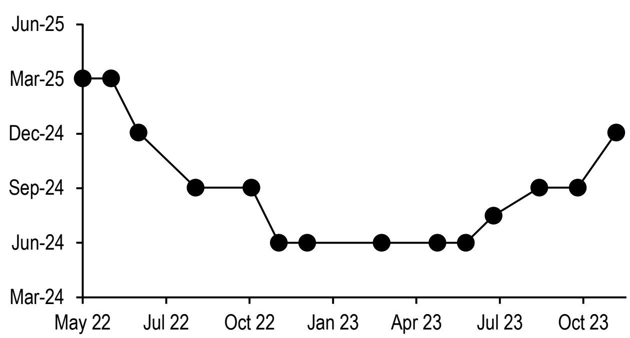
The minutes of the December FOMC meeting suggested that though QT "had so far proceeded smoothly," several Committee participants suggested "it would be appropriate for the Committee to begin to discuss the technical factors that would guide a decision to slow the pace of runoff well before such a decision was reached in order to provide appropriate advance notice to the public." Given the lack of clarity around what is considered "abundant" versus "ample" reserves, it thus seems reasonable that the Fed might want to take a more cautious approach in its balance sheet reduction such that a repeat of 2019 does not occur. Though these comments emanated from only "several participants" indicating that only a minority espoused this view, it's notable that there was no alternative plan of action offered. We suspect this means that we could see a fuller discussion of potential balance sheet plans in the minutes of the next meeting which takes place later this month (see *Fed minutes get balance sheet discussion rolling*, Michael Feroli, 1/3/24). Moreover, while we have called for QT to continue apace through the end of this year, this discussion appears to increase the risk that the Fed could slow the pace of balance sheet runoff in the coming months (see *Death cab for QT?*, 11/9/23). This is seemingly earlier than consensus expectations as well: based on the latest Survey of Primary Dealers taken prior to the December FOMC meeting, the median dealer projects QT to end in 4Q24, with reserve balances at \$3.125tn and ON RRP balances of \$375bn (**Figure 3**).

To take a step back, we do not expect an imminent announcement in January, given that no plan had been discussed at the December meeting. Nevertheless, as a guide, we can use the Fed's game plan from 2019, the only other instance it slowed and stopped QT. For context, there was a discussion of the balance sheet in the December 2018 FOMC minutes, but this was more of a technical discussion related to long-run monetary policy implementation than a timeline for ending QT (*see Fed patient on rates, spitballing on balance sheet plans*, Michael Feroli, 1/9/19). However, the discussion advanced significantly at the January 2019 FOMC meeting, as the Board staff presented a number of options, and almost all participants agreed to soon announce a plan. Indeed, that plan would be announced at the March 2019 FOMC meeting, indicating the Fed would slow the pace of QT after the May FOMC meeting, to complete QT by the end of September. The Fed halved the pace of monthly Treasury runoff from \$30bn to \$15bn in May, but then hastened its plan, completing QT after the July 2019 FOMC meeting, as the Fed also lowered rates into modestly accommodative territory.

Figure 3: This week's minutes were a surprise to market participants, given primary dealers projected QT will conclude by 4Q24

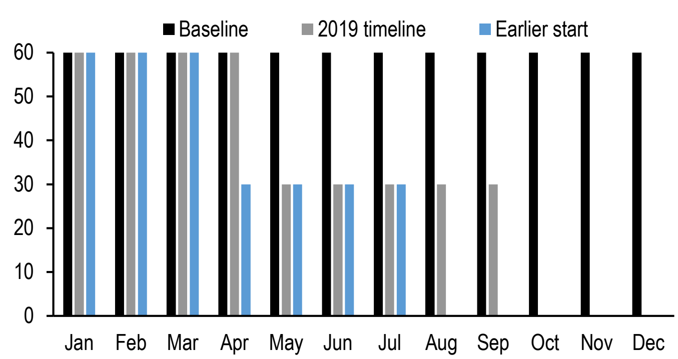
Median primary dealer expectation for date the SOMA portfolio will cease to decline



Source: Federal Reserve Bank of New York

Figure 4: If the 2019 plan is followed, this would result in just \$390bn in passive runoff of Treasuries in 2024, versus our \$720bn forecast

J.P. Morgan monthly SOMA Treasury holding runoff forecast versus scenario which follows 2019 timeline and more accelerated timeline*; \$bn



Source: J.P. Morgan
* Predicated on the balance sheet plan presented in March 2019

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Thus, using the 2019 game plan as a starting point, it seems reasonable to expect the Board staff to present a plan at the FOMC meeting on January 30-31, and market participants to learn more about these plans when the minutes are released next month. Following this timeline, we would expect a formal announcement at the March FOMC meeting, for implementation in May, with QT to be completed by September. We think the risk to this scenario would be an even earlier implementation, with the Fed announcing a plan to slow QT effective in the beginning of April, to be completed by the end of July. **Figure 4**illustrates how these two scenarios compare with our baseline estimates. If the Fed replicates its 2019 plans, this would result in just $390bn in passive runoff in 2024, versus the $720bn in our baseline, while a more aggressive timeline would result in just $300bn in passive runoff this year. **While this would not change Treasury's financing needs, it would result in commensurately fewer Treasuries going back to private non-Fed private hands. Accordingly, we think this would result in $330bn-$420bn in less T-bill net issuance than our current $675bn forecast.**

While in May 2019, the Treasury runoff caps were halved, the MBS cap remained at $20bn. Eventually, when QT ended, any MBS paydowns up to $20bn were reinvested into Treasuries, while any MBS paydowns above $20bn would go back into MBS. $20bn was a relevant cap at the time, roughly in line with the pace of runoff. Today, $35bn is far higher than the $15-20bn of actual paydowns, and so the probability of the Fed needing to reinvest paydowns in excess of $35bn back into MBS is very low (**Figure 5**). The end state of this process will be to reinvest all MBS paydowns in order to keep reserve balances steady. However, the Fed wants to get to an all Treasury balance sheet, and reinvesting into MBS would be counterproductive. We think they'd only want to buy MBS if there were severe market functioning problems or a housing market collapse, and neither is a near term concern. As a result, **they can probably leave the $35bn cap where it is for now, and then state that at the same time as they end Treasury runoff, they will start reinvesting MBS paydowns fully into Treasuries.**

Recall that in 2019 the Fed reinvested mortgage paydowns into Treasuries, via secondary market purchases, roughly matching the maturity composition of Treasury securities outstanding. **If the Fed follows this plan using the timeline from 2019, it would result in secondary demand of approximately $180bn-220bn annually from the Fed. As a result, this would help address the structural supply/demand imbalance in Treasury markets** (see *Treasuries 2024 Outlook*, 11/21/23). Of course it is reasonable to ask why the Fed needs to hold a portfolio of securities that is longer in duration than the overall Treasury market, particularly given the events of the last 15 months. If the Fed wanted to reduce the volatility of its remittances, and the likelihood of repeating 2023, while more closely matching the maturity profile of the Treasury market, it could choose to reinvest these MBS paydowns into T-bills instead. However, given the simplicity of proceeding in the same way as in the past, we think the bar is high for such a shift, as rational as it may be (see *Treasuries*).

Taking the slower pace of QT into consideration, we could see the Fed balance sheet holding steady in September, all else equal, removing one source of pressure on bank deposits. More deposit growth, in turn, probably means that banks increase their assets—and buy more securities. From a flow perspective, the net effect of ending QT is supportive of both Treasury and MBS yields, which could help both products outperform other spread products that aren't directly purchased by the Fed or banks (all else equal). **MBS OASs are already on the tighter side however, and we don't expect the Fed's recent communication to drive much further spread tightening from here** (see *Agency MBS*).

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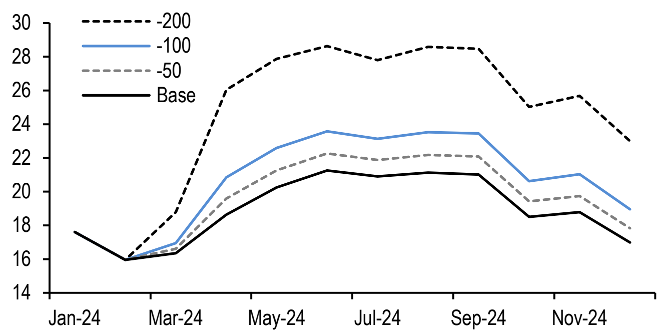
Figure 5: The $35bn MBS cap is difficult to hit even in very sizeable rallies

Fed runoff projections in 2024 in -200bp, -100bp, -50bp, and base case scenarios; $bn



Source: J.P. Morgan, Federal Reserve

Figure 6: Under the 2019 timeline scenario, QT could end by September with RRP balances around $650bn and Reserves at approximately $3.20tn

Current* and projected total Fed balance sheet assets, RRP, TGA, Reserves, and Commercial bank deposits through 2024 under the 2019 timeline, 1/3/2024; $bn

End-of-the-month	Fed Assets	RRP	TGA	Reserves	Commercial Bank Deposits
1/3/2024	7731	1086	743	3459	17591
Jan-24	7653	1023	750	3437	17624
Feb-24	7577	966	750	3418	17658
Mar-24	7450	909	750	3348	17652
Apr-24	7354	850	750	3311	17672
May-24	7286	815	750	3278	17696
Jun-24	7235	763	775	3254	17727
Jul-24	7184	730	775	3236	17763
Aug-24	7133	696	775	3218	17798
Sep-24	7082	650	800	3189	17825
Oct-24	7082	650	800	3189	17875
Nov-24	7082	650	800	3189	17925
Dec-24	7082	650	800	3189	17975

Source: J.P. Morgan, FRED, Federal Reserve H.4.1, Federal Reserve H.8
* Current values as of 1/4/2024 Fed H.4.1 release and 12/29/2023 Fed H.8. release

Additionally, if QT ends in September, we estimate a terminal RRP balance of $650bn and reserves of $3.2tn (**Figure 6**). The RRP balance includes both foreign and ON RRP, so assuming an average of $300-$350bn in foreign RRP balances, this implies that ON RRP usage would settle in at around $300-$350bn. More importantly, reserves would be significantly above our estimate of the lowest comfortable level of reserves at around $2.75-$2.80tn, which might suggest the Fed's desire to secure some sort of buffer above LCLoR.

Finally, as the Fed returns the balance sheet to a more steady state, it's also worth considering whether the Fed will make any technical adjustment to its administered rates. Recall in the run up to the Fed slowing the pace of QT in 2019, the effective fed funds rate (EFFR) was consistently trending higher in the fed funds corridor such that the Fed had to make technical adjustments to IORB. The IORB/RRP spread narrowed from 25bp at the start of 2018 to 10bp by May 2019 and has stayed there since. To that end, with EFFR currently stable at 5.33%, meaningfully below the upper bound of the fed funds target range despite the volatility we've seen in SOFR, **it stands to reason there is no urgency to increase IORB and widen the spread. Alternatively, there also doesn't appear to be any urgency to lower the ON RRP rate as SOFR** is also trading meaningfully below the upper bound. Historically, the Fed has made technical adjustments when EFFR has traded within 5bp of the upper bound of the corridor.

Nor is there an urgency to cut ON RRP counterparty limits which was raised from $30bn to $80bn in March 2021 and raised again to $160bn in September 2021. Usage at the ON RRP facility has consistently declined, demonstrating a natural decrease in market's reliance on the facility as a source of backstop supply. If anything, given the growth of taxable MMFs over the past few years, it might make sense to maintain counterparty limits higher than $30bn as the ON RRP facility has proven to be an effective tool in providing a soft floor for money market rates. All told, assuming the Fed slows the pace of QT, this should moderate the upward pressure on SOFR relative to FF as there is less collateral and more liquidity in the marketplace (see *Short-Term Fixed Income*).

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The prospect of a higher terminal RRP balance also has important implications for front end swap spreads. If RRP balances end the year 200-300bn higher relative to previous expectations, our fair value model estimates this should push 2Y swap spreads wider 3-5bp all else equal, and markets are likely to widen front end spot swap spreads in anticipation. However, 2Y swap spreads are already trading ~10bp wide to our fair value estimate. Perhaps an even more important channel could be the effect that QT tapering expectations would have on bank demand for Treasuries. In addition to the implications of an earlier QT on bank deposits discussed above, other factors also suggest a more favorable backdrop for bank demand as we enter 2024. First, the stage of the rate cycle is more conducive, with the hiking cycle seemingly behind us and the next move likely to be an ease. Second, thanks to a decline in yields in 4Q23, AOCI changes were likely positive even if somewhat modest in magnitude. Third, swap spreads remain significantly negative across much of the curve, and asset-swapping shorter maturity Treasuries is likely attractive as a way to banks to pick up incremental spread over IOR while mitigating interest rate risk. **With the backdrop suggesting bank demand could turn more positive, swap spreads appearing cheap in the belly, and the window for seasonal spread narrowing around year-end now almost behind us, we now recommend outright swap spread wideners in the 5-year sector** (see *Interest Rate Derivatives*).

Corporate credit spreads still tight, volatility to remain elevated

High grade credit spreads have widened 4bp over the past week to 115bp on the JULI which is understandable given tight spread levels, a glut of new year supply, and a reduction in Fed rate cut expectations. Indeed, yields currently sitting around their 90th percentile over the past decade has supported tighter spreads, which stand near their 10th percentile over the same range. We believe corporate spreads can continue to remain at these tight levels (our YE24 target remains 125bp) but we think spread volatility is likely to remain high. January tends to be the second heaviest month of the year for issuance, with supply averaging $135bn over the last five years, and this year could be elevated given tighter spreads, lower yields, more attractive USD vs EUR funding costs for foreign issuers, and as the election season will soon ramp up. We have so far seen $57bn this week and we expect GSIB supply to pick up 20% y/y in 2024, with much of this to come to market after bank earnings begin to be reported starting at the end of next week. We note 4Q24 earnings expectations have soured somewhat, with consensus looking for earnings to have grown 2.4% y/y last quarter, which compares to 4.9% y/y in 3Q and three quarters of negative growth prior to that (see *Corporates*).

Meanwhile high yield spreads widened 19bp over the week to 396bp on our index, retracing roughly 20% of their Nov/Dec decline, with this widening most pronounced down the ratings spectrum, as BBs, Bs, and CCCs spreads rose 14bp, 21bp, and 33bp over the last week. We are seeing greater decompression between HY/IG with the spread widening 15bp to 287bp. We continue to expect HY spreads to end the year at 475bp, but after incorporating new rate forecasts and mark-to-market, we now only see a 6% full-year return, down from 11% in our 2024 Outlook (see *High Yield*).

Meanwhile defaults ended 2023 on a soft tone with activity totalling $1bn in December, the lightest since October 2022. In total, 41 companies defaulted and 47 companies completed distressed exchanges in 2023, which combined totalled $83.7bn, a 75% increase y/y amid heightened rate volatility, restrictive capital markets, uncertain growth, and Healthcare sector weakness. In particular $25.4bn in distressed transactions is the highest annual total since 2008. Defaults/distressed volumes were heavier in 1H23, with 2Q in particular representing 41% of the annual volume. The 12-month trailing par-weighted US HY and LL

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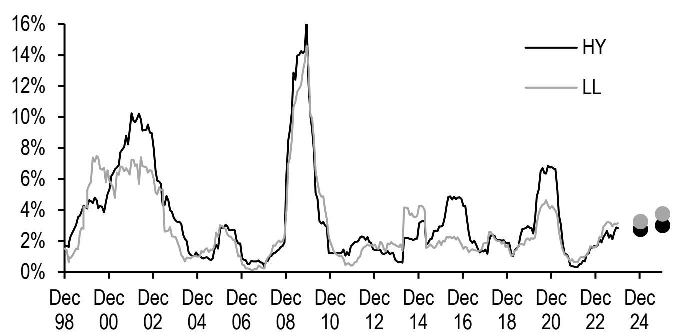
default rates increased 119bp and 113bp over the year to end 2023 at 2.84% and 3.15%, respectively. Slower growth, elevated rates, and weaker corporate fundamentals indicate the likelihood of an extension of the current default cycle, while improving capital markets and a smaller distressed universe should mitigate the extent to which default rates rise. We forecast high-yield bond and leveraged loan default rates in 2024 of 2.75% (HY) and 3.25% (LL), respectively, which we preliminarily expect to rise in 2025 to 3.00% and 3.75% (**Figure 7**; see *Default Monitor*, Nelson Jantzen, 1/2/24).

Figure 7: We expect HY and LL default rates to remain near their long-term averages in 2024 before picking up in 2025

High-yield and loan par-weighted default rates as well as JPM YE24 and YE25 forecasts; %



Source: J.P. Morgan, PitchBook Data Inc, Bloomberg Finance L.P., S&P/IHSMarkit

Figure 8: Balance sheets for leveraged loan issuers remain on solid footing despite deterioration, but with a stark difference between private and public cohorts

Comparative statistics for the Public/Private and Bond & Loan/Loan-only cohorts in 3Q23; units as indicated

	Public	Private	Bond & Loan	Loan-Only	All loans
Number of companies	288	428	252	464	716
Total debt ($bn)	$1,192.9	$750.9	$1,330.1	$613.6	$1,943.7
Average size ($bn)	$4.1	$1.8	$5.3	$1.3	$2.7
Average Rating (Debt weighted)	BB	B1/B2	BB	B1/B2	B1/B2
Percent Loan-only // Private	43.1%	79.4%	34.9%	73.3%	64.8%
Financial Metrics					
Leverage (Debt/EBITDA)	4.48x	5.69x	4.82x	5.01x	4.88x
EBITDA Margin	17.4%	14.2%	17.7%	13.5%	16.3%
Coverage (EBITDA/Net Int Exp)	4.37x	2.08x	3.67x	2.48x	3.20x

Source: J.P. Morgan, Capital IQ, Bixby Research and Analytics Inc.

Turning to leveraged loan credit fundamentals, our analysts recently expanded their scope to 716 US loan borrowers, including 428 private companies. Overall balance sheets as of 3Q are in a good position heading into a challenging landscape but we are seeing signs of deterioration. Revenues and EBITDA expanded at the slowest y/y pace in the past 10 quarters and we are seeing margin compression as inflation is proving stickier on the cost than revenue side. Interest coverage metrics are at their 11-quarter low but leverage has continued to decrease. We also note a stark difference in corporate health between the public and private cohort, with the public sector on net looking stronger than private. Indeed interest coverage metrics for the private sector is nearly half that of the public cohort (2.08x vs 4.37x), which is a function of weaker EBITDA gains (+2.9% y/y vs +11.2% y/y) and a more rapid rise in interest expense (+48% y/y vs +23% y/y), while private companies are more levered than their public peers (5.69x vs 4.48x) and this gap is widening as the public sector reduces leverage at a faster clip (**Figure 8**; see *3Q23 Leverage Loan Credit Fundamentals*, Nelson Jantzen and Tony Linares, 12/18/23).

Our 150bp YE24 target for CLO T1 AAA new issue implies a further ~10bp of tightening from here, while a potentially slower pace of QT at some point this year also supports less-liquid products. We expect near-term resistance to this CLO spread given their currently tight levels, elevated geopolitical risk, and as markets re-appraise expectations for rapid easing. Regardless we do think CLO Mezz to Equity can still attract demand with HG Corporates and Treasuries yielding mid-single digits (see *CLOs*).

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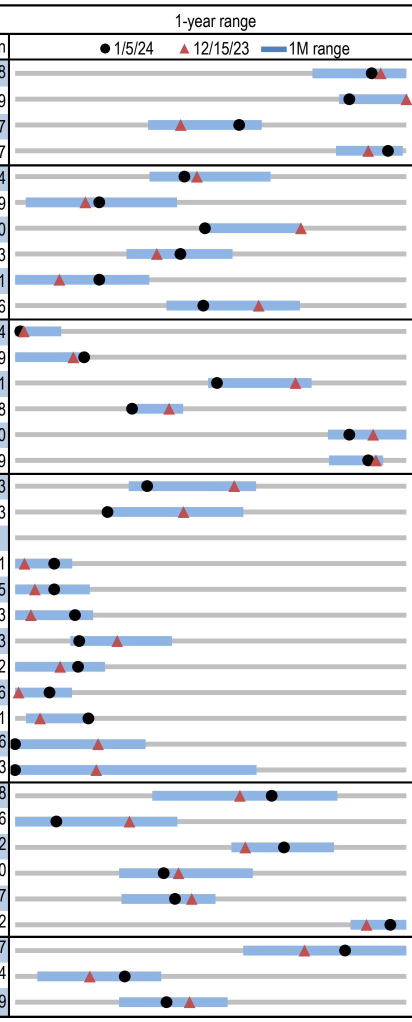
Figure 9: Cross sector monitor

Current levels, change since 12/15/23, 1-year average, minimum, maximum, and current z-score for various market variables; units as indicated

		Current	Chg from 12/15	1Y avg	1Y min	1Y max	Z-score
Global equities (level)	S&P 500	4697	-0.5%	4293	3808	4783	1.7
	E-STOXX	4464	-1.9%	4281	3959	4549	1.5
	FTSE 100	7690	1.5%	7619	7257	8013	0.4
	Nikkei 225	33377	1.2%	30732	25717	33753	1.1
Sovereign par rates (%)	2Y US Treasury	4.38	-4.7	4.60	3.74	5.22	-0.6
	2Y Germany	2.49	3.4	2.84	2.29	3.25	-1.3
	2Y JGB	0.01	-5.6	-0.02	-0.10	0.13	0.5
	10Y US Treasury	3.97	10.6	3.91	3.23	4.99	0.1
	10Y Germany	2.14	10.8	2.45	1.91	2.97	-1.3
	10Y JGB	0.66	-8.9	0.62	0.36	0.99	0.3
Funding spreads (bp)	2Y EUR par swap/gov't spd	45	-0.4	69	44	92	-2.2
	2Y USD par swap/gov't spd	13	0.7	21	9	34	-1.2
	EUR FRA-OIS spd	3	-5.3	3	-11	16	0.1
	USD FRA-OIS spd	35	-5.6	33	18	76	0.2
	1Y EUR-USD xccy basis	6	-1.8	-5	-20	11	1.8
	1Y USD-JPY xccy basis	-18	-0.4	-26	-39	-16	1.6
Credit spreads (bp)	30Y FNCL 4.5% Front Tsy OAS	27	-9.5	32	13	56	-0.5
	10Y AAA new issue CMBS spd to swaps*	130	-14.0	147	113	185	-1.0
	3Y AAA card ABS spd to SOFR	55	0.0				
	JULI portfolio spd to Tsy	117	4.8	142	111	174	-1.9
	JPM US HY index spd to worst	393	9.2	452	375	560	-1.4
	EMBIG Div spd to worst	402	14.3	442	383	510	-1.3
	CEMBI Broad spd to worst	286	-7.8	314	273	353	-1.5
	iBoxx Euro HG spd to govies*	86	1.0	92	82	105	-1.4
	US Financials spd to Tsy	123	6.1	143	116	193	-1.2
	Euro Financials spd to govies	146	9.8	152	131	210	-0.5
	10Y AAA muni spd to Tsy	-176	-16.4	-131	-176	-99	-2.9
	10Y AA taxable muni spd to Tsy*	83	-9	103	83	129	-2.2
Currencies	EUR/USD	1.098	0.6%	1.082	1.048	1.124	1.0
	USD/CHF	0.847	-2.3%	0.897	0.836	0.942	-2.3
	USD/JPY	144.14	1.7%	140.66	127.52	151.70	0.5
	JPM Trade-weighted USD index	129.00	-0.2%	129.44	126.00	133.90	-0.2
	GBI-EM Global FX index	80.82	-0.3%	81.11	78.77	83.79	-0.2
	Bitcoin spot	43971	4.1%	29178	16822	45127	2.4
Commod-ities	Gold futures ($/t oz)	2050	1.4%	1949	1817	2093	1.7
	Brent oil futures ($/bbl)	78.76	2.9%	82.10	71.84	96.55	-0.6
	LME Copper 3M rolling forward ($/tonne)	8463	-1.0%	8525	7899	9356	-0.2



Source: J.P. Morgan, Bloomberg Finance L.P., ICE, IHS Markit
* 1/4/24 levels for AAA CMBS, iBoxx Euro HG, and AA taxable munis; 1/5/24 levels for all others

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Figure 10: YTD returns on various fixed income indices; %

Index	Since last publication (12/15/2022)	Year-to-Date (1/5/2024)
USD Cash	5.12%	0.1%
Aggregate GABI	5.65%	-1.9%
UST Agg	-0.98%	-1.0%
UST 1-5y	-0.31%	-0.3%
UST 5-10y	-1.06%	-1.1%
UST 10y+	-2.63%	-2.6%
UK	-1.94%	-1.9%
Germany	-1.35%	-1.4%
Italy	-1.21%	-1.2%
Japan	-2.01%	-2.0%
EM Sovereign	5.91%	-2.0%
Agencies	3.35%	-0.3%
FN 3.0%	-2.10%	-2.1%
FN 2.5%	-2.22%	-2.2%
FN 2.0%	-2.30%	-2.3%
ABS Fixed	0.11%	0.1%
HG Bonds	4.00%	-1.5%
AAA	1.12%	-2.1%
AA	2.14%	-1.6%
A	3.39%	-1.5%
BBB	4.93%	-1.4%
Fin	4.71%	-1.1%
Non-Fin	3.67%	-1.6%
HY Bonds	-0.93%	-0.9%
BB	-0.97%	-1.0%
B	-0.83%	-0.8%
CCC	-1.40%	-1.4%
EM Corporate	5.86%	-0.3%
CLOIE	0.26%	0.2%
JUSTINE	9.83%	-0.8%

Source: J.P. Morgan

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Economics

- **Job growth was solid in December (216,000) with unemployment rate holding at 3.7%**
- **FOMC minutes suggested rate cuts could come later this year**
- **We continue to think first Fed cut occurs in June**
- **December CPI forecast: headline: 0.2%, core 0.3%**

We continue to think that the FOMC will start lowering rates in June, with the news from the past week supporting the idea that a rate cut could come fairly soon, but probably not as early as the first quarter. Most importantly, the December employment report showed solid job growth continuing through the fourth quarter, with a still-tight labor market generating upward pressure on wages. The broad trend in employment growth (and aggregate hours growth and average hourly earnings growth) still appears to be moderating over time, but so far this looks like a shift to a more balanced labor market following the severe effects of the pandemic, and not a labor market that has particularly weak demand for workers. Several other labor market reports echoed this message lately (e.g., job openings continued to trend lower into November but remain higher than pre-pandemic norms), although there was a curiously downbeat reading on employment in the ISM services survey.

Signs of a more balanced labor market and reduced inflation pressures are leading to speculation about when the FOMC will start to lower rates. The minutes to the December FOMC meeting didn't surprise in a meaningful way and didn't suggest that rate cuts were imminent. They confirmed that the Committee sees rates "at or near" the peak for the cycle. While "almost all participants" thought the improved inflation outlook means rate cuts this year, they are still far from guessing when those cuts might start. The minutes did suggest that we should start to see more discussion of plans for the balance sheet soon, and we think this could start to occur at the late-January meeting.

Inflation remains a key issue for policymakers and next week's December CPI report will be important to watch. We forecast that the headline CPI will be up 0.2%, with a 0.26% gain for the core index. While this wouldn't be a particularly soft print for the core measure, we believe the related year-ago rate will continue to moderate (moving from 4.0%oya in November to 3.8% in December) and we expect additional cooling over time. This upcoming CPI report likely will be the last main economic release ahead of the late-January FOMC meeting, but there will be plenty of other news before that meeting as well.

Job growth still solid

Nonfarm employment beat expectations in December, increasing 216,000, although after downward revisions of 71,000 to prior months the level of employment came in close to what was anticipated. There were also mixed messages from the other details of the report. In the establishment survey, average hourly earnings increased a solid 0.4%, but the average workweek ticked down to 34.3 hours. In the household survey, the unemployment rate held unchanged at a low 3.7%, but the labor force participation rate slumped three-tenths to 62.5% and the volatile household measure of employment plunged 683,000.

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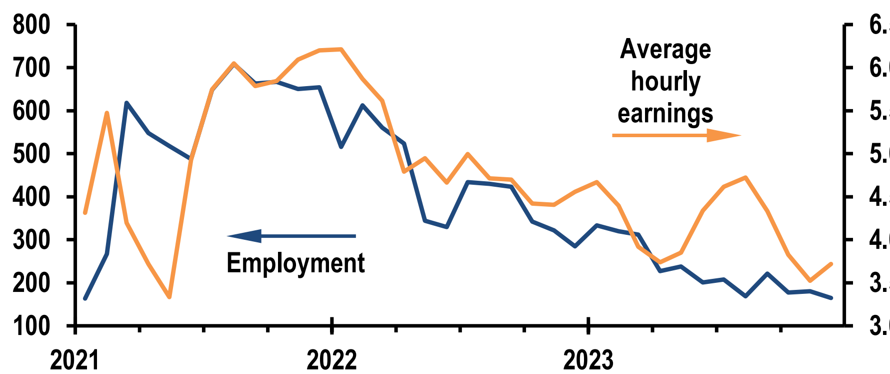
Figure 1: Nonfarm employment and average hourly earnings

000s, sa, 3m avg. change %3m/3m, saar

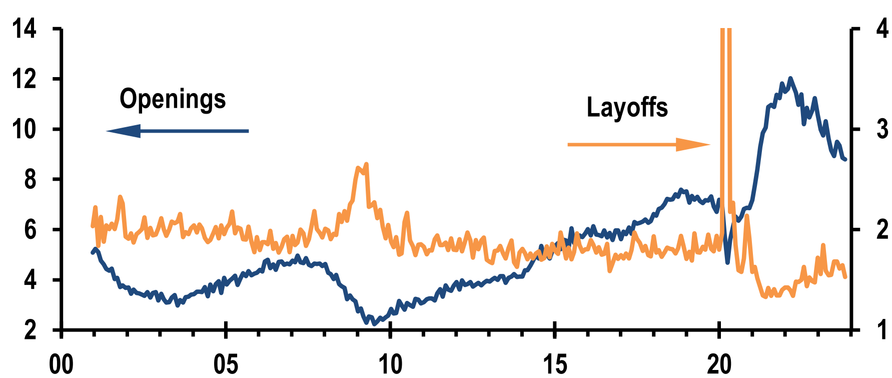


Source: BLS, J.P. Morgan

Stepping back, labor demand has been gradually cooling. Job growth averaged 165,000 in the fourth quarter, the weakest quarter of the expansion though still above what's required to meet the growth in the population (Figure 1). Similarly, wages grew at a 3.7% annual rate last quarter, the weakest pace since late 2020 though still probably a little too hot from a labor cost and inflation perspective.

Figure 2: Job openings and layoffs

Mn, sa, both scales



Source: BLS, J.P. Morgan

The more lagging JOLTS data also suggest that labor demand is cooling but remaining solid. Job openings continued their recent downward trend into November. But while the number of job openings has fallen by more than 3mn since the all-time high reported for March 2022, the November level of openings was still up by more than 1mn from the strongest month of 2019 (Figure 2). While hiring has slowed lately, firms don't appear to be opting for many layoffs. And low levels of jobless claims filings reported through much of December echo this message from the November JOLTS report.

Fed minutes don't signal timing of a cut

We believe the apparent resilience of the labor market should dial down expectations of a Fed rate cut in 1Q, and we still look for easing to begin at the June meeting. The minutes to the December 12-13 FOMC meeting didn't surprise in a big way and didn't suggest that

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a rate cut is imminent. The minutes rather confirmed that the Committee now sees rates "at or near" the peak for the cycle, and this was reflected in the revised forward guidance. However, that guidance still left intact "the possibility of further increases" if inflation were to surprise on the upside. "Almost all participants" noted that the improved inflation outlook meant rate cuts in '24, though they are still very far from getting into the game of guessing when those cuts may start. It was also noted the outlook for these cuts was "associated with an unusually elevated degree of uncertainty" (the minutes rarely note an unusually low degree of uncertainty).

The Committee generally views the risks to inflation as still skewed to the upside, though by not as much as in prior meetings. Some sources of lingering upside risk include the recent easing in financial conditions and global factors could end or reverse the easing in goods prices. On growth there was the contending concern that the Committee could find that policy is ultimately overly restrictive, which could be compounded by slower foreign growth and tighter bank credit, particularly for small businesses. Both the Committee and the staff saw a tough year ahead for CRE.

The minutes record that "several" participants anticipate slowing the pace of balance sheet runoff before stopping that runoff. It was also noted that these participants thought the technical discussion should begin so that the public has appropriate advance notice of the plan. We suspect this means that we could see a fuller discussion of potential balance sheet plans in the minutes to the next meeting, which takes place later this month.

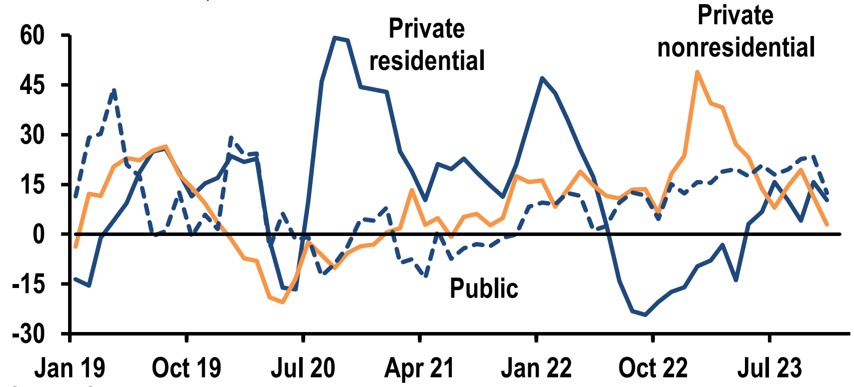
4Q GDP still looking modest

We have long been anticipating a clear slowing in GDP growth in the fourth quarter following the very strong third quarter of last year and we continue to calibrate our estimate for 4Q as we get more related information over time. There were some upside surprises this past week, but we continue to see some downside risk to our 2.0% real GDP growth forecast for 4Q23. We should also note that much of the slowing in growth we expect between the third and fourth quarters is related to inventories. Inventories added 1.3%-pts to GDP growth in 3Q but we think they could subtract about a percentage point (or more) from GDP growth in 4Q. That said, there are limited related hard data in hand at this point. For domestic final sales growth, we expect growth to moderate between these quarters, but we do not look for a particularly drastic step down.

On the whole, the November construction report came out above expectations, with a somewhat disappointing change reported for November (0.4%) but upward revisions to earlier figures (mainly in October). Private residential spending led the way in November, with a 1.1% monthly increase that month, and generally has been climbing at a solid pace in recent months (Figure 3).

Figure 3: Main categories of construction spending

%ch over 3 months, saar



Source: Census Bureau, J.P. Morgan

Auto sales also surprised favorably, rising 3.2% to 15.8mn saar in December. This marked one of the strongest months for sales in over two years but sales continue to run below the norms from pre-pandemic years. We think that improvements on the inventory front could help sales climb over time. While inventories generally have been trending higher lately, there was a decline in inventories reported for December

Excerpted from, *United States Data Watch* Michael Feroli, January 05, 2024

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Treasuries

When the facts change, I change my mind

- We would look to add duration longs in the 3- to 5-year sectors in a backup to higher yields, but remain neutral at current levels given dovish Fed pricing, fair valuations, more neutral positioning, and near-term risks of momentum-based selling. However, we continue to hold 5s/30s steepeners as this curve tends to steepen consistently as we approach the first Fed ease, and as even after this recent steepening, the long end remains too flat after adjusting for its drivers
- QT came back to the forefront as the balance sheet discussion in the December FOMC minutes read dovish. We reference the 2019 QT timeline to show the implications of an earlier conclusion to the balance sheet normalization process on T-bill issuance over the course of 2024
- Further, the reinvestment of the paydowns from the MBS portfolio into Treasuries once QT ends should help better balance the structural demand imbalance in the Treasury market. We see a case for the Fed to reinvest these proceeds into bills instead of coupons, but ultimately think the Fed will opt for the simpler option of proceeding the same way it did in the past
- Stripping activity totaled $13.4bn in December, the most on record for a single month. Overall, stripping demand totaled $73bn in 2023, a record 18% growth over the year, as LDI investors looked to take advantage of the highest long-end yields since prior to the GFC to increase fixed income allocations. Demand remained concentrated in the very long end, but we also saw robust stripping activity in 2049-2052 maturities

Market views

Rates have staged a reversal since our last weekly publication on December 15: 2-year yields declined 1bp, while 5-, 10-, and 30-year yields have risen by 8bp, 11bp, and 17bp, respectively. This left long-end yields at their highest levels since the December FOMC meeting. We think a combination of technicals and fundamentals drove this move. On the technical side, we think both seasonals and supply dynamics contributed to the move, as we had flagged late last year. The curve bearishly steepened, as it has consistently done around year-end in the last 5- to 10-years (see Treasuries, *US Fixed Income Markets Weekly*, 12/15/23). Moreover, supply dynamics likely contributed to this as well: our colleagues in credit strategy had discussed the risks that HG issuance could be heavier and more front loaded than on average in January, and this week saw $55bn in issuance, or more than 40% of average January issuance levels (see *Credit Market Outlook Strategy*, Eric Beinstein, 1/5/24).

Meanwhile, the data flow were mixed over the week. The November JOLTS report showed job openings declined from an upward-revised 8.852mn in October to 8.790mn in November (consensus: 8.821mn), continuing along a downward trend (see *US: Job openings continue to trend lower*, Daniel Silver, 1/3/24). Similarly, the December employment report was a mixed bag: payrolls rose an above-consensus 216k (consensus: 175k), the strongest monthly gain since September, with strength in private payrolls, but this was accompanied by 71k in downward revisions to the prior two months. Meanwhile, average hourly earnings surprised to the upside, rising 0.4% (consensus: 0.3%), and the unemployment rate held steady at 3.7% (consensus: 3.8%), but the workweek fell and the participation rate declined 0.3%-pts to 62.5% (see *Solid job growth, but with less rosy details*, Michael Feroli, 1/5/24). Finally, the ISM services index fell 2.1 points to 50.6 in December (consensus: 52.5), with

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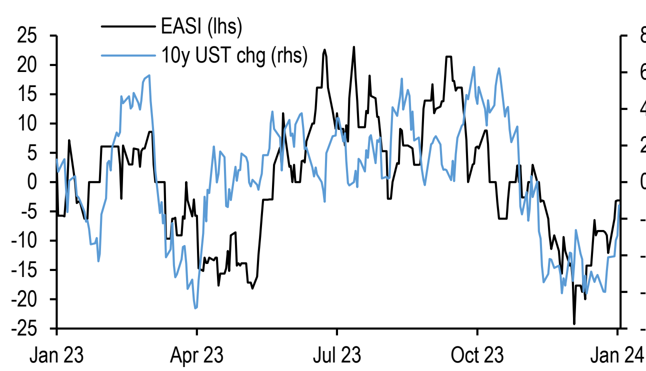
particular weakness in the employment component (see *US: ISM services survey dragged down by employment index*, Daniel Silver, 1/5/24). On balance, though data were mixed, the downside surprises have not been as consistent as we saw in late 4Q23, helping slow the momentum to lower yields (**Figure 11**).

Figure 11: Data were more mixed, helping to slow the momentum to lower yields

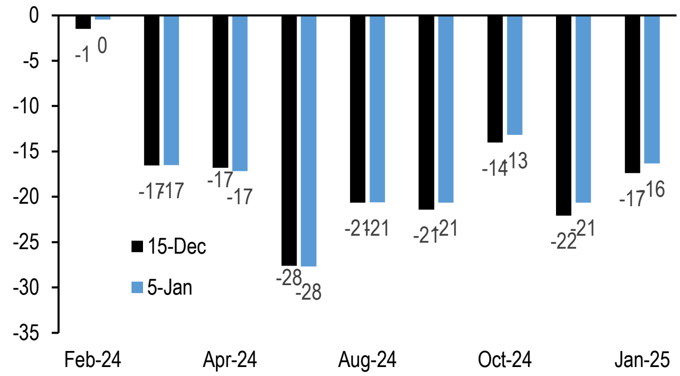
J.P. Morgan Economic Activity Surprise Index (lhs) versus rolling 1-month change in 10-year Treasury yields (rhs; bp)



Source: J.P. Morgan

Figure 12: Markets continue to price a more dovish path for the Fed than our modal forecast, and given this backdrop we do not recommend adding duration at current levels

Expected change in Fed funds effective rate by FOMC meeting implied by OIS forwards, 12/5/23 vs. 1/15/24; bp



Source: J.P. Morgan

Looking ahead, we unwound our tactical shorts at the long end earlier this week, and remain neutral on duration over the near term (see *US Treasury Market Daily*, 1/4/24). For choice, we would rather use any backup in yields to add duration exposure in the 3- to 5-year sector, consistent with the themes we presented in our *2024 Outlook*, as the rebalancing of the labor markets, against the backdrop of a Fed on hold, remains supportive of being long Treasuries in 2024 (see *Treasuries 2024 Outlook*, 11/21/23).

However, we are not sure now is the time to add duration, for a number of reasons. **First**, market-based Fed pricing remains somewhat aggressive versus our baseline forecast: OIS forwards are pricing in approximately 65% probability of a 25bp cut at the March FOMC meeting and nearly 140bp of cuts in 2024, versus our modal view, which forecasts the first cut in June and 125bp of easing this year (**Figure 2**). While the Fed's comfort on inflation runs the risk of an earlier cut, we do not think chasing at current levels makes sense. **Second**, valuations longer out the curve give us no edge, as 10-year Treasury yields look appropriately priced in our fair-valued framework, adjusting for the market's medium term Fed policy, inflation, and growth expectations, and the Fed's share of the Treasury market. **Third**, investor positioning gives us little to lean on as well: while our *Treasury Client Survey* had extended to the long side in December, flagging risks to higher yields, it has reversed in recent weeks, and now sits at its most neutral level since early-October (**Figure 13**). **Finally**, technicals pose some bearish risk over the near term as well: our colleagues in technical strategy have pointed out that the 30-year bond's break above the 200-day moving average could spur a round of discretionary momentum selling, which could pressure all yields higher (see *Global Fixed Income Technical Update*, Jason Hunter, 1/5/24). **Given this backdrop, we would look to add duration should yields in the 3- to 5-year sector rise 10-15bp from current levels. Meanwhile, we continue to hold 5s/30s steepeners as a medium-term expression of our view, as this curve tends to steepen consistently as we approach the first Fed ease, and even after this recent steepening, the long end remains too flat after adjusting for its drivers.**

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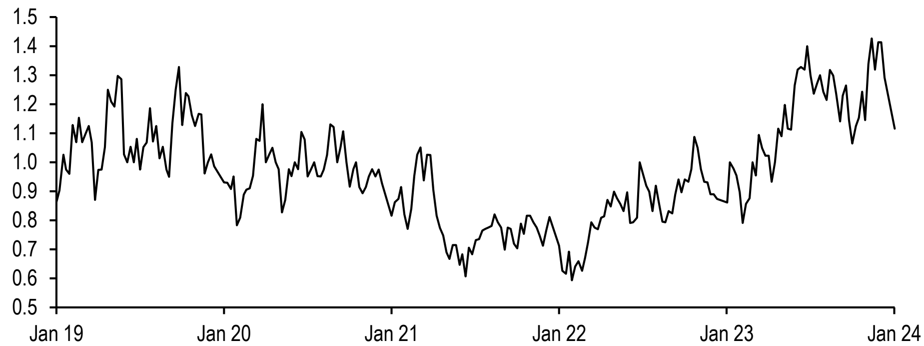
Figure 13: Our latest survey shows the most neutral positioning since early-October

J.P. Morgan Treasury Client Survey Index*;



Source: J.P. Morgan
* (Longs + Neutrals)/(Shorts+Neutrals)

History rhymes: an earlier end to QT?

Away from the baseline outlook for Fed policy rates, QT came back to the forefront as the balance sheet discussion in the December FOMC minutes read dovish relative to our baseline expectations. Though QT "had so far proceeded smoothly," the paragraph on balance sheet focused on having a plan to taper QT when reserves were still safely in ample territory. Indeed, "it would be appropriate for the Committee to begin to discuss the technical factors that would guide a decision to slow the pace of runoff well before such a decision was reached in order to provide appropriate advance notice to the public." Though these comments emanated from only "several participants" indicating that only a minority espoused this view, it's notable that there was no alternative plan of action offered. We suspect this means that we could see a fuller discussion of potential balance sheet plans in the minutes of the next meeting which takes place later this month (see *Fed minutes get balance sheet discussion rolling*, Michael Feroli, 1/3/24). Moreover, while we have called for QT to continue apace through the end of this year, this discussion appears to increase the risk that the Fed could slow the pace of balance sheet runoff in the coming months (see *Death cab for QT?*, 11/9/23). This is seemingly earlier than consensus expectations as well: based on the latest Survey of Primary Dealers taken prior to the December FOMC meeting, the median dealer projects QT to end in 4Q24, with reserve balances at $3.125tn and ON RRP balances of $375bn (**Figure 14**).

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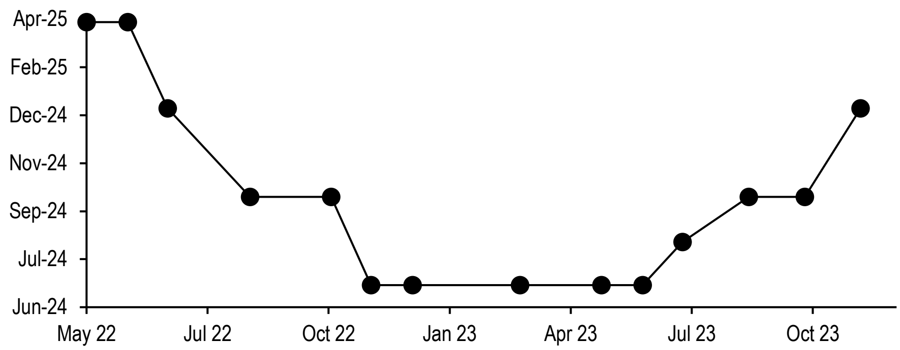
Figure 14: This week's minutes were a surprise, given primary dealers projected QT will conclude by 4Q24

Median primary dealer expectation for date the SOMA portfolio will cease to decline;



Source: Federal Reserve Bank of New York

To take a step back, we do not expect an imminent announcement in January, given that no plan had been discussed at the December meeting. Nevertheless, we must examine how the timeline for QT's end could unfold in 2024. As a starting point, we can use the Fed's game plan from 2019, the only other instance it slowed and stopped QT, and **Figure 15** shows a timeline of how this evolved 5 years ago. For context, there was a discussion of the balance sheet in the December 2018 FOMC minutes, but this was more of a technical discussion related to long-run monetary policy implementation than a timeline for ending QT (*see Fed patient on rates, spitballing on balance sheet plans*, Michael Feroli, 1/9/19). However, the discussion advanced significantly at the January 2019 FOMC meeting, as the Board staff presented a number of options, and almost all participants agreed to soon announce a plan. Indeed, that plan would be announced at the March 2019 FOMC meeting, indicating the Fed would slow the pace of QT after the May FOMC meeting, to complete QT by the end of September. Indeed, the Fed halved the pace of monthly Treasury runoff from $30bn to $15bn in May, but then hastened its plan, completing QT after the July 2019 FOMC meeting, as the Fed also lowered rates into modestly accommodative territory.

Figure 15: It seems the timeline for slowing and stopping QT could follow the Fed's plans from 2019...

2019 Fed balance sheet timeline

Date	Event	Development
20-Feb-19	Jan 2019 FOMC minutes	"the staff presented options for substantially slowing the decline in reserves by ending the reduction in asset holdings at some point over the latter half of this year and thereafter holding the size of the SOMA portfolio roughly constant for a time so that the average level of reserves would fall at a very gradual pace reflecting the trend growth in other Federal Reserve liabilities." "Almost all participants thought that it would be desirable to announce before too long a plan to stop reducing the Federal Reserve's asset holdings later this year. Such an announcement would provide more certainty about the process for completing the normalization of the size of the Federal Reserve's balance sheet.
20-Mar-19	March 2019 FOMC meeting	The Committee intends to slow the reduction of its holdings of Treasury securities by reducing the cap on monthly redemptions from the current level of $30 billion to $15 billion beginning in May 2019. The Committee intends to conclude the reduction of its aggregate securities holdings in the System Open Market Account (SOMA) at the end of September 2019.
31-Jul-19	July 2019 FOMC meeting	Effective August 1, 2019, the Committee directs the Desk to roll over at auction all principal payments from the Federal Reserve's holdings of Treasury securities and to reinvest all principal payments from the Federal Reserve's holdings of agency debt and agency mortgage-backed securities received during each calendar month.

Source: Federal Reserve

Thus, using the 2019 game plan as a starting point, it seems reasonable to expect the Board staff to present a plan at the FOMC meeting on January 30-31, and market participants to learn more about these plans when the minutes are released next month. Following this time-

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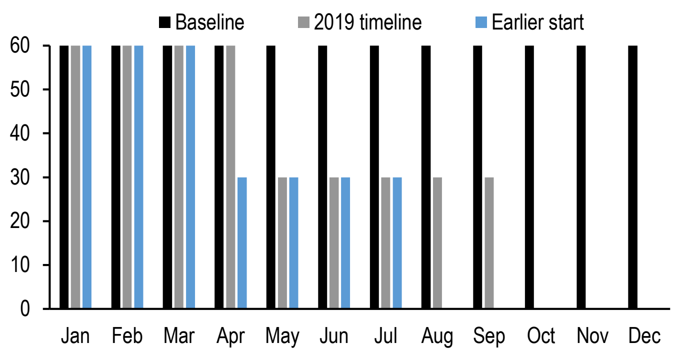
line, we would expect a formal announcement at the March FOMC meeting, for implementation in May, with QT to be completed by September. We think the risk to this scenario would be an even earlier implementation, with the Fed announcing a plan to slow QT effective in the beginning of April, to be completed by the end of July. **Figure 16**illustrates how these two scenarios compare with our baseline estimates. If the Fed replicates its 2019 plans, this would result in just $390bn in passive runoff in 2024, versus the $720bn we had forecast in by *Death cab for QT?*, while a more aggressive timeline would result in just $300bn in passive runoff this year. **While this would not change Treasury's financing needs, it would result in commensurately fewer Treasuries going back to private non-Fed private hands. Accordingly, we think this would result in $330bn-$420bn in less T-bill net issuance than our current $675bn forecast.**

Figure 16: ...If the 2019 plan is followed, this would result in just $390bn in passive runoff of Treasuries in 2024, versus our $720bn forecast

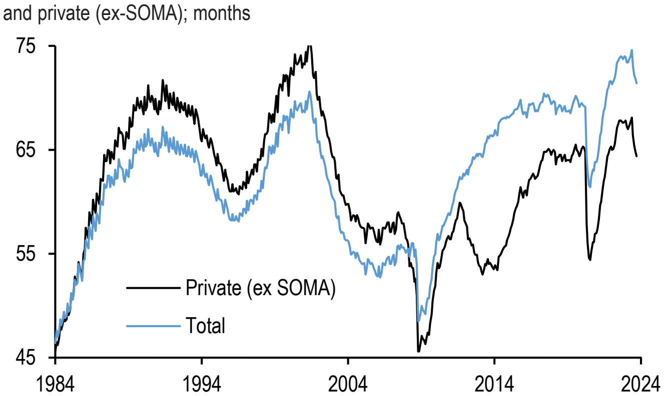
J.P. Morgan monthly SOMA Treasury holding runoff forecast versus scenario which follows 2019 timeline and more accelerated timeline*;



Source: J.P. Morgan
* predicated on the balance sheet plan presented in March 2019

Figure 17: The Fed's Treasury holdings are considerably longer in duration than the overall Treasury market

Weighted Average Next Rate Reset* for total US Treasury marketable debt outstanding, and private (ex-SOMA); months



Source: US Treasury
* Weighted Average Next Rate Reset (WANRR) is a "Weighted Average Maturity" metric that attempts to adjust for the floating rate aspect of some Treasury debt. The WANRR is the average time until the outstanding debt's interest rate is set to a new interest rate. For bills and fixed rate notes and bonds, the next rate reset is equal to the maturity date. In contrast, for floating rate obligations, the time between the next rate reset date or maturity date is examined and the shorter period is used in the calculation.

The secondary impact is related to the Fed's reinvestment of the paydowns from its MBS portfolio once QT ends. Recall, in 2019 the Fed reinvested mortgage paydowns into Treasuries roughly matching the maturity composition of Treasury securities outstanding. If the Fed follows this plan using the timeline from 2019, it would result in secondary demand of approximately $180bn-220bn annually from the Fed. As a result, this would help better balance the structural demand imbalance we had flagged in our 2024 Outlook (see *Treasuries 2024 Outlook*, 11/21/23). While this seems a natural starting point, it is notable that the Fed's Treasury holdings are considerably longer in duration than that of the overall Treasury market. **Figure 17** compares the Weighted Average Next Rate Reset (WANRR) of the Treasury market with private (ex-Fed) holdings. The WANRR of outstanding marketable Treasury debt is currently 71.4 months, 7 months longer than that held by the private market, indicating the Fed's holdings are longer duration. This is mainly due to the short end, as T-bills represented a 21.5% share of marketable debt outstanding as of December 2023, and the SOMA owns only $217bn T-bills, less than a 5% share of its total holdings. To be fair, the Fed's holdings have been on average longer than those of the overall Treasury market since the QE era began.

Given this backdrop, the path of least resistance points to the Fed employing the same playbook it used in 2019, but there is a meaningful question here on why the Fed needs to hold

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a portfolio of securities that is longer in duration than the overall Treasury market, particularly given the events of the last 15 months. More granularly, the Fed went from remitting $109bn back to Treasury in 2021 to $59bn in 2022, to nothing in 2023, given that the interest on its bond holdings is less than what it is paying out on its interest-bearing liabilities. Thus, if the Fed wanted to reduce the volatility of its remittances, and the likelihood of repeating 2023, while more closely matching the maturity profile of the Treasury market, it could choose to reinvest these MBS paydowns into T-bills instead. However, given the simplicity of proceeding in the same way as in the past, we think the bar is high for such a shift, as rational as it may be.

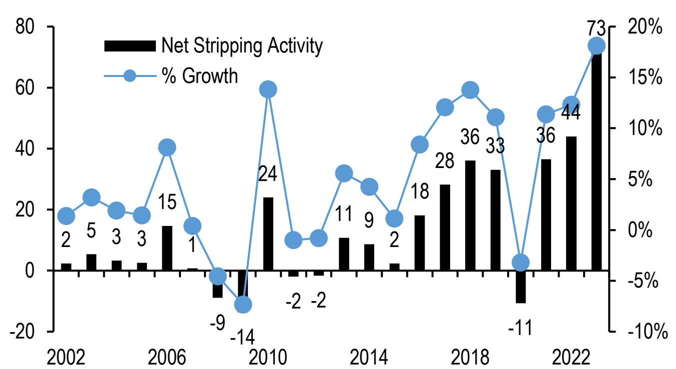
December STRIPS update

This afternoon Treasury released the MSPD for December, which showed P-STRIPS outstanding rose $13.4bn over the month, the most on record in a single month. This number takes total stripping activity over to $73bn, representing a record 18% growth over the year (**Figure 18**). We've long been discussing how, with funded ratios firmly above 100%, there was room for pension funds to increase fixed income allocations,a nd it appears LDI investors felt more comfortable adding fixed income exposure as yields turned in 4Q23. Looking forward, fixed income allocations should continue to rise and as we discussed in our *2024 Outlook*, the real wildcard will be how asset allocators at pension funds will take into account equity/fixed income correlations.

Demand remained concentrated at the very long end over the month, with $9.3bn in stripping activity in the 28- to 30-year sector, well above the three-month moving average of $6.2bn (**Figure 19**). The most stripped securities were the current 30-year bond (Nov-53s), Feb-53s, and Aug-53s at $2.8bn, $2.7bn, and $1.4bn, respectively. While these CUSIPS at the tip of the curve accounted for $6.9bn, or more than half of the stripping demand over the month, activity was relatively widespread. Indeed, the next five most stripped securities, all maturing between 2049-2052 saw a robust aggregate total of $4.8bn in net stripping demand. Meanwhile no securities saw reconstitution above $1bn over the course of the month.

Figure 18: Stripping demand totaled $73bn in 2023, a record 18% growth over the year

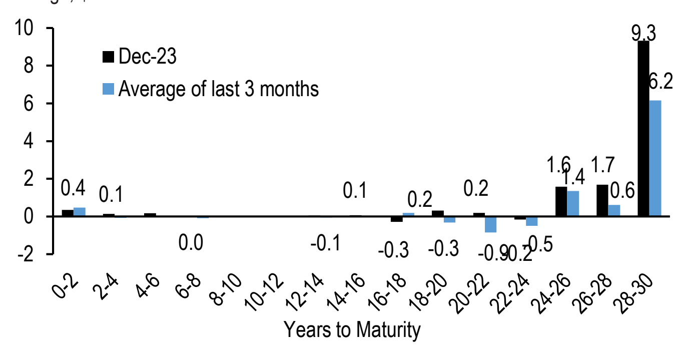
Annual change in P STRIPS outstanding; $bn and %



Source: U.S. Treasury, J.P. Morgan

Figure 19: Stripping demand remained concentrated in the long end in December

Monthly change in P-STRIPS outstanding by sector in December 2023 vs. prior 3-month average; $bn



Source: U.S. Treasury, J.P. Morgan

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Trade recommendations

- **Maintain 5s/30s steepeners**

- Stay long 100% risk, or $112mn notional of T 4.875% Oct-28s
- 100% risk, or $29.9mn notional of T 4.75% Nov-53s
- (*US Treasury Market Daily*, 11/22/23: P/L since inception: 4.1bp)

- **Maintain 75%/6% weighted 5s/10s/30s belly-cheapening butterflies**

- Stay long 75% risk, or $43mn notional of T 4.625% Sep-28s (yield: 4.603%; bpv: $442/mn)
- Stay short 100% risk, or $33.3mn notional of T 3.875% Aug-33s (yield: 4.574%; bpv: $761/mn)
- Stay long 6% risk, or $1mn notional of T 4.125% Aug-53s (yield: 4.708%; bpv: $1488/mn)
- (*US Fixed Income Markets Weekly*, 9/29/23: P/L since inception: -7.3bp)

- **Maintain 2s/5s flatteners**

- Stay short 100% risk, or $135mn notional of T 4.875% Nov-25s
- Stay long 100% risk, or $56.5mn notional of T 4.375% Nov-28s
- (*US Fixed Income Markets Weekly*, 12/8/23: P/L since inception: -4.5bp)

- **Unwound tactical 30-year shorts**

- Unwound short 100% risk, or $26.6mn notional of T 4.75% Nov-53s (yield: 4.03%; bpv: $1879/mn)
- (Unwound in *US Treasury Market Daily*, 1/4/24 P/L since inception: 10.9bp)

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Figure 20: Closed trades in last 12 months

P/L reported in bp of yield unless otherwise indicated

TRADE	ENTRY	EXIT	P/L
Duration			
5-year duration shorts	12/16/22	01/03/23	32.6
5-year duration shorts	01/12/23	02/10/23	41.1
5-year duration longs	05/19/23	06/29/23	-45.8
5-year duration longs	08/04/23	09/08/23	-27.6
5-year duration longs	10/03/23	11/02/23	14.9
7-year duration shorts	11/03/23	11/22/23	-7.9
30-year duration shorts	12/15/23	01/04/24	10.9
Curve			
2s/10s flattener	09/23/22	10/14/22	-2.4
10s/30s flattener	10/28/22	11/03/22	8.9
10s/30s flattener	11/10/22	11/21/22	13.4
10s/30s steepener	12/16/22	09/29/23	3.0
10s/30s steepener	11/03/23	11/22/23	-7.3
Relative value			
100:87 Feb-46s/May-51s curve steepener	09/09/22	11/28/22	1.8
44:88 weighted 5s/10s/30s belly-cheapening butterflies	08/26/22	12/09/22	-4.3
52:59 10s/20s/30s belly-cheapening butterflies	01/06/23	02/24/23	-8.8
100:95 weighted Nov-43s/May-48s flatteners	04/28/23	06/15/23	3.8
52:59 10s/20s/30s belly-cheapening butterflies	07/07/23	07/14/23	4.0
97:100 weighted Aug-32s/Aug-33s steepeners	06/09/23	08/03/23	1.6
100:96 weighted 3.5% Feb-39 / 3.75% Nov-43 flatteners	07/28/23	08/16/23	3.2
Number of positive trades			12
Number of negative trades			7
Hit rate			63%
Aggregate P/L			35.1

Source: J.P. Morgan

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Technical Analysis

- The 30-year bond backs up through the 4.185% 200-day moving average and post-FOMC bull gap after a cluster of momentum divergence and premium-weighted Put/Call ratio indicator sell signals on our models. We suspect that a combination of trend-following and discretionary selling pressure following the short-term reversal will drive the bond back to the 4.39% Dec 11 yield high and 4.41% Oct 38.2% retrace. Bigger picture, the developing bull market stays firmly in gear as long as the bond is trading richer than key levels in the 4.50s and 4.60s.
- Look for 10-year note weakness in the early weeks of the year to find solid support at 4.25-4.30%. Bigger picture, we expect the rally to develop further after a period of consolidation relieves the current overbought conditions.
- Fives cheapen from the 3.755-3.80% Mar-May 2023 pattern yield highs after late-Dec sell signals and test initial support at 4.075-4.12%. We think the backup can extend to the 4.25-4.30% area, where we would look to re-enter long duration trade exposure.
- The 2-year note has held more of its gains than other points on the curve, but it too has a short-term bearish setup and favors more backing and filling in the weeks ahead. Look for a 4.20-4.80% range to develop with initial support at 4.535-4.67%
- The 5s/30s curve trades right on top of the 16.5bp 50-day moving average and consolidates in the middle of the fourth quarter trading range. Key resistance rests in the 30bp-40bp area. We view the broad and multi-quarter range below that area as a base pattern and expect an impulsive steepening trend to develop into midyear. Key near-term support rests at 0bp-7bp.
- 10-year TIPS breakevens stabilize above 209.5bp-212bp 2022-2023 range support. We exited half of our medium-term tightening trade and are looking for bounces toward 230bp to re-enter that exposure.

US

Treasuries retrace the fourth quarter rally and work off overbought conditions within a budding longer-term bull market

Treasuries start the year under pressure after an impressive fourth quarter rally. Those moves ultimately led to the most overbought conditions since the Mar bank failures and the late-Dec trend deceleration triggered a cluster of our systematic technical sell signals. We suggested scaling out of long duration exposure as the rally progressed, reducing TIPS breakevens tightening trades, and eventually got short the long end after the Dec FOMC meeting. At the same time, we added to our 5s/30s curve steepening trade. We view that as a core trade and something we do not want to tactically overmanage. Instead, the manner in which we are trading duration will reflect the yield curve steepening theme and at times hedge that exposure. For now, the tactical short in the bond is meant to do just that. Additionally, we are looking to re-enter long duration exposure in the belly if the backup extends as far as we think likely in the next few weeks. Similarly, a breakeven widening that would likely develop with a duration backup would present a good opportunity to re-enter full tightening trade exposure, in our view.

The **30-year bond** triggered a cluster of bearish momentum divergence signals as it achieved the **4.03%** 4Q23 reversal pattern objective (Figure 21). Our systematic signals denoted by the green arrows on the chart effectively identify a specific pattern of trend decel-

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eration, a setup that suggests a tendency for mean reversion to higher yields over the near term when post signal volatility adjusted performance is compared to random trade outcomes. Furthermore, our premium-weighted Put/Call ratio indicators for the TY and US futures contracts triggered sell signals for the first time since Mar 2023. The Fri push through the **4.185%** 200-day moving average has the potential to bring in systematic selling pressure, as trend-following CTA-type accounts potentially reverse some of the flows that helped drive the rally. Additionally, the late-week backup put any position that was entered on the heels of the surprisingly dovish FOMC message in mid-Dec under water, potentially driving discretionary selling pressure as well. We think the backup can extend to the **4.39%** Dec 11 yield high and **4.412%** Oct 38.2% retrace. More significant medium-term support sits in the **4.50s** and **4.60s**, but we do not expect the market to test those levels. Instead, we see a high probability that a near-term range richer than **4.40%** will work off the overbought conditions and set the market up for additional rally in the months ahead.

Figure 21: The 30-year bond backs up through the 4.185% 200-day moving average and post-FOMC bull gap after a cluster of momentum divergence and premium-weighted Put/Call ratio indicator sell signals on our models. We suspect that a combination of trend-following and discretionary selling pressure following the short-term reversal will drive the bond back to the 4.39% Dec 11 yield high and 4.41% Oct 38.2% retrace. Bigger picture, the developing bull market stays firmly in gear as long as the bond is trading richer than key levels in the 4.50s and 4.60s.

30-year bond yield, daily bars; %

Source: J.P. Morgan, CQG

The **10-year note** late-year performance created the identical signaling and setup as the long end (Figure 22). There, we think the backup can extend to the **4.255%** Oct 38.2% retrace and **4.295%** Dec 11 cheap before finding material buying pressure. Key medium-term support sits near **4.50%**. To lower yields, the rally overshot the **3.925%** Mar 61.8% retrace and **3.91%** Sep-Nov pattern objective. The **3.78%** Dec yield low stalled shy of major resistance at the **3.70%** May 2023 trend line break objective and **3.645%** Mar-May 2023 pattern cheaps. We think Tens can approach those levels in the months ahead and expect the rally to fully retrace to the **3.245%** Mar yield low by the end of the year.

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Figure 22: Look for 10-year note weakness in the early weeks of the year to find solid support at 4.25-4.30%. Bigger picture, we expect the rally to develop further after a period of consolidation relieves the current overbought conditions.

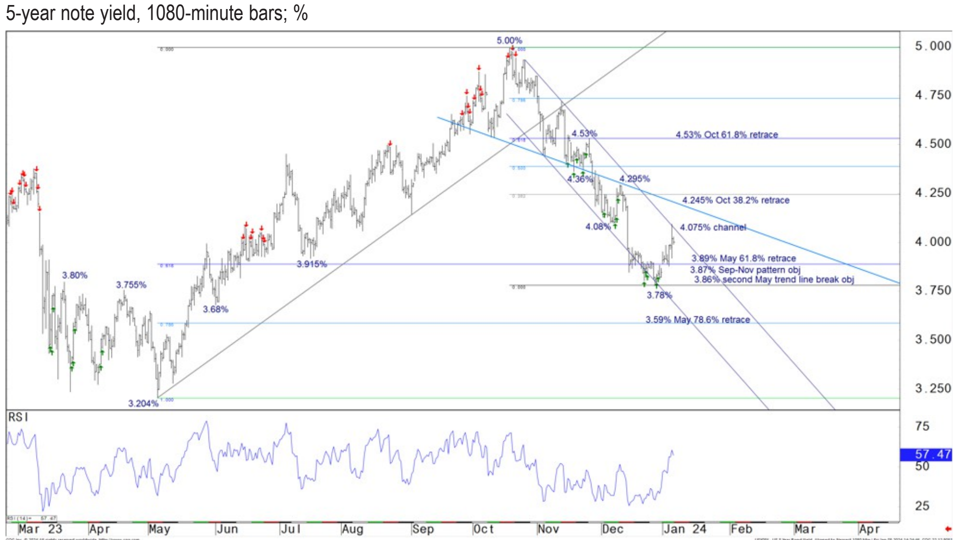
10-year note yield, daily bars; %

Source: J.P. Morgan, CQG

The **5-year note** backup already achieved the **4.075%** Oct channel, **4.08%** Dec 8 yield low, and **4.12%** 200-day MA, after the reversal from the **3.755-3.80%** Mar-May 2023 pattern cheaps triggered a cluster of sell signals (Figure 23). Look for the **4.245%** Oct 38.2% retrace and **4.295%** Dec 11 yield high to contain residual selling pressure. Other support sits back in the **3.50s**, but we do not expect the market to test that area. While the market can see further backing and filling as a range works off the overbought conditions, we expect the rally to extend in the months ahead and fully retrace to the **3.204%** Mar yield low in the first half of the year.

Figure 23: Fives cheapen from the 3.755-3.80% Mar-May 2023 pattern yield highs after late-Dec sell signals and test initial support at 4.075-4.12%. We think the backup can extend to the 4.25-4.30% area, where we would look to re-enter long duration trade exposure.

5-year note yield, 1080-minute bars; %



Source: J.P. Morgan, CQG

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Oddly, the front end has held its ground best this week, despite a sequence of strong labor market data. That said, the **2-year note** has a clear bearish reversal pattern and signal set that came together as the stalls near a key cluster of resistance that includes the **4.335%** Aug-Nov pattern objective, **4.26%** Mar-May 2023 pattern yield high, and **4.205%** Mar 61.8% retrace (Figure 24). Technically, the market looks like it can easily backup up to the **4.535%** Dec 1 yield low, **4.625%** Oct 38.2% retrace, and **4.67%** Oct trend line. The OIS forwards also had as much as **235bp** of eases priced by the end of Dec. Historically, the market has been unwilling to put more than **250bp** of easing into the forwards in the absence of sharply trending jobless claims data. Together with the technical setup, that suggests that the **4.20%** area is likely to put a floor under yields for a bit, or until the data starts to deteriorate. Look for the **4.795-4.87%** pocket of medium-term support to cap yields as the market consolidates.

Figure 24: The 2-year note has held more of its gains than other points on the curve, but it too has a short-term bearish setup and favors more backing and filling in the weeks ahead. Look for a 4.20-4.80% range to develop with initial support at 4.535-4.67%.

2-year note yield, daily bars; %

Source: J.P. Morgan, CQG

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Figure 25: The 5s/30s curve trades right on top of the 16.5bp 50-day moving average and consolidates in the middle of the fourth quarter trading range. Key resistance rests in the 30bp-40bp area. We view the broad and multi-quarter range below that area as a base pattern and expect an impulsive steepening trend to develop into midyear. Key near-term support rests at 0bp-7bp.

5s/30s curve, daily closes; bp

Source: J.P. Morgan, CQG

Figure 26: 10-year TIPS breakevens stabilize above 209.5bp-212bp 2022-2023 range support. We exited half of our medium-term tightening trade and are looking for bounces toward 230bp to re-enter that exposure.

10-year TIPS breakevens, daily closes; bp

Source: J.P. Morgan, CQG

This report was excerpted from *Global Fixed Income Technical*, Jason Hunter January 05, 2024

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TIPS Strategy

Inch by inch

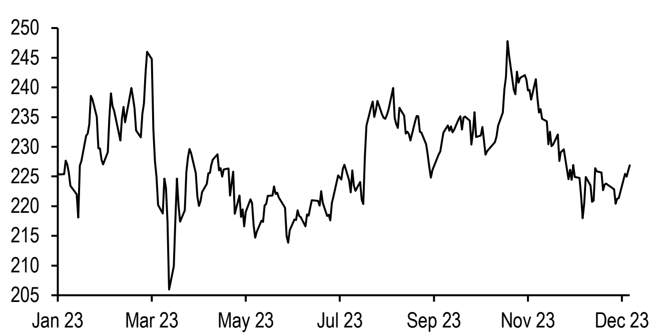
- We maintain a view that inflation will continue to gradually soften and growth will cool, but this trajectory is already largely priced in, leaving us neutral on TIPS for now
- In order for breakevens to tighten materially from current levels, we expect we'll need to see outright weakness in economic data, which we don't expect to come imminently
- We look for a 0.26% rise in core CPI in December, near consensus, amid declines in used cars, hotels and airfares, as well as a further moderation in rent inflation. However, we expect some stickiness in other core services prices
- Meanwhile, the technical backdrop for TIPS appears mixed, given a punitive carry profile over the next two months and upsized 10-year supply later this month, though a historically large index extension later this month should provide support for the market
- Overall, with valuations broadly fair and the technical backdrop mixed, we remain neutral for now

Market views

Since our last publication three weeks ago, breakevens roundtripped, narrowing into year-end before partially retracing over the past week, to end 1-3bp narrower across the curve, net of carry (**Figure 27**). Economic data over the period have generally been consistent with gradual slowing. JOLTS showed job openings continuing to fall, suggesting the labor market is coming into better balance over time, although Friday's employment report showed that labor demand remains strong and the labor market remains tight. Payrolls surprised to the upside, rising 216K (consensus:175K), though the prior two months were revised lower by 71K, leaving the 3m moving average at 165K. The unemployment rate held at 3.7% (consensus: 3.8%), while AHE also came in firmer than expected, rising 0.4% in December (4.1% oya), representing an acceleration over recent months (see *Solid job growth, but with less rosy details*, Michael Feroli, 1/5/24).

Figure 27: Breakevens have settled into a range following the aggressive repricing over the prior six weeks

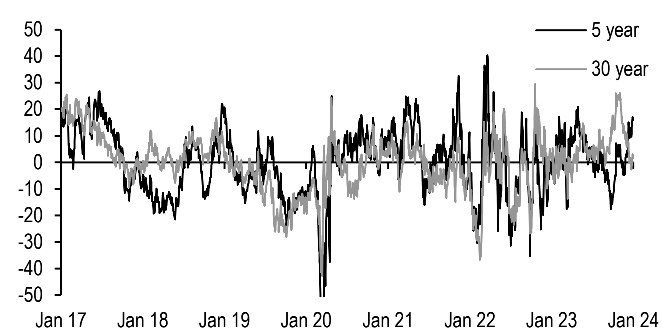
1-month forward 10-year breakevens; bp



Source: J.P. Morgan

Figure 28: Intermediate and long-end breakevens look fair, while front-end breakevens appear somewhat rich

Residual on J.P. Morgan breakeven fair value model*; bp



Source: J.P. Morgan

* 1m-forward, seasonally-adjusted breakevens are regressed on the J.P. Morgan Commodity Curve Index (JPMCCI) as well as its square and the 3mx3m/15mx3m OIS curve; regression over the last 7 years; 5Y model: R^2=93%, SE=13bp; 30Y model: R^2=84%, SE=11bp

As we look ahead, we maintain a view that inflation will continue to gradually soften and growth will cool, but this trajectory is already largely priced in, leaving us neutral

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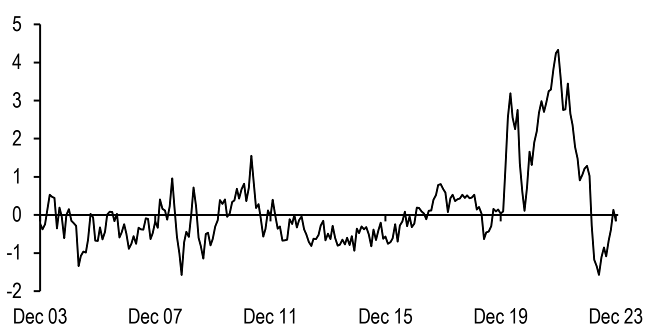
on TIPS for now. Importantly, markets imply CPI inflation will cool to under 2.2% over the next 12 months, while OIS rates imply more than 80bp of easing by the July FOMC meeting and nearly 200bp of eases by mid-2025. Our broad commodity price index is sitting near its lowest levels of the last two years. Moreover, breakevens appear close to fairly valued versus their drivers across most of the curve—the lone exception is the 5-year point, which continues to trade somewhat rich versus model-implied values (**Figure 28**). Still, in order for breakevens to tighten materially from current levels, we expect we'll need to see outright weakness in economic data, which we don't expect is coming imminently.

Importantly, the December CPI release looms large next week. We look for a near-consensus 0.26% rise in core CPI (consensus: 0.3%) as well as a 0.2% increase in the headline index (consensus: 0.2%). This would leave the headline NSA at 306.465, slightly below the market fixing of 306.630. Within the core basket, the December figure should be weighed down by a 1.6% decline in used vehicles, as well as gradual softening in both OER and primary rent, which we expect rose 0.33% and 0.34%, respectively. We also look for modest declines in airfares and lodging away from home (see *US Weekly Prospects*, Michael Feroli, 1/5/24). However, elsewhere, we still expect to see stickiness in other core services, and last month's weakness in other core goods prices may not be repeated. As our economists have highlighted recently, the significant disinflationary force coming from falling goods prices is likely beginning to fade as we head into 2024. Notably, the FRBNY supply chain pressure index which has turned upwards last quarter, partly reflecting the reemergence of upward pressure on global transportation costs (**Figure 29**). A similar firming is also evident in the global PMI survey on output prices and delivery times (see *Not so fast*, Bruce Kasman, 1/4/24). The disruptions to trade through the Red Sea route could be impacting shipping costs (see *Monitoring the impact of Red Sea disruptions*, Francesco Arcangeli, 12/21/23).

Figure 29: Supply chain pressures have been mounting since early this summer

Global Supply Chain Pressure Index (GSCPI); standard deviations from average value



Source: Federal Reserve Bank of New York

Figure 30: Carry should remain negative in February following a soft December CPI print

Carry for February for TIPS and TIPS breakevens (bp)*

Hot-run	Maturity	TIPS carry	BE carry
5-year	10/15/28	-11.0	-8.2
10-year	7/15/33	-5.4	-3.9
30-year	2/15/53	-2.0	-1.4

Source: J.P. Morgan
*Assumes Headline CPI-U NSA fixing of 306.465 and repo rates of 5.37%, 5.32%, and 5.35% for 5-, 10-, and 30-year TIPS as well as 5.39% for respective nominals

Lastly, the technical backdrop for TIPS appears mixed over coming weeks. **First**, the carry profile on TIPS should remain highly punitive over the next two months. If our forecast for December CPI is correct, we estimate -8.2bp of carry on long 5-year breakeven positions in February, similar to this month's carry profile (**Figure 30**). **Second**, demand for TIPS-focused funds has generally remained weak, with outflows accelerating in December, though they moderated over the past week (**Figure 31**). **Third**, this month the market has to contend with an upsized new-issue 10-year auction, with real yields sitting nearly 40bp lower than the last auction. However, we recognize that over the near term, these factors are likely to be outweighed by a very large index extension at the end of this month. In addition to the

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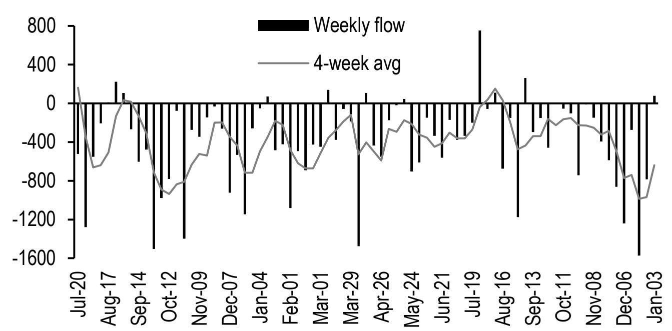
new 10-year supply, two January 2025 issues drop out of the index this month, which we estimate should result in a 0.34-year duration extension, much larger than the average 0.21-year extension for January month-end (**Figure 32**).

Figure 31: Outflows from TIPS-focused funds have accelerated in recent weeks

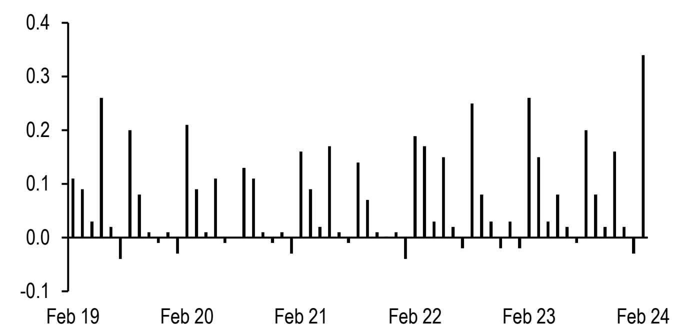
Estimated weekly inflows into the top 10 TIPS-related ETFs and 4-week moving average



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

Figure 32: We expect a historically large month-end index extension at the end of January

Estimated empirical duration extension on the Bloomberg US TIPS (Series-L) Total Return Index; years



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

Putting the pieces together, while a backdrop of moderating inflation and softer growth should put downward pressure on breakevens over the medium term, we don't expect the data to deteriorate imminently. **With valuations broadly fair and the technical backdrop mixed over the near term, we prefer to stay neutral on TIPS for now.**

Figure 33: Trade performance over the past 12 months

P/L reported in bp of yield unless otherwise indicated

TRADE	ENTRY	EXIT	P/L
30-year breakeven narrowers	11/9/2023	12/7/2023	21.7
5Yx5Y inflation swap shorts	9/29/2023	10/13/2023	2.8
3Yx2Y breakeven narrowers	7/28/2023	9/12/2023	5.3
Beta-weighted 5Y breakeven wideners	6/9/2023	7/13/2023	5.1
2Yx3Y breakeven narrowers	5/11/2023	6/1/2023	9.6
1Yx1Y inflation swap longs	1/27/2023	2/22/2023	13.4
Feb-51 TIPS longs	9/23/2022	12/9/2022	10.2
AGGREGATE:			
Number of trades	7		
Number of winners	7		
Hit ratio	100%		
Average P/L (bp of yield)	9.7		

Source: J.P. Morgan

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Interest Rate Derivatives

Happy new taper

- Minutes from the December FOMC meeting suggest that the FOMC may be inclined to taper and eventually cease its quantitative tightening program sooner than we had previously expected. We characterize the upside risk to Fed balance sheet size and liabilities by examining the impact of two possible scenarios - a repeat of the 2019 timeline, and a slightly accelerated version of that timeline. Under such scenarios, the Fed's balance sheet could finish the year $400-500bn larger than our baseline forecast, while RRP could finish the year $300bn higher
- A higher RRP balance has implications for front-end spreads - our fair value model suggests that front-end spreads could widen by 3-5bp in the event of an earlier end to QT. However, given that front end spreads are already ~10bp wide to fair value, we remain neutral on front end spreads
- An earlier taper, coming on top of a rate cycle that is already poised to turn, could increase the willingness of banks to add USTs, at least on an asset swap basis. We also project that banks will post modest AOCI gains in 4Q23, which should be helpful on the margin
- With swap spreads in the belly narrow to fair value, and the backdrop for banks' UST demand potentially turning more favorable, we now recommend initiating outright spread wideners in the 5-year sector
- In the long end, spreads appear rich and seem to be converging towards fair value. We remain biased towards narrower spreads in the long end and recommend initiating outright spread narrowers in the 30-year sector
- With the Fed likely to remain on hold in the near-term, carry trades that are well hedged continue to be attractive as a theme - initiate 100:80 weighted 3Mx1Y/Greens flatteners hedged with 80% risk weighted 3M forward 2s/10s steepeners
- We maintain our long gamma bias as policy uncertainty broadens to now include balance sheet policy. In addition, a higher terminal Fed balance sheet size is supportive of slightly higher implieds and valuations are currently cheap in several sectors ...
- … buy 2Yx2Y swaption volatility, but hedge the downside risk from falling Fed-easing expectations with a suitably weighted short in July Fed funds futures

Happy new taper

In the three weeks since mid-December, economic data has on balance surprised to the upside while inflation indicators remain consistent with softening. Perhaps most importantly, Friday's Payrolls report was generally strong (albeit somewhat moderated by downward revisions to previous data and by a drop in the participation rate), but this strength was quickly tempered by ISM data on Friday. All in all, yields are modestly lower at the front end of the curve and somewhat higher at the long end, relative to mid-December levels. Swap spreads, which generally drifted narrower into year-end, have rebounded wider and are now closer to unchanged over the same period. Implied volatility, however, is generally higher except for short expiries on short tails (**Figure 1**).

For market participants returning from their holidays, there is already a significant new development to grapple with in the new year. The release of the December FOMC meeting minutes this week indicated that there was no discussion of the timing of rate cuts even as

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members were comfortable with the softening in inflation. However, discussions regarding the balance sheet suggest that the FOMC may be inclined to taper - and eventually cease - its quantitative tightening program sooner than we had guesstimated. It is too soon yet to reach firm conclusions regarding a potential taper, and indeed our economists are not calling for such an outcome as of yet. But as our Treasury strategists note, the 2019 experience offers at least a starting point when contemplating the outlook for QT's eventual end. That episode began with a technical discussion of balance sheet policy in the December 2018 FOMC meeting, followed by a more active discussion in the January meeting and the eventual announcement of a taper at the March meeting. Taper itself began in May of 2019.

Figure 1: Yields have been mixed in recent weeks, but implied volatility is higher

Selected statistics for SOFR swap yields (%), swap spreads (bp), and swaption implied vols (for 6M and 2Y expiries; bp/day); 12/15 /2023- 1/5/2024

		start	chg	end	min	mean	median	max
Swap yields	2Y	4.26	-0.04	4.22	4.06	4.16	4.15	4.26
	5Y	3.65	0.05	3.71	3.49	3.60	3.58	3.71
	10Y	3.54	0.11	3.65	3.41	3.52	3.51	3.65
	30Y	3.34	0.16	3.50	3.25	3.35	3.34	3.50
Swap spreads	2Y	-16.6	0.9	-15.7	-18.7	-17.2	-17.2	-15.6
	5Y	-27.2	-2.0	-29.2	-31.5	-29.5	-30.0	-27.2
	10Y	-38.6	-1.0	-39.6	-41.8	-39.2	-39.0	-38.2
	30Y	-68.6	-1.0	-69.7	-72.0	-69.7	-69.6	-68.6
6M expy vol	2Y	8.30	-0.19	8.11	8.11	8.33	8.30	8.50
	5Y	7.79	-0.10	7.69	7.69	7.78	7.76	7.93
	10Y	6.89	0.20	7.09	6.82	6.99	6.99	7.14
	30Y	5.98	0.12	6.10	5.91	6.02	6.01	6.13
2Y expy vol	2Y	7.55	0.15	7.70	7.50	7.66	7.68	7.76
	5Y	6.96	0.28	7.24	6.90	7.10	7.12	7.27
	10Y	6.34	0.36	6.71	6.29	6.50	6.51	6.71
	30Y	5.42	0.36	5.78	5.37	5.57	5.58	5.78

Source: J.P. Morgan.

Figure 2: Our baseline projections for the evolution of the Fed's balance sheet in 2024, assuming that QT continues all year with no taper

Current and projected total Fed balance sheet assets, RRP, TGA, Reserves, and Commercial bank deposits* through 2024, $bn; 1/3/2024

End-of-the-month	Fed Assets	RRP	TGA	Reserves	Commercial Bank Deposits
1/3/2024	7731	1086	743	3459	17591
Jan-24	7653	1023	750	3437	17624
Feb-24	7577	966	750	3418	17658
Mar-24	7450	909	750	3348	17652
Apr-24	7354	850	750	3311	17672
May-24	7256	794	750	3269	17689
Jun-24	7175	721	775	3236	17712
Jul-24	7094	668	775	3207	17740
Aug-24	7013	615	775	3179	17767
Sep-24	6932	551	800	3138	17784
Oct-24	6853	503	800	3107	17809
Nov-24	6774	460	800	3071	17831
Dec-24	6697	418	800	3036	17853

Source: J.P. Morgan., FRED, Federal Reserve H.4.1, Federal Reserve H.8
* Deposits as of 12/29/2023 Fed H.8. release

Our refreshed baseline forecast for the Fed's balance sheet size and major liabilities (which assumes that QT extends all year with no taper) is shown in **Figure 2**. But in light of this week's developments, we consider the potential implications of an early-onset taper. In particular, we examine the scenario laid out by our Treasury strategists - one where Board staff present a plan at the January FOMC meeting, followed by a formal announcement of taper in March and implementation commencing in May, and QT's cessation in September. We also consider an even more accelerated scenario, where taper begins in April and QT ceases in July. **Under these two scenarios, the Fed's balance sheet would be higher than current baseline forecasts, as would projections of Reserves and RRP balances**, as shown in **Figure 3.**

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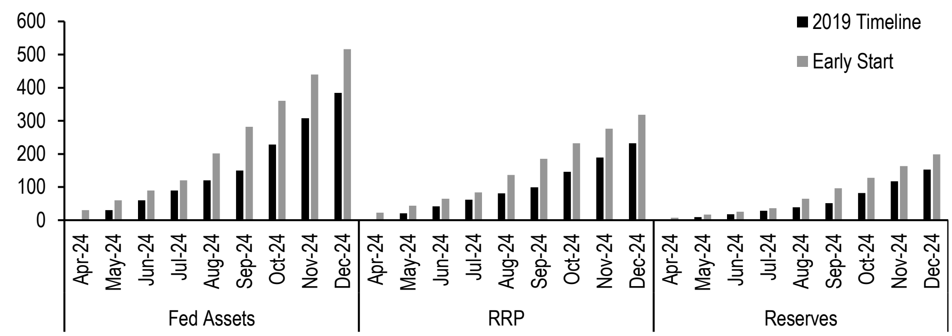
Figure 3: The prospect of an early taper brings upside risk to the Fed's balance sheet size as well as RRP balances and Reserves

Cumulative impact of an earlier end to QT (relative to the baseline) for total Fed Assets, RRP and Reserves under two different scenarios*; $bn



Source: J.P. Morgan.
*Baseline scenario assumes that QT continues through 2024 with no taper. 2019 Timeline assumes QT taper begins in May and that QT ends in September; early start assumes QT taper begins in April and that QT ends in July. UST runoff caps are assumed to be cut in half during the taper.

The prospect of a higher terminal RRP balance has important implications for front end spreads. As we discussed in our Outlook for 2024 (see [2024 Interest Rate Derivatives Outlook]), front end spreads are impacted by RRP balances, with a fairly significant positive coefficient. Thus, this shift in balance sheet expectations suggests that RRP could be biased 200-300bn higher by year end, relative to previous expectations. This suggests that 2Y swap spread fair values should be higher by 3-5bp on a forward basis; markets are likely to widen front end spot swap spreads in anticipation. But despite that, swap spread wideners are far from compelling in the 2-year sector, because of valuations that remain considerably wide versus fair value.

But perhaps an even more important channel could be the effect that QT tapering expectations would have on bank demand for USTs, at least on an asset swap basis. As is well known, banks have shied away from adding securities to AFS portfolios due to an unpleasant trifecta of factors - (i) a more elevated liquidity preference in the aftermath of SVB's collapse, (ii) diminished benefits from accrual accounting as markets began to punish banks for unrealized losses on securities when rates rise, without regard for any offsetting gains in the expected value of deposit books (which are not captured in accounting measures), and (iii) shifting depositor behavior, which points to rising deposit betas and thus diminished duration appetite.

But the tide may be turning, for due to several reasons. **First**, the stage of the rate cycle is more conducive, with the hiking cycle seemingly behind us and the next move likely to be an ease (even if not imminent). **Second**, thanks to a decline in yields in 4Q23, AOCI changes were likely positive even if somewhat modest in magnitude (given the steady derisking of AFS books during much of 2023), which is helpful on the margin. We estimate that the four largest domestic banks will see aggregate gains of about $2bn in 4Q23, while the next ten are likely to see AOCI gains of $1bn (**Figure 4**). **Third**, with QT's taper now appearing likely in 2024, balance sheet policy could turn favorable as well. **Fourth**, one should not forget that the Treasury likely remains open to supply-side-adjustments, should they become necessary. **And last but not least**, swap spreads remain significantly negative across much of the curve, and asset-swapping shorter maturity Treasuries is likely attractive as a way for banks to pick up incremental spread over IOR while mitigating interest rate risk.

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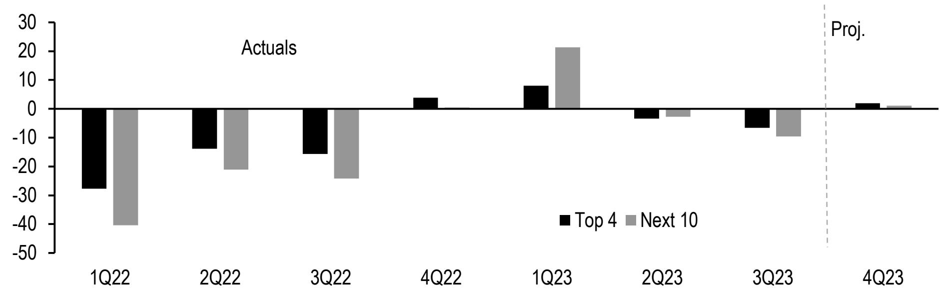
Figure 4: Banks are likely to post modest gains in AOCI this quarter thanks to a decline in yields

Realized and projected* quarterly change in AOCI for the top 4** and next largest 10 US banks**; $bn



Source: J.P. Morgan.

*AOCI projections use our estimation methodology from April showers, Flowers bloom, Hikes loom (4/22/2022). Coefficients are estimated by calculating the change in duration due to convexity in 3Q23 (starting duration plus two times convexity times rate change) and assuming a 40% duration hedges for both larger banks and small banks from the estimated coefficients in the prior quarter. We assume convexity coefficient remains unchanged. AOCI is projected by using these estimated coefficients and the change in yields in 4Q23.

** Four top banks include JPM, BAC, C, WFC; next ten largest banks include GS, MS, USB, PNC, TFC, SCHWAB, TD, COF, BK ,STT

All in all, the market backdrop is shifting in a manner that could make banks more willing to add USTs on an asset-swap basis, especially as assets continue to run off and pressure banks to consider attractive replacements. This, coupled with the fact that spreads appear too narrow in the belly (**Figure 5**) as well as the fact that the window for seasonal spread narrowing around year-end is now almost behind us, leaves us biased in favor of wider swap spreads, particularly in the belly of the curve. To be sure, there is some risk of such near term narrowing given the risk of financial sector debt issuance (and related swapping) as we move into earnings season, but we would view any such narrowing as opportunities to add widening exposure. As a result, **we now recommend outright swap spread wideners in the 5-year sector** (see Trade recommendations).

The wings of the curve are the exceptions to our spread widening view. **In the front end, although the emerging risk of an earlier taper is in fact supportive of wider spreads (all else equal), valuations are already quite rich and we don't see the case for front end wideners as compelling**. Similarly, in the long end of the curve, 30-year maturity matched swap spreads remain wide to fair value but the residual has been converging recently (**Figure 6**), **and we recommend outright narrowing exposure at the long end of the curve** (see Trade recommendations).

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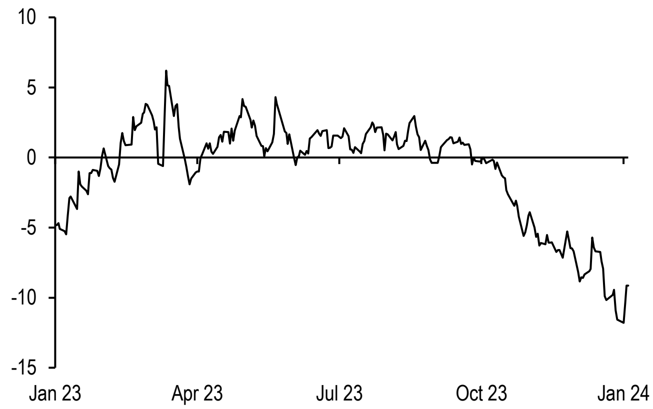
Figure 5: Swap spreads in the 5-year sector have uncharacteristically narrowed relative to fair value in recent months, but should bounce back as the backdrop turns more favorable

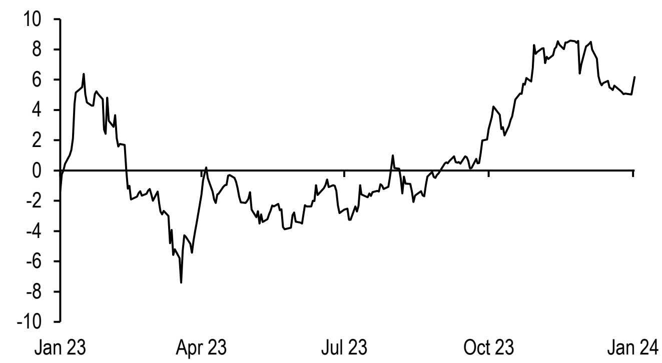
Residual from regression of 5Y maturity matched swap spreads versus their drivers*, Jan 2023 - Jan 2024; bp



Source: J.P. Morgan.
* Fair value for 5-year swap spread is calculated as per the model detailed in Figure 14 of our 2024 Interest Rate Derivatives Outlook

Figure 6: Swap spreads at the long end of the curve have widened versus fair value in recent months, but this has been correcting more recently

Residual from a regression of 30Y maturity matched swap spreads versus their drivers*, Jan 2023 - Jan 2024; bp



Source: J.P. Morgan.
* Fair value for 30-year swap spread is calculated as per the model detailed in Figure 18 of our 2024 Interest Rate Derivatives Outlook

Lastly, given this combination of views, **we also recommend maintaining exposure to 5s/30s swap spread curve flatteners** even though we had originally recommended this trade as a tactical trade around year-end.

Swap yield curve

On the swap curve, we continue to seek efficient ways to position for carry and slide, given that the Fed is likely to remain on hold in the near term. As we have noted elsewhere (see 2024 Interest Rate Derivatives Outlook), the Fed is likely to remain patient and resist the urge to ease prematurely, but much easing is already priced into near term forwards. Thus, in the near term, forwards are unlikely to be realized and the "roll-up" is likely to be supportive of carry trades. That said, we have also noted the importance of ensuring that such carry trades are well hedged, in order to prevent gains from carry being eroded by macro volatility.

One such trade that currently appears attractive is to initiate a 3Mx1Y / Greens weighted flattener (1:0.8 risk weighted) paired with 80% of the risk in a 3M forward 2s/10s swap curve steepener. As seen in **Figure 7**, the 3Mx1Y / Greens curve has been well correlated to the 3M forward 2s/10s swap curve in recent months, and is currently over 6bp steep relative to that relationship. In addition, these two curves have tended to remain in line with each other and the residual has been fairly mean-reverting (**Figure 8**). But most of all, carry on a box trade that combines a 3Mx1Y / Greens weighted flattener with a 80% risk weighted 3M forward 2s/10s swap curve steepener is considerably attractive, at 6.5bp/month. Therefore, **we recommend this trade** (see Trade recommendations).

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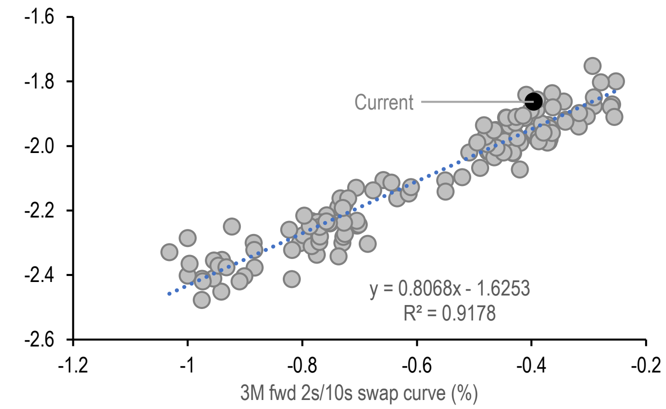
Figure 7: The weighted 3Mx1Y / Greens curve has been well correlated to the 3M forward 2s/10s swap curve in recent months, and is currently too steep relative to that relationship

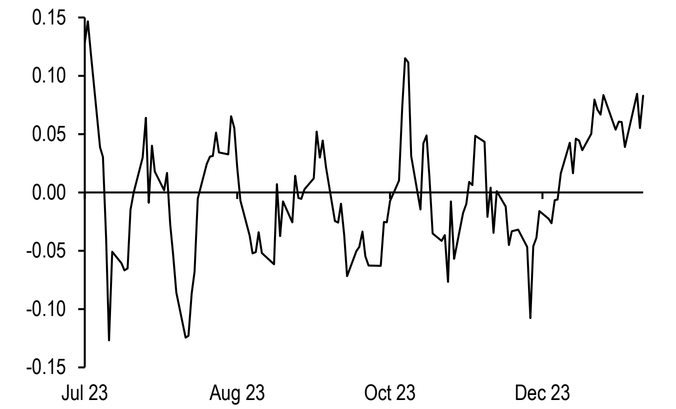
3Mx1Y/Greens swap curve (1:0.8 weighted) versus 3M fwd 2s/10s swap curve, July 2023 - current; %



Source: J.P. Morgan.

Figure 8: … and the residual from this relationship has tended to be highly mean-reverting

Residual from regressing the 3Mx1Y/Greens (1:0.8 weighted) against 3M fwd 2s/10s swap curve, July 2023 - current; %



Source: J.P. Morgan.

Options

Since our last publication in mid-December, implieds have risen through year-end and into the new year led by longer expiries and tails (see Figure 1). Delta hedged long straddle positions have been profitable over this period thanks largely to this rise in implieds - as seen in **Figure 9**, returns from gamma net of theta have mostly been close to flat (except in 30-year tails), and overall returns from long delta hedged straddles are almost entirely attributable to vega P/L.

New year, new taper, new outlook for implieds? Our long gamma stance in recent weeks was largely driven by seasonals around year-end, but **we now recommend maintaining a long gamma bias going forward due to several reasons**. **One**, as we noted earlier, the new year has already been eventful as the minutes from the December FOMC meeting brought Fed balance sheet policy to the forefront. To the extent that policy uncertainty now broadens to include balance sheet uncertainty, this is likely to support higher realized volatility especially in long tails. **Two**, should an early-onset taper become reality, it would imply a higher-than-previously-expected terminal Fed balance sheet size, which (all else equal) ought to bias implied volatility higher than previously expected. This is because implied volatility depends on the size of the Fed's balance sheet with a positive coefficient (**Figure 10**) - *ceteris paribus*, an earlier than expected end to QT could bias implieds higher by 0.1 - 0.2bp/day relative to prior expectations.

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Figure 9: Long straddle returns have been profitable thanks largely to the rise in implieds

P/L from daily delta-hedged long straddles † between 12/15 and 1/4 , estimated vega P/L*, gamma P/L** and theta P/L*** for the period; bp/notional

		P/L Attribution				
Structure	Actual P/L	Vega P/L	Gamma P/L	Theta P/L	Gamma + Theta P/L	Other P/L
1Yx2Y	1	2	8	-7	1	-2
1Yx5Y	5	7	15	-13	2	-3
1Yx10Y	27	31	26	-23	2	-7
1Yx30Y	54	58	58	-44	14	-17

Source: J.P. Morgan.
† Assumed to be delta hedged daily, options are rolled on a monthly basis, assumes no transaction costs
* Vega P/L is estimated as inception vega times change in implied vol (starting implied vol minus aged implied vol on end date)
** Gamma P/L is estimated average gamma x 0.5 x monthly realized volatility x 181 (to represent the time period)
*** Theta P/L is estimated as spot premium minus aged premium at inception

Figure 10: All else equal, an early end to QT and a higher terminal balance sheet size for the Fed would bias implieds slightly higher

Fed balance sheet regression coefficient from our fair value framework*, and impact to implieds under two different QT scenarios** (bp/day)

		Impact to implieds versus baseline	
	Coeff. Fed B/S	2019 timeline	Early start
6Mx2Y	0.27	0.11	0.14
6Mx5Y	0.27	0.11	0.14
6Mx10Y	0.31	0.12	0.16
6Mx30Y	0.34	0.14	0.17
2Yx2Y	0.29	0.12	0.15
2Yx5Y	0.24	0.10	0.12
2Yx10Y	0.24	0.10	0.12
2Yx30Y	0.26	0.10	0.13
YE24 Fed B/S Proj ($tn)			
Baseline	6.7		
2019 Timeline	7.1		
Early start	7.2		

Source: J.P. Morgan
* For details see 2024 IRD outlook
** The two QT scenarios are described in Figure 3

Three, implieds currently appear cheap or near fair value across many different sectors, with shorter tail sectors such as the 2Yx2Y now appearing considerably cheap (**Figure 11**). Moreover, with CPI data almost upon us, we note that implieds could cheapen a touch further early next week, affording the opportunity to add to long volatility positions at attractive entry levels. As seen in **Figure 12**, there has been a tendency for implieds to cheapen going into the CPI data, but rebound quickly thereafter. Therefore, **given this combination of factors, we recommend taking advantage of any cheapening in implied volatility ahead of the CPI print next week to add to long volatility positions**. In particular, **we find value in the 2Yx2Y sector where we now recommend adding long exposure**.

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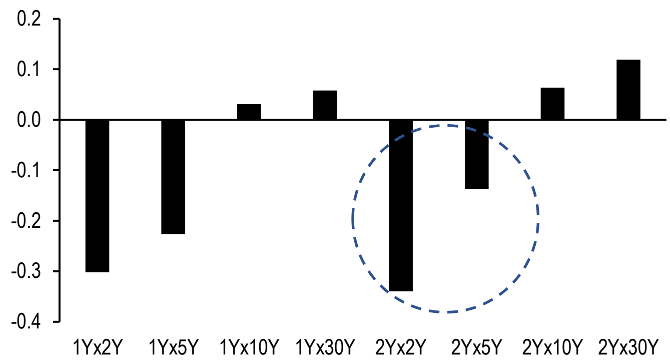
Figure 11: Implieds currently appear cheap in shorter tails and fair-to-modestly-rich in longer tails

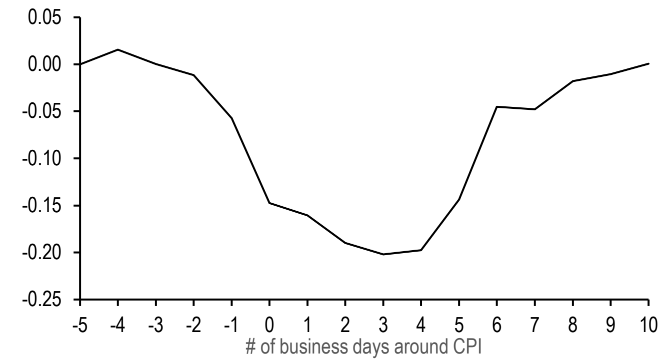
Residual from our volatility fair value model in various swaption structures*, 1/4/2023



Source: J.P. Morgan.
* For details of our volatility fair value model, see 2024 IRD outlook

Figure 12: Implieds have tended to exhibit a short-lived dip into CPI followed by a quick rebound

Cumulative change in 1yx10y implied volatility, averaged around CPI release dates, past 9 releases; bp/day

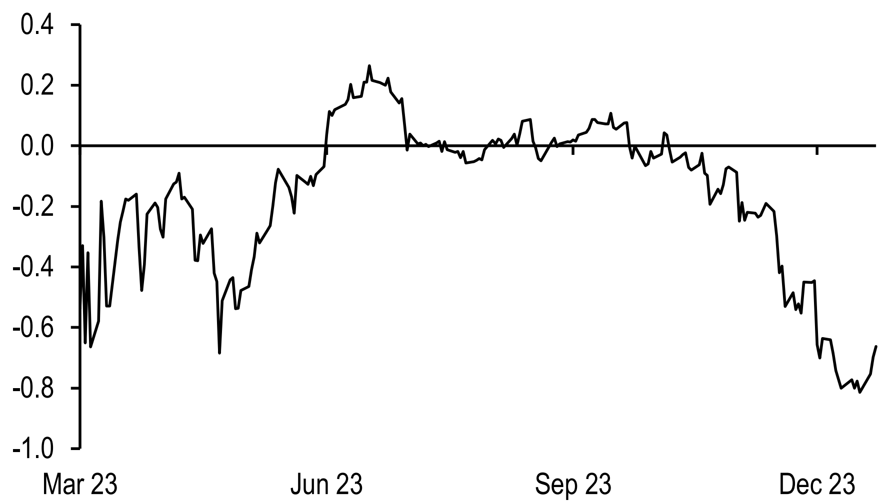


Source: J.P. Morgan.

That said, long vol exposure in the near term has the drawback of being exposed to a pullback in near term easing expectations. As **Figure 13** shows, the Fed expectations curve (which we proxy by 6Mx1M minus 1M OIS rate) reached its most inverted levels at year-end, and has slowly begun to retrace steeper. Given how much easing is already priced into forwards, and given the Fed's disinclination to ease prematurely, this reversal could continue. This is relevant because implied volatility depends on the absolute value of Fed expectations (see see Figure 36 in 2024 Interest Rate Derivatives Outlook). In other words, a rise in 6Mx1M forward OIS rates (assuming the 1Mx1M stays constant) is bearish for volatility - in particular, in the 2Yx2Y sector, a 100bp rise in the 6Mx1M forward OIS rate would bias implied volatility lower by about 0.7 bp/day. Therefore, **we recommend hedging 2Yx2Y long volatility positions with a suitably weighted short in July Fed funds futures contracts to hedge this risk** (see Trade recommendations).

Figure 13: Fed expectations reached its most inverted levels in December and may continue to retrace steeper

6Mx1M minus 1M OIS rate, Mar 2023 - Jan 2024; %



Source: J.P. Morgan.

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Trading Recommendations

- **Initiate swap spread wideners in the 5Y sector**
Given narrow valuations, the prospect of an earlier taper and the potential for increased appetite for UST asset swaps from banks, we look for wider swap spreads in the belly of the curve.
-Pay fixed in 3.75% Dec 31 2028 maturity matched SOFR swap spreads. Buy $100mn notional of the 3.75% Dec 31 2028 (yield: 4.007%, PVBP: $444.3/bp per mn notional), and pay fixed in $98.3mn notional of a maturity matched SOFR swap (coupon: 3.711%, PVBP: $452.0/bp per mn notional) at a swap spread of -29.6bp.
- **Initiate swap spread narrowers in the 30Y sector**
30Y spreads appear rich to fair value, and residual convergence has begun. Therefore, we are biased towards narrowers in the 30Y sector.
-Receive fixed in 4.75% Nov 15 2053 maturity matched SOFR swap spreads. Sell $100mn notional of the 4.75% Nov 15 2053 (yield: 4.199%, PVBP: $1804.1/bp per mn notional), and receive fixed in $99.0mn notional of a maturity matched SOFR swap (coupon: 3.499%, PVBP: $1821.5/bp per mn notional) at a swap spread of -70.0bp.
- **Initiate 3Mx1Y / Greens weighted flattener (1:0.8 weighted) paired with 80% risk in a 3M forward 2s/10s swap curve steepener**
The Fed is likely to remain on hold in the near term, and the easing priced into near term forwards is unlikely to be realized. The market backdrop favors yield curve roll-up trades and carry on this trade looks attractive at 6.5bp per month, and the weighted 3Mx1Y/Greens appears mispriced.
-Pay-fixed in $200.0mn notional of a 04/05/24x1Y SOFR swap at a yield of 4.488% (PVBP: $100.0/bp per mn notional). Receive-fixed in $172.4mn notional of a 01/05/26x1Y SOFR swap at a yield of 3.301% (PVBP: $92.8/bp per mn notional).
-Receive-fixed in $81.9mn notional of a 04/05/24x2Y SOFR swap at a yield of 3.965% (PVBP: $195.5/bp per mn notional). Pay-fixed in $19.5mn notional of a 04/05/24x10Y SOFR swap at a yield of 3.598% (PVBP: $821.6/bp per mn notional). This trade uses risk weights of -1.0/0.8/0.8/-0.8 on the 3Mx1Y/2Yx1Y/3Mx2Y/3Mx10Y swaps respectively. This trade is being initiated at a yield spread of 155.4bp.
- **Initiate long exposure to 2Yx2Y volatility with a suitably weighted short in July Fed funds futures to hedge the downside risk from a fall in Fed-easing expectations**
With an early end to QT having implications on the Fed's balance sheet, along with fair value considerations, we maintain our bullish bias and recommend adding longs in the 2Yx2Y which appear cheap. However, we recommend hedging the downside risk from a decline in easing expectations, by adding a short in July Fed funds futures.
-Buy $100mn notional 2Yx2Y ATMF swaption straddles. (Notification date: 2026-01-05, swap tenor: 2Y, ATMF: 3.308%, strike: 3.308%, spot premium: 245.7bp per notional, forward premium: 266.9bp per notional, bpvol at inception: 7.76bp/day). This trade assumes active delta hedging every business day.
-Sell 53 contracts of Fed funds July futures at 95.29.
This trade assumes that for 1% move in 6Mx1M / 1M curve, implieds are biased higher by 0.7 bp/day
- **Unwind 3s/5s swap spread curve flatteners**
As we are now biased towards wideners in the belly and neutral in the front end, we recommend unwinding this trade at a profit of 0.9. For original trade write up, see Fixed Income Markets Weekly 2023-12-08.
- **Unwind 20s/30s swap spread curve flatteners hedged with a 35% risk-weighted 20s/30s Treasury curve flattener**

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This trade has reached our self imposed horizon of 3 months for trades of this nature, and we unwind this trade at a profit of 0.2bp. For original trade write up, see Fixed Income Markets Weekly 2023-09-29.

- **Maintain U5/M6 SOFR futures curve flatteners paired with 110% risk in Z5/U6 3M SOFR futures curve steepeners**
  P/L on this trade is currently -1.0bp. For original trade write up, see Fixed Income Markets Weekly 2023-12-15.
- **Maintain longs in the belly of a 35:65 weighted H5/H6/Z6 3M SOFR futures butterfly**
  P/L on this trade is currently -1.2bp. For original trade write up, see Fixed Income Markets Weekly 2023-12-15.
- **Maintain 5s/30s swap spread curve flatteners**
  P/L on this trade is currently -1.9bp. For original trade write up, see Fixed Income Markets Weekly 2023-12-15.
- **Maintain long gamma exposure in the 1Yx10Y sector**
  P/L on this trade is currently -1.6abp. For original trade write up, see Fixed Income Markets Weekly 2023-12-08.
- **Maintain exposure to rising term premium by selling the belly of a 35/65 weighted 3M forward 5s/10s/15s butterfly**
  P/L on this trade is currently -0.2bp. For original trade write up, see Fixed Income Markets Weekly 2023-12-08.
- **Maintain exposure to long curve volatility by buying 6Mx2Y and 6Mx10Y straddles (41:60 vega weighted) versus selling 6Mx5Y straddles**
  P/L on this trade is currently 1.7abp. For original trade write up, see Fixed Income Markets Weekly 2023-12-08.

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

Note: trades reflect Thursday COB levels, and unwinds reflect Friday COB levels

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Trade	Entry	Exit	P/L
Spreads and basis			
5Y wideners	1/6/2023	1/20/2023	3.6
5Y invoice spread wideners	1/6/2023	1/20/2023	4.3
3Y swap wideners	12/16/2022	2/3/2023	3.5
3Y wideners, using old 5's bonds	2/3/2023	2/24/2023	7.2
100:70 weighted 20s/30s swap spread curve steepeners	1/27/2023	2/24/2023	1.2
30-year swap spread wideners paired with a short in Yen futures	2/24/2023	3/10/2023	(5.3)
Swap spread narrowers in the 5Y sector	3/3/2023	3/10/2023	3.7
Initiate FV / US Invoice spread curve steepeners via FVM3 and USM3, paired with a 20% risk-weighted short in USM3	3/3/2023	3/10/2023	0.2
Initiate swap spread wideners in the 3Y sector	3/10/2023	3/24/2023	5.1
2s/3s swap spread curve flatteners coupled with a 10% risk-weighted 2s/3s Treasury curve flattener	1/20/2023	4/14/2023	(7.0)
USM3 invoice spread wideners, paired with 10% short in the USM3	3/17/2023	4/28/2023	2.0
2Y swap spread wideners, paired with buying 7% risk in SFRM3	3/31/2023	5/5/2023	(7.5)
2s/5s swap spread curve flattener	4/14/2023	5/5/2023	(10.0)
USM3 invoice spread wideners in a rally	3/17/2023	5/5/2023	1.2
7Y spread narrowers	4/21/2023	6/2/2023	(1.4)
TY invoice spread narrowers by selling TYM3 and receiving fixed in a forward starting swap	4/21/2023	6/2/2023	(0.4)
10Y spread narrower	5/12/2023	6/2/2023	(5.7)
4s/5s swap spread curve flatteners	6/2/2023	7/14/2023	4.0
Initiate 0.45:1 risk weighted 2s/3s swap spread curve flatteners paired with a 20% beta-weighted M5/M6 SOFR futures steepener	5/19/2023	7/28/2023	(8.2)
10Y spread widener	7/14/2023	7/28/2023	0.7
2Y spread widener	6/2/2023	8/18/2023	1.6
10Y spread narrower	7/28/2023	8/18/2023	1.1
10Y spread narrower	8/25/2023	9/8/2023	1.6
3Y spread widener	8/18/2023	9/22/2023	(0.2)
FV invoice spread wideners by buying FVZ3 and paying fixed in a forward starting swap	9/8/2023	9/29/2023	(2.2)
Initiate 10s/30s swap spread curve flatteners	9/15/2023	10/13/2023	0.3
2Y spread narrowers	10/13/2023	10/27/2023	1.2
5s/10s swap spread curve flatteners, paired with a 10% risk-weighted 5s/10s Treasury curve flattener	10/13/2023	12/8/2023	1.2
FV/UXY invoice spread curve flatteners , paired with a 10% risk-weighted FV/UXY Treasury futures curve flattener	10/13/2023	12/8/2023	1.7
Initiate swap spread narrowers in the 2Y sector	11/3/2023	12/8/2023	3.9
Initiate swap spread wideners in the 5Y sector	11/3/2023	12/8/2023	(3.2)
Initiate 20s/30s swap spread curve flatteners hedged with a 35% risk-weighted 20s/30s Treasury curve flattener	9/29/2023	1/5/2024	0.2
Initiate 3s/5s swap spread curve flatteners	12/8/2023	1/5/2024	0.9

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Duration and curve	Entry	Exit	P/L
1Yx1Y / 3Mx7Y flatteners paired with 0.7 risk in 3M forward 2s/10s steepeners	11/10/22	02/03/23	4.0
5Yx5Y / 1Yx15Y forward swap curve steepeners	01/27/23	02/10/23	3.7
Sell the belly of the Z3/M4/Z4 3M SOFR futures butterfly 24:80 weight	01/27/23	02/10/23	5.4
1Yx2Y / 2Yx3Y flatteners, paired with 15% risk in receive-fixed 1Yx1Y	02/03/23	02/15/23	8.5
1Yx2Y / 2Yx3Y flatteners, paired with 15% risk in receive-fixed 1Yx1Y, using SOFR futures	02/03/23	02/15/23	10.5
1Yx1Y / 3Mx3Y swap curve flatteners paired with 20% risk in 3Mx18M / 1Yx2Y swap curve flatteners	02/15/23	02/24/23	10.2
27Mx3M / 18Mx1Y steepeners, paired with 10% risk in receive-fixed 1Yx1Y	02/15/23	03/13/23	(12.7)
Sell the belly of the U3/M4/H5 3M SOFR futures butterfly (-0.33:1:-0.77 risk weighted)	02/24/23	03/13/23	(29.4)
Conditional exposure to a steeper 1s/5s swap yield curve in a rally using 3M expiry receiver swaptions	02/24/23	03/13/23	59.3
2Y6Mx10Y / 2Y6Mx30Y swap curve steepeners with a 10% risk-weighted long in the 9Mx3M sector and a 25% risk-weighted short in the 21Mx3M sector	03/03/23	03/13/23	6.0
U3/Z3 SOFR futures steepeners (90:100 risk weighted) hedged with a 20% risk-weighted long in U5 SOFR futures	03/10/23	03/13/23	(2.3)
15Mx3M / 2Yx1Y swap curve flatteners paired with 30% risk longs in 3Mx2Y rates	04/14/23	04/28/23	5.2
3Mx7Y receive fixed swaps, paired with 42% risk in 1Yx1Y and 42% risk in 3Mx5Y payer swaps	03/31/23	05/05/23	(10.6)
Pay in the belly of a 35:55 weighted 3Yx1Y / 5Yx5Y / 3Mx15Y swap yield butterfly	04/14/23	05/05/23	(13.0)
2Yx5Y / 2Yx10Y swap curve steepeners paired with 3Mx2Y/3Mx10Y swap curve flatteners (1:1 risk weighted)	04/14/23	05/05/23	(10.3)
6M forwad 5s/10s flattener, hedged with long in rates	05/05/23	06/02/23	4.5
Position for a flatter 70:100 weighted 5s/20s swap curve in a selloff	05/19/23	06/02/23	6.2
Sell the belly of a H4/M4/U4 SOFR futures butterfly	04/28/23	06/09/23	0.7
Initiate 3M forward 3s/7s flatteners, paired with 35% long in 3Mx5Y to hedge against further steepening in a rally	06/02/23	06/09/23	3.4
Initiate conditional 3s/7s flatteners in a selloff constructed with 3M expiry payer swaptions and financed by selling 20% of the forward DV01 risk in 3Mx5Y payer swaptions	06/02/23	06/09/23	2.7
Initiate 6M forward 10s/30s flatteners, paired with 25% long in 6Mx2Y	05/12/23	07/07/23	1.5
Position for a cheaper 47:55 weighted 7s/10s/20s swap butterfly in a selloff	05/19/23	07/07/23	2.6
Initiate conditional 10s/30s flattener in a selloff constructed with 3M expiry payer swaptions, financed by selling 17% of the forward DV01 risk in 3Mx3Y payer swaptions to make the package premium neutral	06/02/23	07/07/23	5.7
Conditional richening of the belly of a 1s/5s/20s swap butterfly in a rally using 6M expiry receiver swaptions	01/20/23	07/14/23	0.1
Initiate 2Y forward 5s/30s steepeners hedged with a 15% weighted long in U3 3M SOFR futures and a 35% weighted short in U4 3M SOFR futures	07/07/23	07/14/23	12.2
Initiate 10s/15s swap curve flatteners hedged with a 15% risk-weighted long in the 7Y sector	06/09/23	08/04/23	(6.8)
Initiate UXY / US treasury futures curve flatteners hedged with a 15% risk-weighted long in the TY sector	06/09/23	08/04/23	(28.0)
2Yx1Y / 3Mx15Y flattener, plus 58% long in 2Yx1Y and 8% short in 6Mx6M	07/14/23	08/18/23	(26.3)
Initiate 6M fwd 1s/20s flatteners paired with 20% risk weighted longs in 3Mx6M and 60% risk-weighted longs in Reds	07/28/23	08/18/23	(35.7)
Initiate conditional exposure to a flatter 1s/10s swap yield curve in a selloff using 3M expiry receiver swaptions	07/28/23	08/18/23	(6.2)
Initiate 3M forward 2s/7s swap curve flatteners hedged with a 35% risk weighted long in the 1Yx1Y sector	08/04/23	08/18/23	(13.9)
Initiate 3M forward 3s/5s flattener hedged with a 15% risk weighted long in the 5th 3M SOFR futures contract	08/04/23	08/18/23	(7.7)
Initiate 2Y forward 1s/10s swap curve steepeners paired with equal risk in a 3M forward 3s/15s swap curve flattener	08/18/23	08/25/23	4.7
Sell the belly of the U4/H5/U5 3M SOFR futures butterfly (-0.43:1:-0.64 risk weighted)	09/08/23	09/22/23	2.3
Initiate 3M forward 2s/10s swap curve steepeners paired with 110% of the risk in Reds/Greens flatteners	09/15/23	09/22/23	4.9
Initiate 3Y forward 2s/10s swap curve steepeners, paired with 1Y forward 1s/5s swap curve flatteners (33% risk weighted)	09/22/23	09/29/23	5.0
Initiate 2Y forward 2s/30s swap curve steepeners paired with equal risk in a 3M forward 2s/30s swap curve flattener	08/25/23	10/20/23	(32.1)
Initiate 3Y forward 3s/30s swap curve steepeners paired with 63% risk in a 3M forward 5s/30s swap curve flattener	09/08/23	10/20/23	(18.3)
Initiate M4/Z4 SOFR futures curve steepeners paired with 55% of the risk in H4/Z5 3M SOFR futures curve flatteners	09/22/23	10/20/23	(9.9)
Initiate conditional exposure to a flatter 2s/10s swap yield curve in a rally using 6M expiry receiver swaptions	09/29/23	11/03/23	(9.2)
Initiate 3M fwd 5s/10s swap curve flatteners paired with 2Y fwd 5s/10s swap curve steepeners (50:100 risk weighted)	10/27/23	11/03/23	4.6
Initiate conditional exposure to a flatter 5s/10s swap yield curve in a rally using 3M expiry receiver swaptions	10/27/23	11/03/23	0.8
Initiate 2Y fwd 2s/5s curve flatteners paired with 25% risk in a 1st/5th SOFR futures curve flattener	11/03/23	11/22/23	5.8
Initiate 6M fwd 5s/15s curve flatteners paired with equal risk in 3Y fwd 2s/15s steepeners	11/03/23	11/22/23	4.6
Buy the belly of a 40:65 weighted Z4/Z5/Z6 3M SOFR futures butterfly	11/03/23	11/22/23	5.6
Initiate 9M fwd 1s/10s flatteners paired with a 50% risk weighted long in March 2025 3M SOFR futures	11/09/23	11/22/23	15.8

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Options	Entry	Exit	P/L
Long 6mx2y straddles, delta hedging lognormal deltas	12/16/22	01/06/23	(8.3)
Sell 1Y expiry single look straddles on the 2s/10s swap curve	01/06/23	01/20/23	10.2
Long 6mx2y straddles	01/06/23	02/03/23	(8.0)
Sell 1Yx10Y straddles, paired with pay-fixed swap hedge	02/03/23	03/10/23	(18.5)
Overweight 6Mx30Y straddles with a long duration overlay	02/24/23	03/10/23	18.7
Long 6Mx30Y straddles versus selling vega-neutral 1Yx30Y straddles	04/14/23	05/05/23	3.2
Sell 1Yx2Y straddles vs 5Yx5Y	05/05/23	05/17/23	7.8
Sell 6Mx30Y swaption straddles on a delta hedged basis coupled with a weighted short in S&P 500 futures	04/28/23	06/02/23	(1.0)
Buy 6Mx10Y swaption straddles versus selling 6Mx30Y straddles (using a notional weighting of 2:1)	04/28/23	06/02/23	2.3
Long 6Mx30Y swaption straddles versus selling a theta-neutral amount of 6Mx5Y swaption straddles	05/19/23	06/02/23	(9.9)
Buy 3Yx5Y swaption straddles versus selling a vega-neutral amount of 1Yx5Y swaption straddles	05/12/23	06/09/23	1.6
Sell 1Yx1Y swaption straddles versus buying a vega-neutral amount of 3Yx2Y swaption straddles	05/19/23	06/09/23	0.7
Buy 6Mx5Y swaption straddles, versus weighted longs in S&P futures	06/09/23	07/07/23	12.8
Sell 1Yx10Y 50bp OTM receiver swaptions versus buying 50bp OTM payer swaptions	04/21/23	07/07/23	1.1
Buy 6Mx30Y swaption straddles versus selling a vega-neutral amount of 1Yx30Y swaption straddles	06/02/23	08/04/23	(2.7)
Overweight 6Mx10Y swaption straddles versus vega-neutral amount of 1Yx10Y swaption straddles	07/07/23	08/04/23	1.0
Sell 5Yx10Y straddles vs 9Mx30Y straddles	07/14/23	08/04/23	5.9
Overweight volatility in 5Y tails versus 15Y tails using 9M expiry swaptions	07/28/23	08/18/23	(7.9)
Sell volatility on 5-year tails paired with a pay-fixed swap overlay	08/18/23	08/25/23	6.2
Sell 6Mx30Y swaption straddles versus buying 6Mx10Y and selling 6Mx2Y straddles on a suitably weighted and delta hedged basis	08/04/23	09/08/23	0.0
Sell 9M expiry single-look YCSO straddles on the 5s/30s curve, versus buying 35% vega-weighted amount of 9Mx2Y swaption straddles	06/02/23	09/08/23	2.3
Sell volatility on 30-year tails paired with a pay-fixed swap overlay	08/25/23	09/15/23	8.6
Sell 2Yx5Y swaption straddles versus buying 10Yx10Y swaption straddles	08/25/23	09/15/23	5.3
Buy 10Yx10Y straddles	03/17/23	09/22/23	1.9
Sell 2Yx2Y swaption straddles versus buying a vega-neutral amount of 1Yx10Y swaption straddles	08/25/23	09/29/23	3.4
Buy 1Yx10Y straddles versus selling 140% of the vega risk in 1Yx5Y straddles and buying 50% of the risk in 1Yx2Y swaption straddles	08/25/23	10/13/23	3.2
Sell 2Yx30Y swaption straddles versus buying a vega-neutral amount of 10Yx10Y swaption straddles	09/08/23	10/13/23	(4.5)
Sell 2Yx2Y swaption straddles versus buying a vega-neutral amount of 7Yx10Y swaption straddles	09/15/23	10/13/23	3.0
Sell 6Mx30Y swaption straddles with a pay fixed swap overlay	09/22/23	10/13/23	(11.6)
Sell 1Yx30Y swaptions straddles versus buying a vega-neutral amount of 5Yx30Y swaption straddles, paired with a 1Yx30Y pay-fix swap	09/22/23	10/13/23	(1.5)
Overweight 6Mx7Y swaption volatility versus a vega-neutral amount of 1Yx10Y swaption volatility	10/13/23	11/03/23	3.5
Buy 1Yx10Y swaption straddles paired with a receive-fixed swap overlay to hedge against a decrease in implieds due to lower yields	10/27/23	11/03/23	(1.1)
Initiate short gamma exposure in the 6Mx30Y sector	11/03/23	12/08/23	7.9
Sell 6Mx30Y swaption straddles versus buying a vega-neutral amount of 1Yx30Y swaption straddles	11/03/23	12/08/23	0.4
Others	**Entry**	**Exit**	**P/L**
WN calendar spreads narrowers	2/10/2023	2/22/2023	0.0
US calendar spread wideners	2/10/2023	2/22/2023	1.0
Long USM3 basis	3/17/2023	5/19/2023	0.7
Long UXYM3 basis	3/31/2023	5/19/2023	0.7
WN calendar spread narrowers	5/12/2023	5/24/2023	1.3
UXY calendar spread narrowers	5/12/2023	5/24/2023	1.6
TU calendar spread narrowers	8/18/2023	8/25/2023	0.5
WN calendar spread wideners	8/18/2023	8/25/2023	(3.5)
Position for a widening in WN calendar spreads	11/9/2023	11/22/2023	1.8
Buy the USZ3/USH4 weighted calendar spread hedged with USZ3/WNZ3 Treasury futures curve flatteners	11/9/2023	11/22/2023	0.2
Position for a narrowing in FV calendar spreads	11/9/2023	11/22/2023	0.3
Total number of trades			**124**
Number of winners			**84**
Hit rate			**68%**

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Recent Weeklies	
15-Dec-23	On the second day of FOMC, my true dove spoke to me
8-Dec-23	What I tell you three times is true
9-Nov-23	The tail that wagged the market
3-Nov-23	Descent towards a soft landing
27-Oct-23	Refunding, FOMC and Payrolls - a witch's brew awaits
20-Oct-23	Early Onset Volloween
13-Oct-23	Darkening skies, even before the solar eclipse
29-Sep-23	Bennu there, done that
22-Sep-23	Central banks line up in a holding pattern
15-Sep-23	Hold my Fed
08-Sep-23	A Goldilocks economy leaves us thrice bearish
25-Aug-23	Navigate by the stars when R-star is blurry
18-Aug-23	The Relative Rise of the Curve Factor
04-Aug-23	Everything everywhere all at once
28-Jul-23	Bar-Fed-Heimer
14-Jul-23	Banks to face a higher Barr
7-Jul-23	Cruel Summer
9-Jun-23	Smoke on the water, fire in the sky
2-Jun-23	Hike, skip and jump
19-May-23	Zeno's paradox
17-May-23	US Treasury Market Daily: So you're saying there's a chance?
12-May-23	On the brink
5-May-23	Treasury's Tax Extension Denied
28-Apr-23	Treasury Gets a Tax Extension
21-Apr-23	Debt and Taxes
14-Apr-23	Banking on Earnings
31-Mar-23	The central bank is more central and more bank
24-Mar-23	Fear is now the first principal component
17-Mar-23	Clear Air Turbulence
13-Mar-23	Crossing the Rubicon
10-Mar-23	Powell springs forward, banks fall back
03-Mar-23	Blasts from the distant past
24-Feb-23	Through the looking glass
22-Feb-23	US Treasury Market Daily: Unwind inflation swap longs and calendar spread positions
15-Feb-23	US Treasury Market Daily: 30-year TIPS auction preview; roll estimates; November TIC update
10-Feb-23	Return of Vol-demort
03-Feb-23	Irresistible force meets immovable object
27-Jan-23	War and PCE
20-Jan-23	DISP-pleasure
6-Jan-23	An atmospheric river runs through it

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Annual Outlooks	
21-Nov-23	Interest Rate Derivatives 2024 Outlook: Goodbye Hard Times, Hello Great Expectations?
23-Jun-23	Interest Rate Derivatives: 2023 Mid-Year Outlook
Recent Special Topic Pieces	
9-Nov-23	Death cab for QT
8-Nov-23	US bond futures rollover outlook: December 2023 / March 2024
10-Aug-23	US bond futures rollover outlook: September 2023 / December 2023
1-Jun-23	Open the floodgates
11-May-23	US bond futures rollover outlook: June 2023 / September 2023
09-Feb-23	US bond futures rollover outlook March 2023 / June 2023

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Short-Term Fixed Income

- Bank CP/CD spreads tightened this week as investors deployed their liquidity back into the short-term markets following year-end. Tighter spreads are a common theme at the start of the year, with spreads tightening by 8-12bp on average in January
- The recent volatility we have seen in SOFR, while temporary, will likely become a regular feature in 2024, particularly around statement dates and large Treasury settlement dates as ongoing balance sheet constraints and issues with dealer intermediation are compounded by the growing stock of Treasury supply
- This week's Fed minutes raise the risk that the pace of QT might slow at some point this year. Given the lack of clarity around what is considered "abundant" versus "ample" reserves, it seems reasonable that the Fed might want to take a more cautious/prudent approach in its balance sheet reduction such that a repeat of September 2019 does not occur
- Using the game plan from 2019 as the baseline, the Fed could slow the pace of QT as soon as May of this year. Less Treasuries would runoff the Fed's balance sheet, resulting in fewer collateral going back to private investors and more liquidity in the financial system. This also means $330bn in less net T-bill issuance relative to our current forecast of $675bn for 2024
- This should moderate the upward pressure on SOFR relative to FF. T-bills/OIS should also be biased narrower
- We could see the size of the Fed balance sheet holding steady in September with a terminal RRP (both foreign and ON) balance of $650bn and reserves of $3.2tn
- We do not expect the Fed to make any technical adjustment to its administered rates nor to the ON RRP counterparty limits anytime soon
- **Near-term catalysts**: Dec CPI (1/11), Dec retail sales (1/17), 4Q advance real GDP (1/25), Dec personal income (1/26)

Market commentary

Treasury yields whipsawed this week as markets digested another round of economic data and the December FOMC meeting minutes. On the data front, labor market indicators continued to support the notion of a resilient labor market. The December nonfarm payrolls report showed employment increased 216K last month, exceeding expectations, and the unemployment rate held steady at 3.7% (see *Solid job growth, but with less rosy details*, M. Feroli, 1/5/24). Initial jobless claims also came in lower than the previous reading, declining from 220K to 202K, during the week ending December 23. Although weekly readings can be noisy, the consistently low filings suggest few layoffs (see*US: A solid morning for labor market indicators*, D. Silver, 1/4/24). Meanwhile, the ISM services survey disappointed relative to expectation, falling to 50.6 in December and marking the the lowest level reported since May (see *US: ISM services survey dragged down by employment index*, D. Silver, 1/5/24). With respect to the Fed's meeting minutes, the minutes reinforced Powell's message that the hiking cycle is over, though gave no guidance or details on rate cuts even as members noted they were comfortable with the softening in inflation.

Against this backdrop, it was somewhat surprising to see the markets maintain their dovish stance as they continue to price in aggressive Fed cuts this year. Indeed, forward OIS is now pricing a 73% probability of a rate cut by March and 139bp of cuts this year, versus 78% and 150bp, respectively, at this start of this week (Figure 34). In contrast, we continue to look

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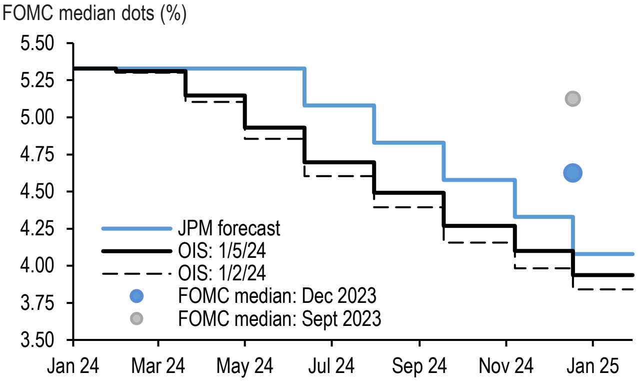
for the first ease to take place at the June meeting given the apparent strength of the labor market and our continued expectation that inflation could prove stickier than anticipated, remaining near 3% (see *Not so fast: Global core CPI to rise 3% in 1H24*, B. Kasman, 1/4/24).

Separately, in the unsecured funding markets, bank CP/CD spreads tightened this week as investors deployed their liquidity back into the short-term markets following year-end. Strong investor demand has been observed in both floating-rate and fixed-rate bank CP/CDs. Tighter spreads have been a common theme during the beginning of the year as cash that was parked over the turn gets redeployed. Indeed, 6-12m bank CP/CD FRN spreads tend to tighten by 8-12bp on average during January (Figure 35). As more liquidity gets deployed, and to the extent market participants capitulate on Fed expectations, we wouldn't be surprised if spreads tighten further.

Figure 34: Forward OIS markets continue to price in a 73% probability of a rate cut by March and 139bp of cuts this year

Fed policy outlook according to J.P. Morgan forecast, OIS market expectations, and FOMC median dots (%)



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

Figure 35: 6-12m bank CP/CD FRN spreads tend to tighten by 8-12bp on average during January

January month-over-month change in bank CP/CD FRN spreads to SOFR by tenor, 2019-2023 (bp)

Tenor	2019	2020	2021	2022	2023	Average
6m	-11	-14	-6	-2	-15	-10
9m	-14	-9	-4	0	-15	-8
1y	-21	-11	-11	-3	-16	-12

Source: J.P. Morgan

Reserve scarcity it is not

Last week's price action in the repo markets once again raised concerns that the financial system might be approaching reserve scarcity. In the days leading up to year-end, SOFR traded as high as 5.40% on 12/28, an increase of 9bp week-over-week, only to close slightly lower at 5.38% on 12/29. While increases in repo rates around December-ends are a common occurrence, last week's moves were certainly sharper than anticipated (Figure 36). And unlike the episode we saw in late November/early December in which cash was withdrawn from the Fed's ON RRP when repo rates backed up, balances at the facility increased by $189bn to $1018bn on year-end.

We continue to think this is not a reserve scarcity story. Instead, the uptick in SOFR was a reflection of typical lending dynamics around year-end—that is, dealers optimizing their balance sheets at year-end for regulatory purposes. This means rotating away from traditional repo activity like bilateral uncleared repo and tri-party repo towards higher-rate, less balance sheet intensive transactions such as sponsored repo and interdealer repo, which ultimately pushed SOFR higher. The spike in usage at the Fed's ON RRP facility also reflects a common dynamic at year-end as pullbacks in money market investment offerings over the turn combined with MMF inflows tend to push MMFs to the ON RRP facility as a source of backstop supply (Figure 37). We expect repo rates to fall back towards the ON RRP rate once dealer balance sheets normalize and Treasury settlement works its way through the system, as with normalization of the use of the ON RRP facility. To that end, SOFR has fallen

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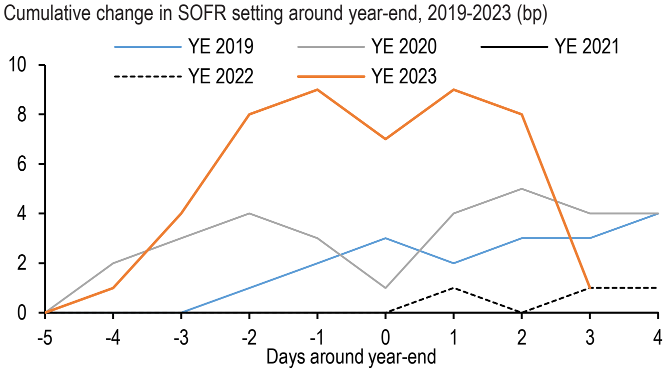
back to 5.32% as of 1/4/24, and balances at the ON RRP have drifted to the lowest point since the summer of 2021.

That said, **the recent volatility we have seen in SOFR, while temporary, will likely become a regular feature in 2024, particularly around statement dates and large Treasury settlement dates** as ongoing balance sheet constraints and issues with dealer intermediation are compounded by the growing stock of Treasury supply.

Figure 36: While increases in repo rates around December-ends are a common occurrence, last week's moves were sharper than anticipated

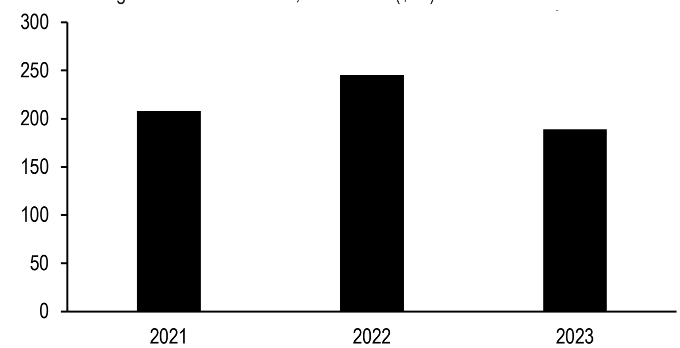
Cumulative change in SOFR setting around year-end, 2019-2023 (bp)



Source: J.P. Morgan

Figure 37: Pullbacks in money market investment offerings over the turn combined with MMF inflows tend to push MMFs to the ON RRP facility

Year-end change in ON RRP balance, 2021-2023 ($bn)



Source: Federal Reserve, J.P. Morgan

The beginning of QT's end (updated)

While reserve scarcity was not the cause of the spike in SOFR, it nevertheless brings into question whether the Fed might halt or temper QT early given SOFR's volatility. Our baseline view was that the Fed can continue through 2024 (see *Death cab for QT?*, 11/9/23), though **this week's Fed minutes certainly raise the risk that the pace of QT might slow at some point this year**. Specifically, the minutes noted that "*several participants remarked that the Committee's balance sheet plans indicated that it would slow and then stop the decline in the size of the balance sheet when reserve balances are somewhat above the level judged consistent with ample reserves. These participants suggested that it would be appropriate for the Committee to begin to discuss the technical factors that would guide a decision to slow the pace of runoff well before such a decision was reached in order to provide appropriate advance notice to the public.*" **Given the lack of clarity around what is considered "abundant" versus "ample" reserves, it thus seems reasonable that the Fed might want to take a more cautious/prudent approach in its balance sheet reduction such that a repeat of September 2019 does not occur**.

With respect to timing, **we suspect we could see a fuller discussion of potential balance sheet plans in the minutes to the January FOMC meeting**, which should be released in mid-February (see *Fed minutes get balance sheet discussion rolling*, M. Feroli, 1/3/24). For context, the last time the Fed slowed the pace of QT was in 2019. While ongoing discussions around reserves and the balance sheet took place in late 2018, it was the January 2019 minutes that suggested that a plan to end QT was reached; this was then followed by an announcement in March 2019 and implementation in May 2019, with the expectation that QT would conclude in September 2019 (Figure 38).

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Figure 38: While ongoing discussions around reserves and the balance sheet took place in late 2018, it was the January 2019 minutes that suggested that a plan to end QT was reached; this was then followed by an announcement in March 2019 and implementation in May 2019

Timeline of QT's end in 2019

Date	Type	Commentary
Jan-19	FOMC minutes [1]	"Almost all participants thought that it would be desirable to announce before too long a plan to stop reducing the Federal Reserve's asset holdings later this year"
Mar-19	Announcement [2]	"In light of its discussions at previous meetings and the progress in normalizing the size of the Federal Reserve's securities holdings and the level of reserves in the banking system, all participants agreed that it is appropriate at this time for the Committee to provide additional information regarding its plans for the size of its securities holdings and the transition to the longer-run operating regime." "The Committee intends to conclude the reduction of its aggregate securities holdings in the System Open Market Account (SOMA) at the end of September 2019." "The Committee intends to slow the reduction of its holdings of Treasury securities by reducing the cap on monthly redemptions from the current level of $30 billion to $15 billion beginning in May 2019."
May-19	Implementation [3]	"Effective May 2, 2019, the Committee directs the Desk to roll over at auction the amount of principal payments from the Federal Reserve's holdings of Treasury securities maturing during each calendar month that exceeds $15 billion. The Committee directs the Desk to continue reinvesting in agency mortgage-backed securities the amount of principal payments from the Federal Reserve's holdings of agency debt and agency mortgage-backed securities received during each calendar month that exceeds $20 billion. Small deviations from these amounts for operational reasons are acceptable."
Jul-19	Implementation change [4]	"Effective August 1, 2019, the Committee directs the Desk to roll over at auction all principal payments from the Federal Reserve's holdings of Treasury securities and to reinvest all principal payments from the Federal Reserve's holdings of agency debt and agency mortgage-backed securities received during each calendar month. Principal payments from agency debt and agency mortgage-backed securities up to $20 billion per month will be reinvested in Treasury securities to roughly match the maturity composition of Treasury securities outstanding; principal payments in excess of $20 billion per month will continue to be reinvested in agency mortgage-backed securities. Small deviations from these amounts for operational reasons are acceptable."

Source: J.P. Morgan
1 https://www.federalreserve.gov/monetarypolicy/fomcminutes20190130.htm
2 https://www.federalreserve.gov/newsevents/pressreleases/monetary20190320c.htm
3 https://www.federalreserve.gov/newsevents/pressreleases/monetary20190501a1.htm
4 https://www.federalreserve.gov/newsevents/pressreleases/monetary20190731a1.htm

If we use the game plan from 2019 as the baseline, this would imply the Fed could slow the pace of QT as soon as May of this year. The Fed would let less Treasuries runoff than if the Fed were to continue its current pace for QT, resulting in **less collateral going back to private investors and more liquidity in the financial system**. Assuming the Fed cuts the pace of monthly Treasury runoff over several meetings such that QT ends in September, similar to what they did in 2019, our Treasury strategists estimate this would increase the Fed's Treasury holdings by $330bn relative to if the Fed continued QT at its current pace. At the same time, **this would result in a commensurate reduction (i.e., $330bn) in net T-bill issuance from our current $675bn forecast for 2024**.

Speaking of T-bills, there's an open question as to what the Fed might do with its MBS portfolio once QT ends. While reinvesting MBS across the Treasury curve was the playbook in 2019 (as the Fed looks to transition to an all-Treasury balance sheet), it is worth noting that the Fed's Treasury holdings are currently considerably longer in duration than the Treasury market itself. If the Fed wants to better match the maturity profile of the Treasury market, and also reduce the volatility of its remittances to Treasury, it could choose to reinvest the MBS paydowns into T-bills instead. However, we think the bar for such a shift is high (see *Treasuries*).

Taking the slower pace of QT into consideration, we could see the size of the Fed balance sheet holding steady in September with a terminal RRP balance of $650bn and reserves of $3.2tn (Figure 39, also see *Interest Rate Derivatives*). The RRP balance includes both foreign and ON RRP, so assuming an average of $300-$350bn in foreign RRP balances, this implies that **ON RRP usage would settle in at around $300-$350bn**. More importantly, reserves would be significantly above our estimate of the lowest comfortable level of reserves at around $2.75-$2.80tn, which might suggest the Fed's desire to secure some sort of buffer above LCLoR.

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Figure 39: Taking the slower pace of QT into consideration, we could see the size of the Fed balance sheet holding steady in September with a terminal RRP balance of $650bn and reserves of $3.2tn

J.P. Morgan's projections for Fed balance sheet, assuming a slower pace of QT similar to 2019 ($bn)

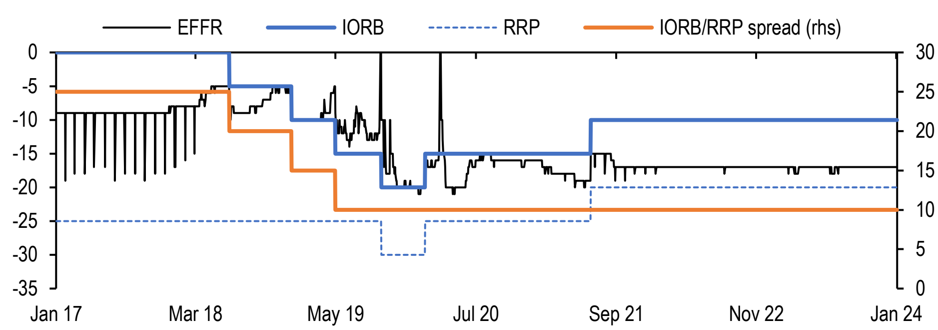
Month-end	Fed Assets	RRP	TGA	Reserves
1/3/2024	7731	1086	743	3459
Jan-24	7653	1023	750	3437
Feb-24	7577	966	750	3418
Mar-24	7450	909	750	3348
Apr-24	7354	850	750	3311
May-24	7286	815	750	3278
Jun-24	7235	763	775	3254
Jul-24	7184	730	775	3236
Aug-24	7133	696	775	3218
Sep-24	7082	650	800	3189
Oct-24	7082	650	800	3189
Nov-24	7082	650	800	3189
Dec-24	7082	650	800	3189

Source: J.P. Morgan, Federal Reserve H.4.1

Finally, as the Fed returns the balance sheet to a more steady state, it's also worth considering whether the Fed would make any technical adjustment to its administered rates. Recall in the run up to the Fed slowing the pace of QT in 2019, the effective fed funds rate (EFFR) was consistently trending higher in the fed funds corridor such that the Fed had to make technical adjustments to IORB. The IORB/RRP spread narrowed from 25bp at the start of 2018 to 10bp by May 2019 and has stayed there since (Figure 40). To that end, with EFFR currently stable at 5.33%, meaningfully below the upper bound of the fed funds target range despite the volatility we've seen in SOFR, it stands to reason that there is no urgency to increase IORB and widen the spread. Alternatively, there also doesn't appear to be any urgency to lower the ON RRP rate as SOFR is also trading meaningfully below the upper bound. Historically, the Fed has made technical adjustments when EFFR has traded within 5bp of the upper bound of the corridor.

Figure 40: The IORB/RRP spread narrowed from 25bp at the start of 2018 to 10bp by May 2019 and has stayed there since

EFFR, IORB, and RRP spreads to fed funds upper target (LHS, bp) vs. IORB spread to RRP (RHS, bp)



Source: J.P. Morgan

Nor is there an urgency to cut the ON RRP counterparty limit, which was raised from $30bn to $80bn in March 2021 and raised again to $160bn in September 2021. Usage at the ON RRP facility has consistently declined, demonstrating a natural decrease in the market's reliance on the facility as a source of backstop supply. If anything, given the growth of taxable MMFs over the past few years, it might make sense to maintain counterparty limits

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higher than $30bn, as the ON RRP facility has proven to be an effective tool in providing a soft floor for money market rates.

All told, assuming the Fed slows the pace of QT, **this should moderate the upward pressure on SOFR relative to FF** as there is less collateral and more liquidity in the marketplace. **T-bills/OIS should also be biased narrower**.

Excerpted from *Short-Term Market Outlook and Strategy*, Teresa Ho, January 05, 2024

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Agency MBS

Mortgage runoff — why QuiT now?

- **Mortgages entered 2024 at relatively tight spreads (20-25bp OAS across much of the stack); while not the exceptionally tight levels seen during periods of peak Fed buying, those are OASs we see more typically when banks are a big part of the demand picture**
- **This week mortgages have widened to more fair levels for an environment where money managers remain the marginal take-out and are sitting at significant overweights**
- **The Fed minutes raised the possibility of an earlier than expected end to QT; we still expect that the Fed will reinvest any MBS paydowns into Treasuries in order to get to an all Treasury balance sheet, which would be a spread widener…**
- **… but halting QT should support deposit growth, which would lead to more bank sponsorship of MBS, potentially supporting spreads**
- **We review the Ginnie float in 5s-6.5s and the possible overreaction in SATO on the newest major pools thanks to the rapid rise in rates a few months ago**
- **We review mortgage performance in 2023; after a dismal 2022 and poor performance through October, we ultimately saw a rebound in total and excess returns this year due to the year-end rate rally**
- **At the aggregate level, Ginnie 30s performed the best on an excess returns basis, while by coupon, the lower belly coupons like UMBS 3.5s and G2 3s performed the best**
- **We explore how conventional buyout timing has shifted now that forbearance use has waned. Buyout timing has stabilized around the 5th-8th months of delinquency in line with buyouts from successful trial mods**
- **The Housing Policy Council released a letter to VA regarding the VASP mod program proposal; a flat 2.5% mod rate would be a departure from the standard practice of targeting an effective amount of payment reduction**
- **With 18 days' worth of December paydowns, GSE data implies that 30yrs will be up 6-8%, faster than our original estimate of -3%**

Views

- **Continue to fade moves toward tighter spreads**
- **15yr 1.5s and 2s haven't kept up with the broader tightening in MBS space, making them relatively attractive**
- **Maintain a preference for higher coupon conventionals**

Mortgages entered 2024 at tight spreads, with most of the conventional 30yr TBA stack trading in the 20-25bp OAS range, though they've since backed up to the high 20s/low 30s (Figure 41). We would normally expect to see OAS in the 20s during a bank-driven demand regime, not one where money managers—especially not heavily overweight funds—are expected to be shouldering much of the lift. To be fair, these are not the exceptionally rich levels seen during periods of peak Fed purchases. Spreads on the current coupon and the index look more similar to what we saw for much of the 2015-2018 environment (Figure 42). The difference is that, in that period, the Fed and banks were both actively reinvesting,

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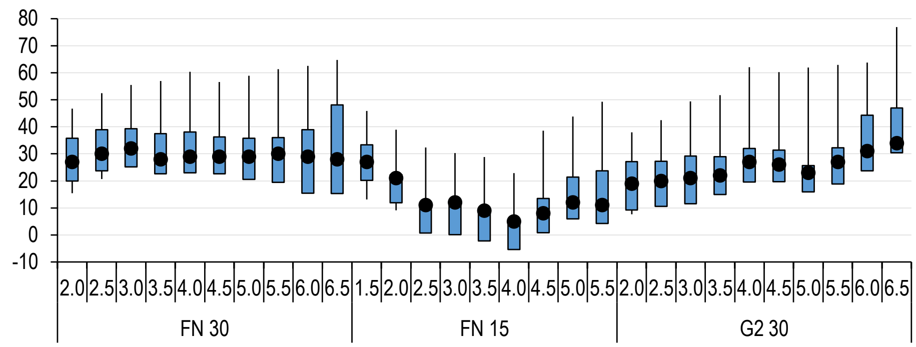
even when not net buying (Figure 43).

Figure 41: Spreads have recently oscillated between the low 20s to low 30s OAS

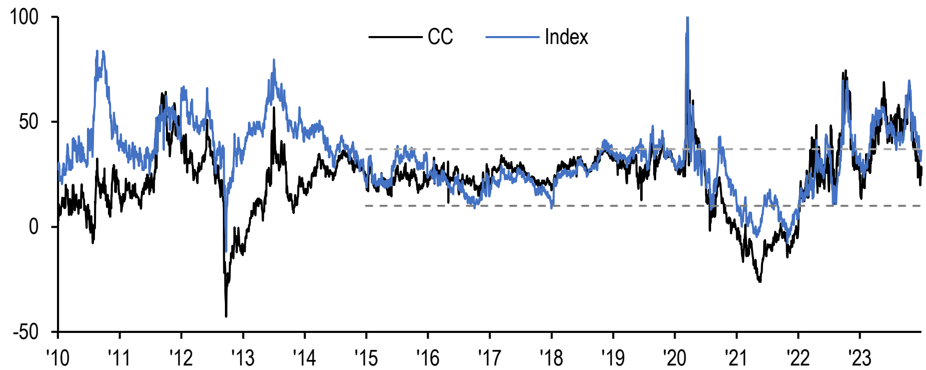
Current, 1m, and 6m Treasury OAS ranges across the TBA stack. The black dots represent the current OAS, the blue boxes represent the 1m range, and the black lines represent the 6m range (as of 1/4/2024)



Source: J.P. Morgan

Figure 42: Mortgage spreads are now in the middle of the 2015-2018 range…

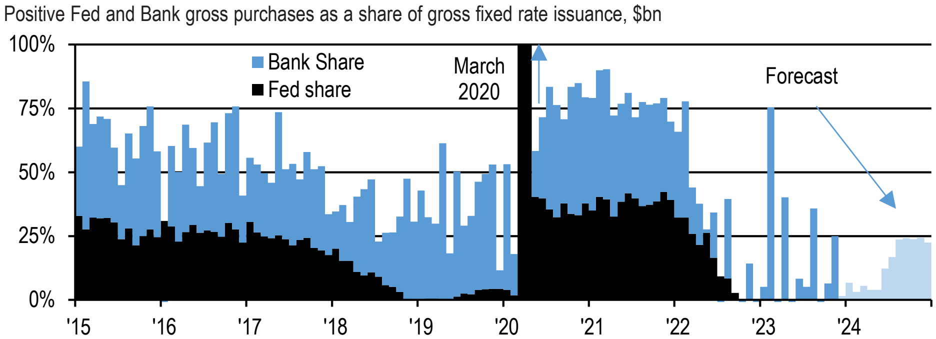
Conventional 30 current coupon and MBS index Treasury OAS, bp



Source: J.P. Morgan

Figure 43: … but back then, banks and the Fed were far more active as a share of gross issuance

Positive Fed and Bank gross purchases as a share of gross fixed rate issuance, $bn



Source: J.P. Morgan, Federal Reserve

The Fed minutes contained an unexpected discussion of the end of QT, though no firm details were released. "Several" participants highlighted the decline in the RRP and "*suggested that it would be appropriate for the Committee to begin to discuss the technical factors that would guide a decision to slow the pace of runoff well before such a decision was*

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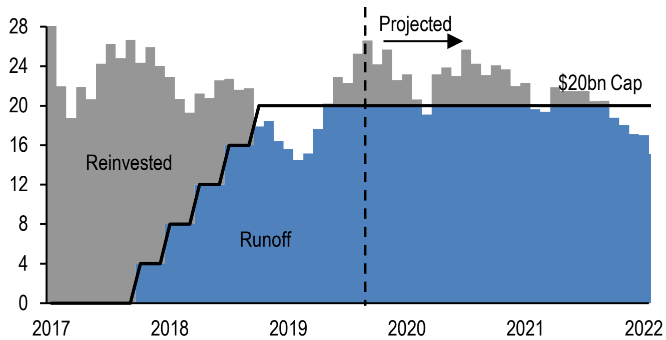
reached in order to provide appropriate advance notice to the public." As our economists noted, that could mean that we hear more in the minutes to the January meeting.

The last time the Fed went down this path, they started discussions about ending QT in late 2018, had the discussions around the policy at the January 2019 meeting, and released a plan at the March 2019 meeting that was implemented starting at the May meeting and would have finalized in September. Obviously the Repocalypse in September 2019 required further intervention, but looking to 2019 as a template for how the 2024 program could run is reasonable.

In 2019, the Treasury runoff caps were halved initially (falling from \$30bn to \$15bn) while the MBS cap remained at \$20bn. Anything above those caps was reinvested into the product it came from; eventually, as part of the plan, any MBS paydowns below \$20bn would be reinvested into Treasuries, while any MBS paydowns above \$20bn would go back into MBS. As Figure 44shows, \$20bn was a relevant cap at the time, roughly in line with the pace of runoff. Today, \$35bn is far higher than the \$15-20bn of actual paydowns, and so the probability of the Fed needing to reinvest paydowns in excess of \$35bn back into MBS is very low (Figure 45).

Figure 44: The Fed's 2019 \$20bn cap was relevant in the context of paydowns at the time ...

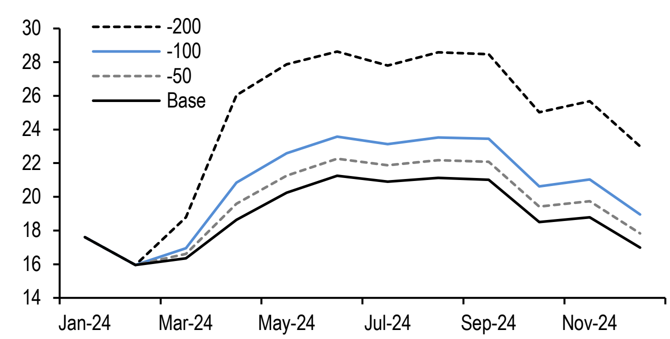
Monthly MBS runoff from the Fed portfolio, split into reinvestments and paydowns, \$bn (reproduced from *MBS Market Commentary: June 14, 2019*)



Source: J.P. Morgan, Federal Reserve

Figure 45: ... but today's \$35bn cap is difficult to hit even in very sizeable rallies

Fed runoff projections in 2024 in -200bp, -100bp, -50bp, and base case scenarios, \$bn



Source: J.P. Morgan, Federal Reserve

The end state of this process will be to reinvest all MBS paydowns in order to keep reserve balances steady. However, the Fed wants to get to an all Treasury balance sheet, and reinvesting into MBS would be counterproductive. We think they'd only want to buy MBS if there were severe market functioning problems or a housing market collapse, and neither is a near term concern. As a result, they can probably leave the \$35bn cap where it is for now, and then state that at the same time as they end Treasury runoff, they will start reinvesting MBS paydowns fully into Treasuries.

What would the end of QT mean for MBS flows? Currently, the Fed's paydowns aren't reinvested because we never hit the \$35bn runoff cap. That means that any full prepayments from their portfolio are delivered to the market in the form of gross issuance. The regular amortization and curtailments just shrink the stock of MBS outstanding. In a world where the Fed starts reinvesting Treasury maturities into Treasuries *and* MBS runoff into Treasuries, the Fed would only directly be transacting in the Treasury market. Nothing would change from a flow perspective to the MBS market in terms of the day to day required buying by the private market.

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However, by buying Treasuries and keeping the total amount of reserves in the system constant, the Fed should, all else equal, remove one source of pressure on bank deposits. More deposit growth, in turn, probably means that banks increase their assets—and buy more securities. From a flow perspective, the net effect of ending QT is supportive of both Treasury and MBS yields, which could help both products outperform other spread products that aren't directly purchased by the Fed or banks (all else equal).

The MBS/Treasury spread impact will depend on how much banks like MBS at tighter spreads. We are already at OAS levels that imply a decent amount of prospective bank buying this year; whether they can go much tighter without banks preferring the simplicity of Treasuries remains to be seen. Even during the 2015-2018 period, when banks were steadily adding and the Fed was reinvesting its paydowns, OASs were in a roughly 10-40bp range. We think the demand picture is weaker now, and so retesting those tights is unlikely; the wides have the potential to be wider as well. As such, with spreads in the high 20s / low 30s as we went to press, we think levels are on the tighter side of fair.

Tonight we get December speeds (January print). The GSE daily prepayment data is pointing to something like a +5% m/m increase vs. our original expectation that speeds could be down slightly.We'll have to see if the last few closing days of the year were depressed by the New Year's weekend. The Ginnie refi indices cratered in the last week of the year, but that print is often suppressed by the holiday schedule. We still anticipate that January speeds (February print) will contain a decent acceleration in high coupon G2s originated in late 2022 through mid 2023.

This week we dig into the production coupon Ginnie floats; CMOs have taken out a big chunk of the float, and sharp shifts in SATO are creating valuation challenges. We also recap mortgage returns and performance over 2023. We look at the recent patterns in GSE buyouts, and also review an HPC letter regarding the details of the VASP modification.

Ginnie floats: Much SATO about nothing?

Ginnies continue to propel much of the net growth in agency MBS (Figure 46), and in this section, we'll discuss how that issuance has affected floats across coupons as well as the impact of the recent sell-off (and then rally) on valuations. The float trends are especially pertinent in Ginnies where the range of coupons being made has been broader (Figure 47). They also tend to be the "canary in the coal mine" as far as prepayments go so we expect plenty of focus around prints over the next few months as lower rates filter into the market.

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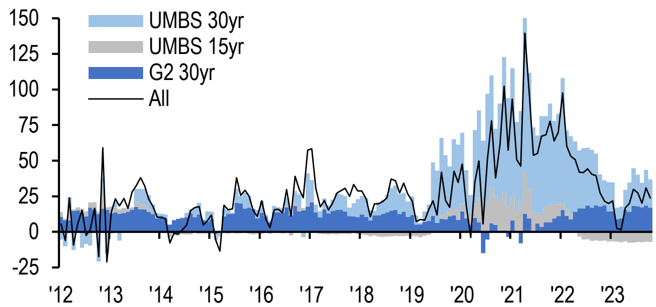
Figure 46: Ginnies remain a significant share of agency mbs net issuance...

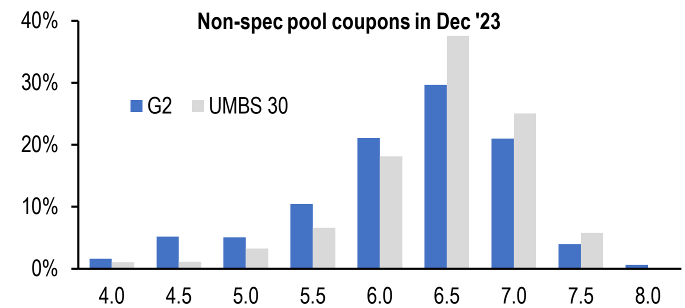
Adjusted net issuance in conventionals and Ginnies by month, $bn



Source: J.P. Morgan

Figure 47: ...and are spread across a wider range of coupons than conventionals

Ginnie and conventional 30yr non-spec issuance distribution by coupon for December 2023 issued pools

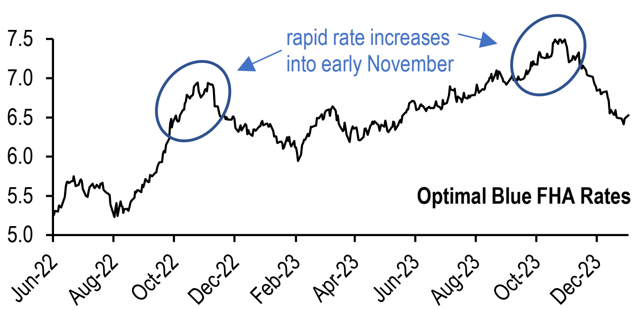


Source: J.P. Morgan

The elephant in the room with recent Ginnie issuance is the large drop in SATO seen on pools over the past few months. History does sometimes repeat itself, with a similar trajectory of mortgages rates leading to the same behavior in late 2022 (Figure 48 & Figure 49). But hold your horses—SATO is always an estimation, and its reliability is even more challenged during periods of rapid rate moves. In this case, a rapid sell-off meant that 6.5s issued in December 2023 have -0.75 SATO versus -0.33 in November and -0.2 in December. However, loan rates are locked on a daily basis, so in a sell-off, its likely that some of the later issued “low SATO” loans were just slower moving through the system, mitigating some of the pool’s perceived SATO. It’s also possible that the earlier month’s pool that has “high SATO” contained more loans that were quickly packaged.

Figure 48: The rapid sell-off and rally at the end of 2023 mirrored 2022 ...

FHA 30yr rate, %



Source: J.P. Morgan, Optimal Blue

Figure 49: ... with corresponding drops in SATO from November to December issued pools

G2 30yr major pool SATO in our model by pool issuance date, late 2022 and late 2023, %

SATO (bp)	Coupon				
Issue Date	5.0	5.5	6.0	6.5	7.0
Oct-22	15	59	78	116	
Nov-22	-78	-27	26	73	113
Dec-22	-71	-98	-46	-1	45
Oct-23	-149	-120	-67	-20	22
Nov-23	-175	-123	-82	-33	14
Dec-23	-175	-136	-79	-75	-28

Source: J.P. Morgan

The rally that followed both of these rate spikes meant that the validity of the SATO for gauging the refi response (and the impact on valuations) was immediately relevant. Looking at the late 2022 pools, we can focus in on the November/December issuance in 6.5s where there was a 74bp m/m change in SATO. These pools hit their peak speeds in July/August 2023 when lagged driving rates in FHA were 6.59%/6.71% (+12bp, Figure 50). With little change in rates, one would have expected the much lower SATO December pool to pay considerably faster. Instead, the peak speeds were practically on top of each other (Figure 51). This real-world result helps lend some credence to the theory that SATO will tend to drop too far month over month into a steep sell-off.

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Figure 50: The November and December 2022 issued pools faced similar rates in the summer of 2023...

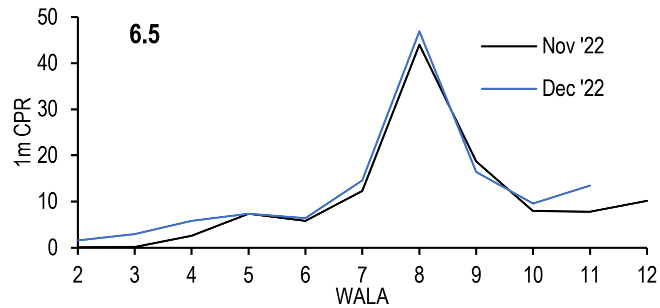
Optimal Blue driving rates (%), change in driving rates (bp), given a lag assumption

Lag (weeks):	6	6	7	7
Prepay Month	30yr Conf.	30yr Jumbo	30yr FHA	30yr VA
23-Mar	6.22	6.27	6.16	5.85
23-Apr	6.66	6.61	6.47	6.29
23-May	6.38	6.52	6.35	6.03
23-Jun	6.45	6.55	6.39	6.07
23-Jul	6.72	6.82	6.59	6.38
23-Aug	6.80	7.02	6.71	6.51
23-Mar	-17	-19	-20	-30
23-Apr	44	34	31	43
23-May	-28	-9	-13	-26
23-Jun	7	3	4	4
23-Jul	28	28	21	30
23-Aug	8	19	11	14

Source: J.P. Morgan, Optimal Blue

Figure 51: ...and their peak prepayment speeds were on top of each other

CPR ramps on G2 6.5s by issue month, 1m CPR



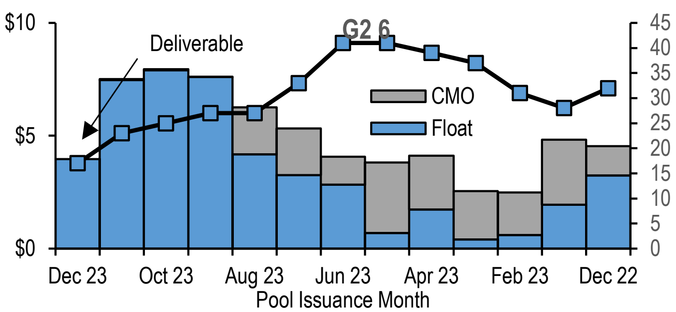
Source: J.P. Morgan, Ginnie Mae

G2 6s and 6.5s

After this close look at SATO, it make sense to start with how the float has evolved in production coupon 6s and 6.5s. Figure 52 and Figure 53show the available float and CMO lockup by issuance month. For both coupons, the deliverable is pegged near the newest production. In 6s, the next to ramp pools are still wider OAS, and considerably fewer of them are available, particularly from the first half of 2023. The valuation difference is magnified in 6.5s. Based on our analysis above, we would caution against taking the drop in OAS from the Nov. ‘23 to Dec. ‘23/Jan. ‘24 pools at face value as the SATO difference is likely overstated. Our model is overly sensitive to these SATO changes in volatile environments and we will be looking to adjust that in a forthcoming beta version. We will also continue to watch speeds on the late 2022 pools to see if the reaction to lower driving rates varies on SATO.

Figure 52: The deliverable in G2 6s is close to new issue...

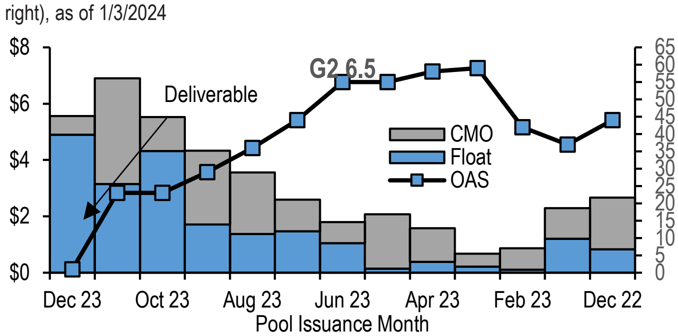
For G2 6s, the amount locked up by CMOs and free float ($bn, left) along with OAS (bp, right), as of 1/3/2024



Source: J.P. Morgan, Ginnie Mae

Figure 53: ...and the same is true in 6.5s, where a drop in SATO makes the December pool look tight in our model

For G2 6.5s, the amount locked up by CMOs and free float ($bn, left) along with OAS (bp, right), as of 1/3/2024



Source: J.P. Morgan, Ginnie Mae

G2 5s and 5.5s

This part of the coupon stack has gradually diminished in issuance and has seen generally more favorable valuations on newer issuance. As a result, we see the deliverable as a few months seasoned in both (see our TBA update from 12/22) and likely to stay there until lower rates leads to renewed issuance in 5.5s and then 5s.

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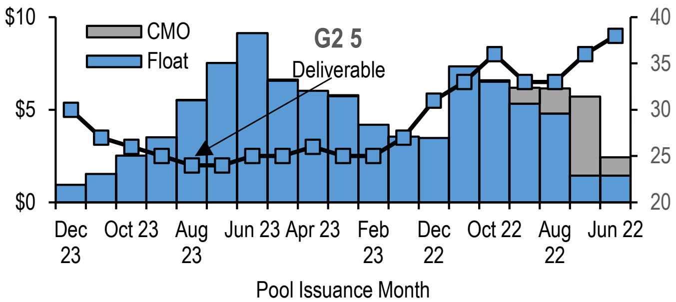
Figure 54: The deliverable has started to season in 5s as issuance tapers off and models better...

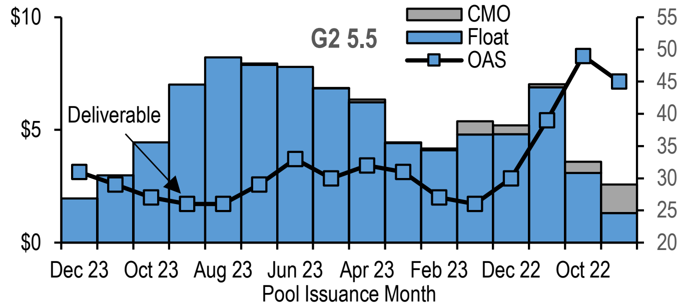
For G2 5s, the amount locked up by CMOs and free float ($bn, left) along with OAS (bp, right), as of 1/3/2024



Source: J.P. Morgan, Ginnie Mae

Figure 55: ... and 5.5s are on a similar path

For G2 5.5s, the amount locked up by CMOs and free float ($bn, left) along with OAS (bp, right), as of 1/3/2024



Source: J.P. Morgan, Ginnie Mae

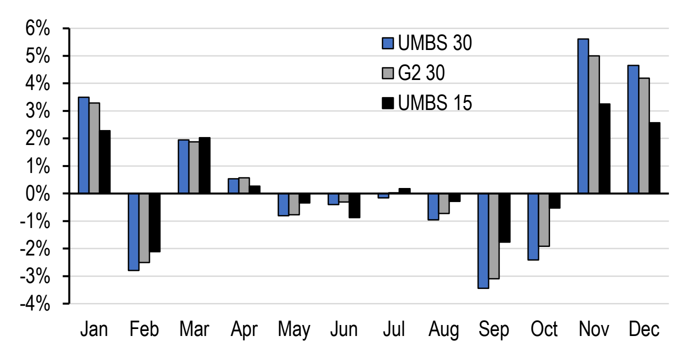
To wrap up, we are somewhat skeptical about the SATO impact on the newest G2 majors, particularly in 6.5s and 7s where the rally has elevated the impact of near-term prepayments on valuations. Normally new issue wouldn't matter so much to the Ginnie deliverable in premium coupons, but the path of rates over the past year and CMO activity means there is little free float in the pools hitting the peak of the seasoning ramp. We will continue to watch the upper coupon pools from 2022 as they face real refi incentive that could materialize in speeds by the February factor.

2023 returns year-in-review

2023 was a volatile year for mortgage performance, but ultimately a year of recovery due to the substantial end-of-year rate rally (Figure 56). After a tough 2022 which saw the mortgage index decline roughly 12%, another negative year seemed likely as the index was down 5% through October. However, a gargantuan 10% rally in MBS total return in November and December pushed 2023 into the green. At the aggregate level, Ginnie 30s returned the most on the year, followed by conventional 30s (Figure 57). Monthly returns generally favored conventional 30s during rallies due to their greater duration, though this also hurt them the most during selloffs.

Figure 56: Mortgages ultimately rebounded in 2023 due to a substantial rally in November and December ...

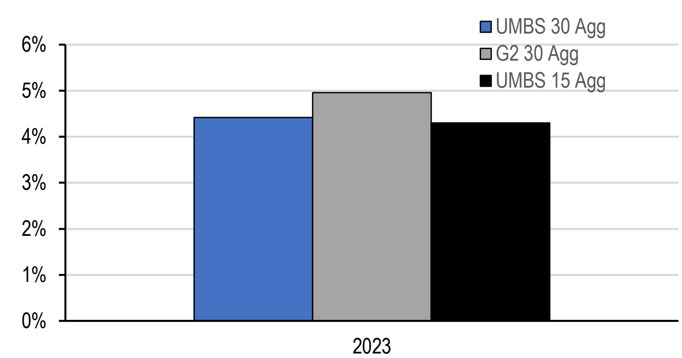
UMBS 30, G2 30, and UMBS 15 monthly total return, %



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

Figure 57: ... at the aggregate level, G2 30s returned the most on the year

UMBS 30, G2 30, and UMBS 15 total return in 2023, %



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

Yearly excess returns on the MBS index were positive for the first time since 2019, rebounding off a 2022 decline that almost matched 2008 as the worst on record (Figure 58). Like with

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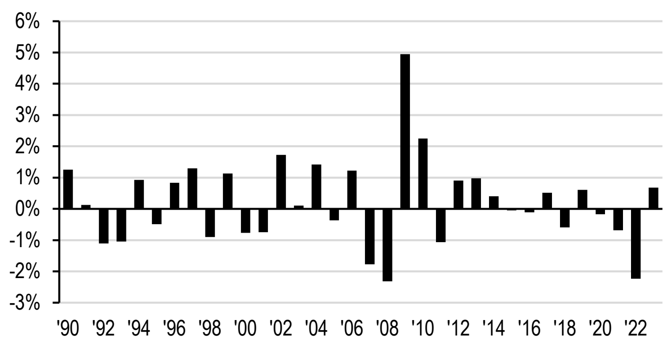
total returns, heavy mortgage outperformance in November and December due to the rate rally and a sharp decline in vol was the driver of the yearly gain, with mortgages in dire straits through October at a -1.2% excess return (Figure 59). Ginnies outperformed conventionals, and conventional 15s underperformed the both UM 30s and G2 30s (Figure 60).

Figure 58: Yearly excess returns on the MBS index were positive for the first time since 2019 …

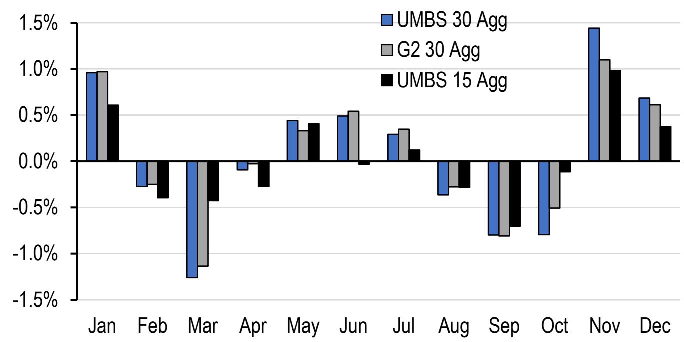
MBS index annual excess return, %



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

Figure 59: … thanks to the the year-end rally that lifted YTD mortgage performance out of deeply negative territory

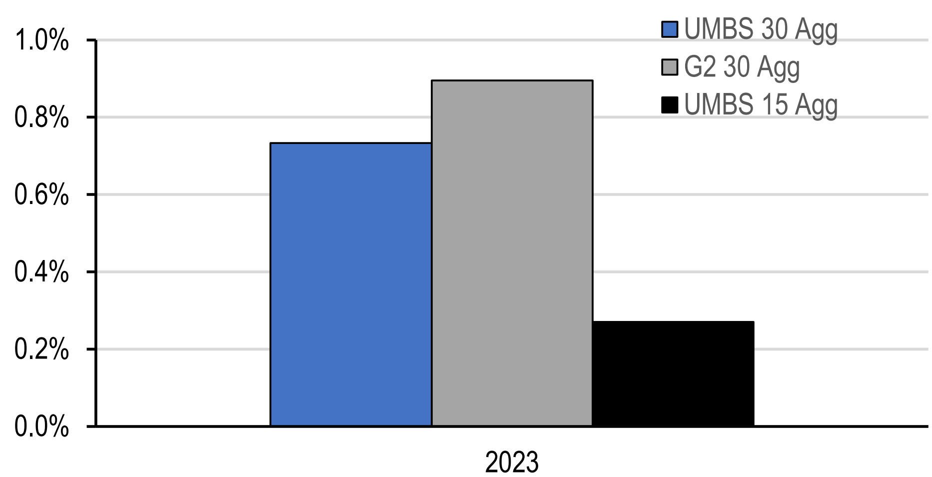
UMBS 30, G2 30, and UMBS 15 monthly excess returns, %



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

Figure 60: Ginnies heavily outperformed conventionals, while conventional 15s severely underperformed due to the long-end focus of the end-of-year rally

UMBS 30, G2 30, and UMBS 15 excess returns in 2023, %



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

The lower belly coupons tended to perform the best on the year, with UMBS 30 3.5s, UMBS 15 4s, and Ginnie 3s each performing the best for their respective products (Figure 61). We also provide our model's OASs on the pool cohorts; various model adjustments throughout the year make comparing spread levels and excess returns a tricky task. On a total return basis, the highest coupons performed best, reflecting their higher yields and partial distribution.

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Figure 61: The lower belly coupons like FN 3.5s and G2 3s performed the best on the year versus treasuries, though on a total return basis the highest coupons returned the most

Total and excess returns in 2023 across the product and coupon stack, along with start and end of year treasury OAS

		Returns		OAS		
		Total	Excess	2023 Start	2023 End	2023 Chg
UMBS 30	2.0	3.8%	0.63%	11	20	9
	2.5	4.4%	0.87%	20	24	4
	3.0	4.7%	0.96%	23	25	2
	3.5	5.1%	1.17%	26	23	-4
	4.0	5.2%	0.87%	21	24	3
	4.5	5.3%	0.70%	24	25	1
	5.0	5.3%	0.34%	23	24	0
	5.5	5.5%	0.33%	26	24	-2
	6.0	5.6%	0.32%	36	21	-15
	6.5	6.0%	0.54%	62	21	-41
UMBS 15	2.0	4.3%	0.27%	5	15	10
	2.5	4.8%	0.54%	0	6	6
	3.0	4.9%	0.54%	-8	6	14
	3.5	5.1%	0.45%	-5	4	9
	4.0	5.2%	0.63%	-2	0	2
	4.5	4.9%	0.20%	-7	1	8
	5.0	5.0%	0.46%	3	6	3
G2 30	2.0	4.4%	0.83%	6	9	4
	2.5	5.0%	1.13%	13	11	-3
	3.0	5.6%	1.57%	21	12	-10
	3.5	5.2%	1.05%	27	15	-11
	4.0	5.2%	0.63%	19	21	2
	4.5	5.2%	0.43%	21	21	0
	5.0	5.2%	0.11%	18	19	2
	5.5	5.5%	0.00%	26	24	-2
	6.0	6.0%	0.64%	39	26	-12
	6.5	5.3%	0.96%	66	32	-34

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

Conventional buyout timing has stabilized as forbearance use has waned

With much of the MBS universe trading at a discount, buyouts are an important source of principal return. While the timing of conventional buyouts was determined by forbearance for much of 2022, it has since shifted to being based on the timeline of mods. In this piece, we examine how conventional buyout timing has shifted and find that it has stabilized around the 5th-8thmonths of delinquency, in line with buyouts from successful trial mods.

In early 2022 there was a massive buyout wave as loans that went delinquent in early 2020 fell off forbearance. After rolling off forbearance at the limit of 18 months, loans that that could not successfully complete a payment deferral or a modification within a few months were bought out. The resulting buyouts were therefore for loans that had been delinquent for close to or equal to the 24-month buyout trigger (Figure 62). Naturally, the period of peak forbearance buyouts was also when loans had the highest average buyout month, the number of months in delinquency before a loan is bought out (Figure 63).

Since then, the average month of buyout has declined to the 7th month from a peak of the 18th month in March 2022, with buyouts being based on mods now rather than forbearance. Figure 64 shows how outstanding delinquent conventionals have shifted away from being heavily concentrated in months near the buyout trigger to being concentrated in early delinquency months, when the modification process occurs.

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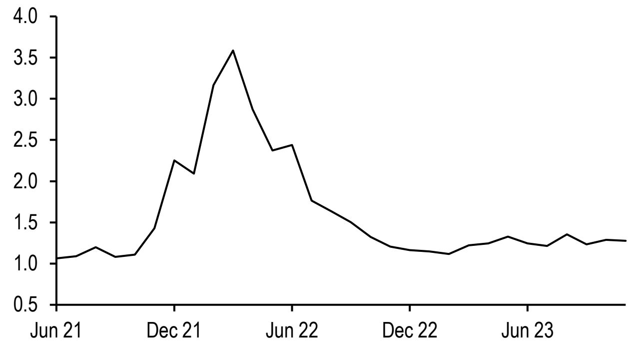
Figure 62: Conventional buyouts peaked in early 2022 as loans delinquent since 2020 rolled off forbearance…

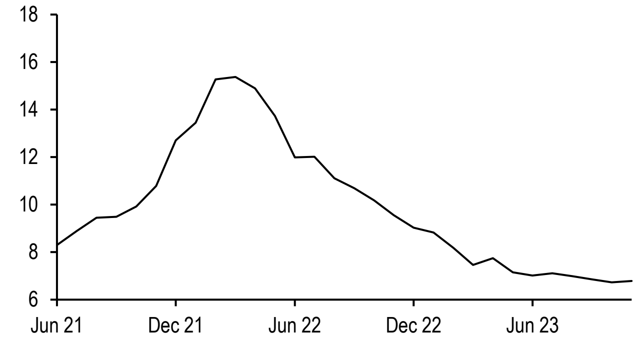
Buyouts on conventional 30yrs per month ($bn)



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

Figure 63: … since then, the average month of buyout has declined to the 7th month as buyouts have become dependent on mods

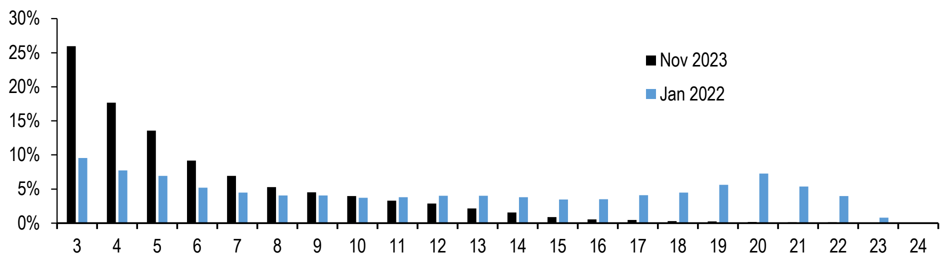
Average month of buyout among conventional 30yrs each month



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

Figure 64: Outstanding delinquent conventionals have shifted from being concentrated in months near the buyout limit to being concentrated in early delinquency months

Outstanding delinquent conventional 30s split by the number of months in delinquency (%)



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

The length of the GSE modification process is generally about 6 months from when a borrower first goes delinquent. The GSEs offer a trial mod when a borrower goes 90 days delinquent, and then it generally takes 3 months for the trial mod to complete (looking at buyout timing). If the borrower completes all payments in the trial period, the GSEs buy their loan out of the pool and the borrower's modified loan is finalized; the GSEs then own the mod on balance sheet, and can decide whether to hold or sell it.

Figure 65 shows a breakdown of which months of delinquency see the most prepayments, back to mid-2021. Of the total prepayments that occurred for 60d+ delinquent conventional 30s, the share of these that took place in each month of delinquency is shown. Over the past year, delinquent prepays have been concentrated in the 6th month of delinquency, likely corresponding to buyouts from successful trial mods. Paydowns in the 5th month and the months following the 6th month are also likely associated with successful trial mods. The data in this table includes both voluntary and involuntary paydowns, so paydowns in the first few months of delinquency are more likely to be voluntary and not from buyouts.

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Figure 65: Buyouts have centered around the 6th month of delinquency for the past year, when the trial period for mods is usually completed

% of delinquent conventional 30 prepayments that occur in each month of delinquency, since mid-2021

	% of delinquent FN 30 prepayments in each month of delinquency																					
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
6/1/2021	6%	5%	5%	7%	7%	6%	6%	5%	6%	8%	11%	13%	13%	2%	0%	0%	0%	0%	0%	0%	0%	0%
7/1/2021	6%	5%	5%	6%	5%	5%	5%	5%	5%	6%	8%	13%	11%	12%	2%	0%	0%	0%	0%	0%	0%	0%
8/1/2021	6%	5%	4%	5%	5%	5%	4%	4%	4%	5%	6%	10%	11%	11%	11%	2%	0%	0%	0%	0%	0%	0%
9/1/2021	6%	4%	5%	5%	5%	4%	5%	4%	4%	4%	6%	6%	10%	10%	9%	9%	2%	1%	0%	0%	0%	0%
10/1/2021	7%	4%	4%	4%	4%	5%	4%	4%	4%	4%	5%	5%	6%	8%	9%	9%	10%	2%	1%	0%	0%	0%
11/1/2021	6%	4%	4%	4%	3%	3%	3%	3%	3%	3%	4%	4%	4%	5%	7%	9%	11%	14%	2%	0%	0%	1%
12/1/2021	5%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	4%	6%	11%	16%	15%	2%	0%	1%
1/1/2022	4%	3%	3%	3%	3%	2%	3%	2%	2%	3%	2%	3%	3%	3%	3%	4%	9%	22%	16%	3%	1%	3%
2/1/2022	3%	2%	2%	3%	2%	3%	2%	2%	2%	2%	2%	3%	3%	2%	3%	3%	5%	13%	24%	10%	2%	7%
3/1/2022	3%	2%	2%	4%	3%	2%	2%	2%	2%	2%	2%	3%	3%	2%	2%	3%	4%	7%	12%	14%	5%	19%
4/1/2022	4%	3%	3%	5%	3%	3%	3%	2%	2%	2%	2%	3%	3%	3%	2%	3%	4%	6%	9%	9%	9%	17%
5/1/2022	4%	3%	4%	6%	4%	4%	3%	3%	2%	2%	2%	3%	3%	2%	3%	3%	3%	6%	7%	6%	7%	19%
6/1/2022	6%	5%	5%	8%	6%	4%	4%	3%	3%	4%	3%	3%	3%	2%	3%	4%	4%	5%	5%	4%	4%	12%
7/1/2022	5%	4%	4%	9%	6%	5%	4%	3%	3%	3%	3%	4%	3%	2%	3%	3%	4%	5%	6%	5%	5%	12%
8/1/2022	6%	4%	5%	9%	6%	6%	4%	4%	3%	3%	2%	3%	4%	3%	3%	3%	4%	5%	5%	4%	3%	11%
9/1/2022	7%	5%	6%	11%	7%	5%	5%	4%	3%	3%	3%	3%	3%	3%	2%	3%	4%	4%	5%	4%	3%	9%
10/1/2022	7%	6%	6%	12%	7%	5%	5%	4%	3%	3%	3%	3%	3%	2%	2%	2%	3%	4%	4%	3%	3%	8%
11/1/2022	7%	6%	7%	15%	7%	6%	5%	3%	3%	3%	3%	3%	3%	2%	2%	2%	2%	4%	4%	3%	2%	8%
12/1/2022	8%	6%	8%	16%	9%	6%	5%	4%	3%	3%	2%	3%	3%	2%	2%	2%	2%	2%	3%	2%	2%	7%
1/1/2023	7%	6%	8%	16%	9%	7%	6%	4%	4%	3%	3%	3%	3%	2%	1%	1%	1%	2%	2%	2%	2%	6%
2/1/2023	8%	7%	10%	17%	10%	8%	5%	4%	4%	3%	3%	3%	2%	2%	2%	1%	1%	1%	1%	1%	1%	5%
3/1/2023	9%	7%	9%	18%	11%	8%	6%	4%	3%	3%	3%	3%	3%	2%	2%	1%	1%	1%	1%	1%	1%	3%
4/1/2023	8%	7%	10%	19%	12%	7%	7%	4%	3%	3%	2%	3%	3%	2%	2%	1%	1%	1%	1%	1%	1%	3%
5/1/2023	8%	7%	10%	20%	11%	8%	6%	4%	3%	3%	2%	3%	3%	2%	1%	1%	1%	1%	1%	1%	1%	2%
6/1/2023	9%	7%	10%	21%	13%	9%	6%	4%	3%	2%	2%	2%	3%	2%	1%	1%	1%	1%	1%	1%	1%	2%
7/1/2023	8%	7%	10%	21%	12%	9%	6%	5%	4%	2%	2%	2%	2%	2%	1%	1%	1%	1%	1%	1%	1%	1%
8/1/2023	9%	7%	10%	19%	12%	9%	7%	5%	4%	3%	3%	2%	2%	2%	1%	1%	1%	0%	1%	0%	0%	1%
9/1/2023	8%	8%	11%	20%	13%	8%	6%	5%	4%	3%	3%	3%	2%	2%	1%	0%	1%	0%	0%	0%	0%	1%
10/1/2023	8%	8%	10%	22%	12%	8%	7%	5%	4%	3%	3%	3%	2%	2%	1%	1%	1%	0%	0%	0%	0%	1%
11/1/2023	9%	8%	11%	22%	13%	9%	5%	4%	3%	3%	2%	3%	3%	1%	1%	1%	1%	0%	0%	0%	0%	1%

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

Fannie and Freddie's agency data sets don't break out loan-level prepayments by voluntary and involuntary paydowns. Fannie does provide a snapshot of voluntary versus involuntary paydowns as a share of balance through their loan-level Data Dynamics platform. We suspect that the deeper into delinquency a loan goes before paying down, the more likely it was a paid down involuntarily, and that seriously delinquent (120d+) paydowns are primarily involuntary. In Figure 66, we show the share of each previous delinquency status that paid down in November 2023. Paydown share hovers around 10% for 120d+ delinquent loans, and spikes at the 24-month trigger. This matches up with Fannie's latest transition matrix, which also shows the 10% paydown share among 120d+ delinquent loans (Figure 67). As we suspected, the Fannie transition matrix indicates that 120d+ delinquent paydowns are more likely due to buyouts than from borrowers voluntarily selling their house and paying off their loan.

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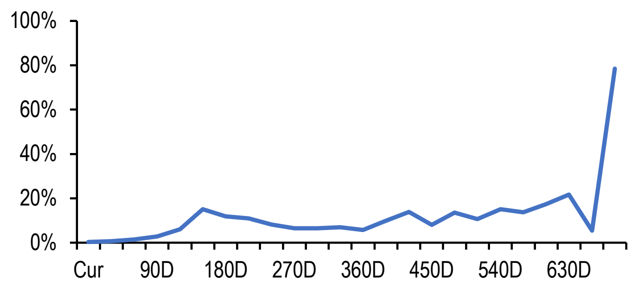
Figure 66: Paydown share hovers around 10% among 120d+ delinquent loans …

Paydown as a share of previous delinquency status in November 2023, %



Source: J.P. Morgan, Fannie Mae

Figure 67: … and most of these paydowns are involuntary

October 2023 delinquency status as a share of balance, %

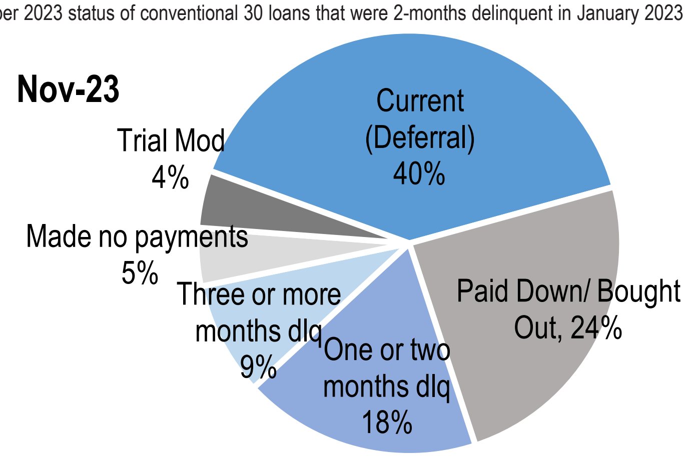
	Current	30-59d DLQ	60-89d DLQ	90-119d DLQ	120d+ DLQ	Payoff	Involul. Loan Removal
Current	99.08%	0.47%	0.00%	0.00%	0.00%	0.45%	0.00%
30-59d DLQ	44.30%	39.47%	15.09%	0.12%	0.02%	0.97%	0.03%
60-89d DLQ	17.20%	13.82%	31.75%	35.49%	0.22%	1.25%	0.27%
90-119d DLQ	12.91%	3.67%	7.14%	18.16%	55.21%	1.44%	1.47%
120d+ DLQ	8.08%	0.53%	0.47%	0.93%	79.24%	**1.45%**	**9.30%**
Grand Total	98.24%	0.81%	0.19%	0.08%	0.21%	0.45%	0.02%

Source: J.P. Morgan, Fannie Mae

An important consideration is whether a loan that goes delinquent ends up being bought out or paying down in delinquency. We show a breakdown of the current status of loans that were 2-months delinquent in January 2023 in Figure 68. 40% are back to current, and so there is no indication these borrowers will ever need a buyout. About 20% of the borrowers are still one- or two-months delinquent. These borrowers could have resumed making payments but never fully cured back to current, or they could have gone current but slipped back into delinquency. As a result, these borrowers may or may not end up being bought out. Of the remaining 40%, 24% have paid down or been bought out and the rest are more than 2 months delinquent or in trial mods, suggesting that they will likely be bought out. Altogether, it seems that about half of borrowers that go two-months delinquent will eventually end up being bought out or paying down in delinquency, but only 25% will do so relatively quickly after going delinquent (within 10 months in this example).

Figure 68: About half of the loans that were 2-months delinquent in January will end up being bought out or paying down in delinquency, but only 22% have done so already

November 2023 status of conventional 30 loans that were 2-months delinquent in January 2023



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

VASP: A flat 2.5% mod rate?

The FHA and VA have still not released finalized versions of their new modification programs (the Payment Supplement and VASP, respectively). FHA at least has a new draft version posted to its drafting table page; the most recent iteration appears to solve many of the paperwork hurdles that servicers had complained about with the initial copy. VA has not yet

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released anything more than cursory details around their modification program.

However, back in December, the Housing Policy Council published a letter to the VA that lays out the parameters of the program. In particular, it highlights that "*The VA team has verbally indicated that VASP will require mortgage servicers to modify Veterans' loans to a specific and uniform interest rate target of 2.5%.*" HPC goes on to note that a flat modification rate would potentially create wildly varying degrees of payment reduction. Some borrowers might get huge rate reductions (a policy choice that might incentivize defaults, on the margin), while others might get reductions that are too small to meaningfully dampen re-defaults. Targeting the amount of payment relief, instead of the modification mortgage rate, would be more consistent with FHA's payment supplement and other successful modification programs.

We'll have to see if the VA alters the terms of its modification program in response to comments like these. If they keep the flat 2.5% mod rate, that might create a significant different in buyout timing between delinquent VA borrowers in G2 2s and 2.5s. The 2s probably wouldn't see any payment reduction from a mod (unless there's a term extension component as well), and thus might stay in the pool until foreclosure. 2.5s and up might be bought out as part of the VASP mods.

Daily Prepays tracking up 6-8%: Fannie and Freddie through December 29th

With 18 days' worth of December paydowns, Fannie Mae data implies that 30yrs will be up 6% according to our Day Pattern method (Figure 69); Freddie Mac data implies that 30yrs will be up 8% (Figure 70). These projections are faster than our original projection of -3%. Fannie data implies that 15yrs will be up 10% and Freddie data implies that 15yrs will be up 13%; these projections are also faster than our original projection of -3%.

Figure 69: Coupon m/m speed changes through December 29th

M/m speed changes implied by the Fannie daily prepayment Fannie 30yr and 15yr report, across coupon

	FN 30yrs		FN 15yrs	
	Ratio Method	Day Pattern Method	Ratio Method	Day Pattern Method
1.5%	4.4%	5.4%	5.4%	6.7%
2.0%	-3.0%	1.3%	5.1%	9.8%
2.5%	-1.7%	3.6%	6.5%	12.8%
3.0%	-2.0%	4.0%	7.1%	13.8%
3.5%	-1.6%	3.4%	-2.4%	6.4%
4.0%	3.4%	9.3%	-11.4%	-5.2%
4.5%	4.6%	12.4%	13.1%	15.2%
5.0%	4.5%	12.3%	-16.1%	-5.4%
5.5%	-1.8%	5.2%	8.0%	10.0%
6.0%	-0.9%	4.7%	5.9%	21.9%
6.5%	26.2%	36.0%		
All Coupon	**0.3%**	**6.0%**	**5.0%**	**10.4%**

Source: J.P. Morgan, Fannie Mae
Note: Balances filtered by $1bn

Figure 70: Coupon m/m speed changes through December 29th

M/m speed changes implied by the Freddie daily prepayment Freddie 30yr and 15yr report, across coupon

	FR 30yrs		FR 15yrs	
	Ratio Method	Day Pattern Method	Ratio Method	Day Pattern Method
1.5%	7.9%	8.9%	1.6%	4.3%
2.0%	2.1%	4.3%	6.0%	7.7%
2.5%	4.6%	7.8%	13.8%	17.5%
3.0%	-2.2%	1.9%	11.0%	15.0%
3.5%	8.8%	12.4%	45.8%	42.1%
4.0%	3.9%	8.1%	44.8%	42.2%
4.5%	9.2%	14.7%	6.0%	29.6%
5.0%	-4.6%	1.8%	3.9%	8.9%
5.5%	4.1%	8.8%	26.5%	38.0%
6.0%	4.9%	11.5%	137.7%	187.8%
6.5%	0.5%	5.3%		
All Coupon	**3.9%**	**7.6%**	**10.2%**	**13.3%**

Source: J.P. Morgan, Freddie Mac
Note: Balances filtered by $1bn

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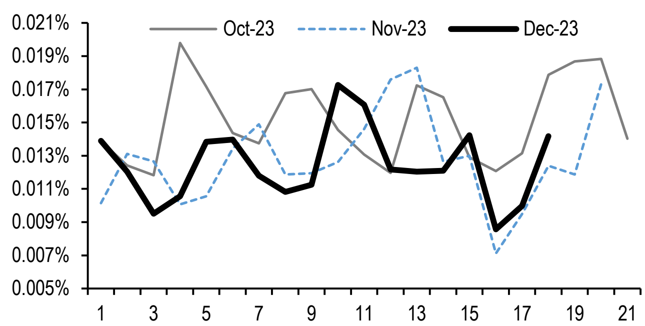
Figure 71: 30yr daily payoff comparison

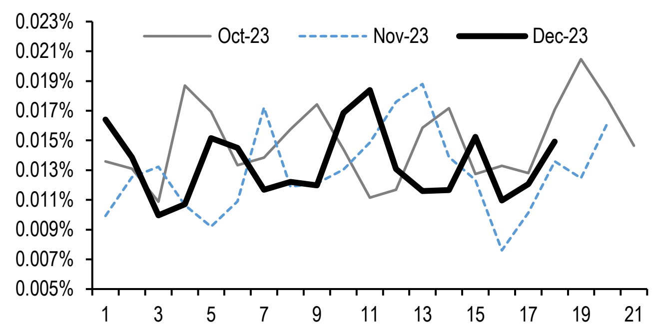
Daily Freddie 30yr speeds vs. business day, prepaid



Source: J.P. Morgan, Freddie Mac

Figure 72: 15yr daily payoff comparison

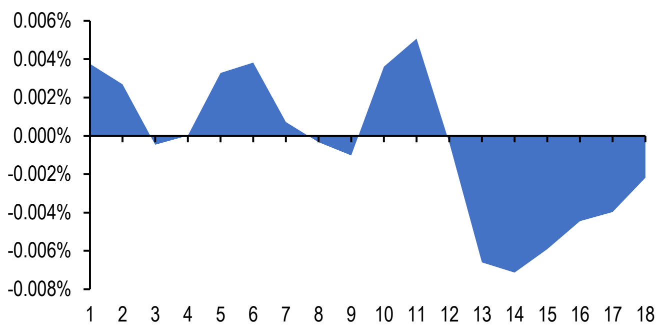
Daily Freddie 15yr speeds vs. business day, prepaid



Source: J.P. Morgan, Freddie Mac

Figure 73: 30yr cumulative payoff comparison

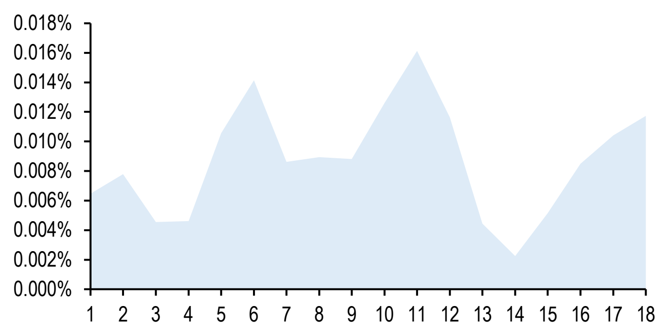
December cumulative Freddie 30yr speeds differences vs. November by business day, prepaid % (December- November)



Source: J.P. Morgan, Freddie Mac

Figure 74: 15yr cumulative payoff comparison

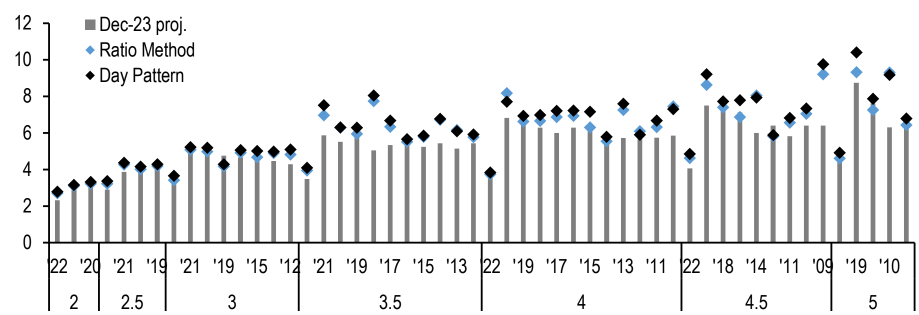
December cumulative Freddie 15yr speeds differences vs. November by business day, prepaid % (December- November)



Source: J.P. Morgan, Freddie Mac

Figure 75: Conventional 30yr Freddie implied speeds versus a priori projections through December 29th

Freddie 30yr 1 mo. December CPR projections versus Freddie implied 1 mo. December CPRs



Source: J.P. Morgan, Freddie Mac

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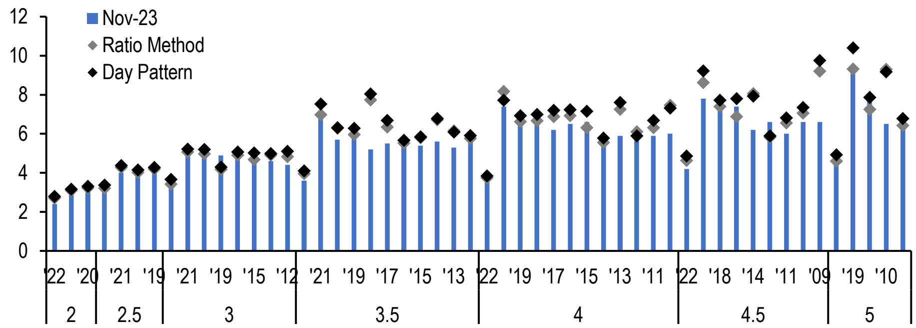
Figure 76: Conventional 30yr Freddie implied speeds versus July speeds through December 29th

Freddie 30yr 1 mo. November CPRs versus Freddie implied 1 mo. December CPRs



Source: J.P. Morgan, Freddie Mac

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Figure 77: Fannie coupon/vintage m/m speed changes through December 29th

M/m speed changes implied by the Fannie daily prepayment Fannie 30yr and 15yr report, across coupon and vintage

		FN 30yrs		FN 15yrs	
		Ratio Method	Day Pattern Method	Ratio Method	Day Pattern Method
1.50%	All	4.4%	5.4%	5.4%	6.7%
2.00%	2022	-9.7%	-2.5%	-16.1%	-15.0%
	2021	-2.9%	1.2%	8.2%	12.8%
	2020	-2.4%	1.8%	4.2%	9.6%
	All	-3.0%	1.3%	5.1%	9.8%
2.50%	2022	0.7%	7.9%	-4.8%	4.5%
	2021	-1.3%	3.9%	1.8%	7.5%
	2020	-1.3%	3.3%	1.7%	10.9%
	2019	-18.2%	-12.2%	0.9%	4.3%
	All	-1.7%	3.6%	6.5%	12.8%
3.00%	2022	3.1%	9.7%	-13.0%	-5.5%
	2021	-9.2%	-2.0%		
	2020	-4.6%	2.3%	15.2%	25.2%
	2019	9.6%	13.8%	29.9%	31.2%
	2016	-9.8%	-5.5%	-4.4%	-1.4%
	2015	-17.8%	-10.0%	-12.3%	-6.3%
	2013	-4.3%	-1.4%	5.1%	11.0%
	2012	13.6%	21.0%	12.2%	18.8%
	All	-2.0%	4.0%	7.1%	13.8%
3.50%	2022	3.5%	10.9%	-18.6%	-7.7%
	2021	-8.9%	-6.2%		
	2020	6.6%	12.4%		
	2019	-1.2%	2.2%	4.4%	14.1%
	2018	6.1%	11.5%	-10.2%	-1.7%
	2017	-2.0%	4.1%	26.6%	35.8%
	2016	-4.7%	0.0%		
	2015	-4.5%	1.3%		
	2014	11.6%	7.6%	-9.0%	-2.8%
	2013	-4.3%	-0.4%		
	2012	-9.5%	-4.0%		
	All	-1.6%	3.4%	-2.4%	6.4%
4.00%	2022	7.4%	14.2%	-19.4%	-9.0%
	2020	15.0%	25.2%		
	2019	0.2%	7.0%		
	2018	3.6%	9.2%	-6.2%	-2.4%
	2017	1.5%	7.9%		
	2016	9.5%	16.4%		
	2015	-18.5%	-17.4%		
	2014	13.6%	21.8%		
	2013	-0.8%	-1.0%		
	2012	9.0%	17.9%		
	2011	-6.4%	0.3%		
	2010	-5.1%	4.0%		
	All	3.4%	9.3%	-11.4%	-5.2%
4.50%	2022	1.5%	8.3%	-19.9%	-12.4%
	2019	29.7%	40.6%		
	2018	-6.6%	1.4%		
	2017	-0.4%	7.5%		
	2014	10.4%	17.4%		
	2013	33.3%	42.3%		
	2011	36.2%	41.2%		
	2010	5.6%	8.0%		
	2009	1.9%	9.7%		
	All	4.6%	12.4%	13.1%	15.2%
5.00%	2022	2.6%	11.2%	-17.3%	-10.6%
	2019	0.2%	7.1%		
	2018	19.9%	32.2%		
	2010	2.8%	12.4%		
	2009	26.9%	28.3%		
	2008				
	2005	-6.1%	-3.5%		
	All	4.5%	12.3%	-16.1%	-5.4%
5.50%	2022	-3.2%	1.8%		
	2008	-17.6%	-8.1%		
	2007	-7.9%	4.9%		
	2006				
	2005	-2.1%	7.4%		
	All	-1.8%	5.2%	8.0%	10.0%
6.00%	2022	-36.7%	-32.3%		
	2008				
	2007	10.7%	16.7%		
	2006	21.5%	24.4%		
	All	-0.9%	4.7%	5.9%	21.9%
6.50%	All	26.2%	36.0%		
All Coupon	**All**	**0.3%**	**6.0%**	**5.0%**	**10.4%**

Source: J.P. Morgan, Fannie Mae
Note: Balances filtered by $1bn

Figure 78: Freddie coupon/vintage m/m speed changes through December 29th

M/m speed changes implied by the Freddie daily prepayment Freddie 30yr and 15yr report, across coupon and vintage

		FR 30yrs		FR 15yrs	
		Ratio Method	Day Pattern Method	Ratio Method	Day Pattern Method
1.50%	All	7.9%	8.9%	1.6%	4.3%
2.00%	2022	12.7%	16.4%	-2.7%	4.4%
	2021	0.2%	1.9%	7.3%	8.2%
	2020	4.0%	6.9%	7.0%	8.3%
	All	2.1%	4.3%	6.0%	7.7%
2.50%	2022	7.2%	12.2%	-7.6%	-6.7%
	2021	6.8%	9.4%	15.8%	25.3%
	2020	0.3%	3.9%	6.8%	9.8%
	2019	-2.4%	-0.4%	-0.6%	0.2%
	All	4.6%	7.8%	13.8%	17.5%
3.00%	2022	-2.3%	4.6%	11.2%	13.0%
	2021	-0.5%	2.4%		
	2020	-2.4%	1.8%	15.0%	17.4%
	2019	-14.8%	-12.5%	-18.3%	-15.4%
	2016	2.4%	5.6%	21.3%	23.1%
	2015	-10.0%	-3.4%	27.1%	27.9%
	2013	6.7%	8.3%	41.4%	43.0%
	2012	9.7%	15.8%	15.9%	27.6%
	All	-2.2%	1.9%	11.0%	15.0%
3.50%	2022	9.7%	13.8%	100.4%	84.2%
	2021	2.5%	10.6%		
	2020	10.3%	10.7%		
	2019	-3.9%	1.4%	40.1%	43.3%
	2018	48.9%	54.7%	15.3%	12.9%
	2017	15.4%	21.5%	57.9%	54.8%
	2016	-1.4%	1.2%		
	2015	7.3%	8.4%		
	2014	20.1%	21.1%		
	2013	16.2%	15.0%		
	2012	3.0%	5.6%		
	All	8.8%	12.4%	45.8%	42.1%
4.00%	2022	1.2%	3.9%	41.1%	37.4%
	2020	10.5%	4.3%		
	2019	-1.1%	3.5%		
	2018	2.6%	7.5%		
	2017	10.9%	16.3%		
	2016	6.7%	11.2%		
	2015	-4.4%	8.5%		
	2014	-4.3%	-0.3%		
	2013	23.0%	28.9%		
	2012	3.4%	0.0%		
	2011	7.1%	13.2%		
	2010	24.3%	21.8%		
	All	3.9%	8.1%	44.8%	42.2%
4.50%	2022	10.3%	15.7%	13.5%	34.0%
	2019	10.6%	18.2%		
	2018	-2.6%	1.6%		
	2017	-7.1%	5.4%		
	2014	29.9%	28.0%		
	2013				
	2011	9.3%	13.7%		
	2010	6.9%	11.3%		
	2009	39.6%	47.8%		
	All	9.2%	14.7%	6.0%	29.6%
5.00%	2022	-9.7%	-3.5%		
	2019	2.4%	14.3%		
	2018	-8.2%	-0.4%		
	2010	43.2%	41.2%		
	2009	-8.1%	-3.1%		
	2008				
	2005	30.4%	45.9%		
	All	-4.6%	1.8%	3.9%	8.9%
5.50%	2022	-1.5%	0.3%		
	2008	-22.8%	-13.5%		
	2007				
	2006				
	2005	-32.1%	-28.8%		
	All	4.1%	8.8%	26.5%	38.0%
6.00%	2022	0.8%	1.5%		
	2008				
	2007	-10.1%	-6.3%		
	2006	-1.1%	6.1%		
	All	4.9%	11.5%	137.7%	187.8%
6.50%	All	0.5%	5.3%		
All Coupon	**All**	**3.9%**	**7.6%**	**10.2%**	**13.3%**

Source: J.P. Morgan, Freddie Mac
Note: Balances filtered by $1bn

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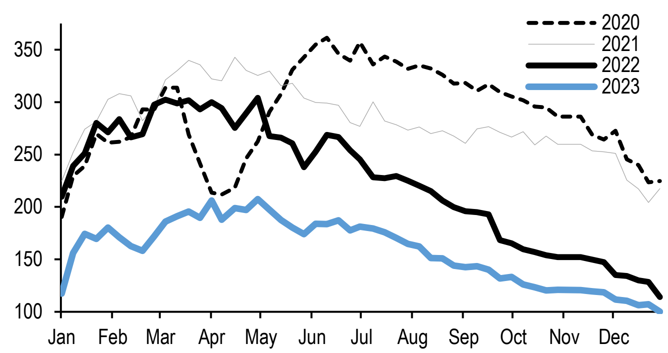
Week in Review

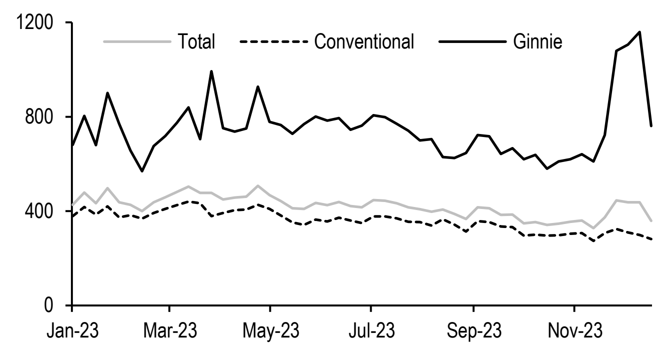
- **MBA Weekly Survey:** For the week ending December 29, the purchase application index fell 7.6% to 140.7 and the refinance index fell 18.1% to 358.2 (seasonally adjusted) (Figure 79 & Figure 80).
- **Freddie Enhanced Primary Survey:** For the week prior to January 4, 2024, 30-year conventional conforming fixed-rate mortgages averaged 6.62%, up 1bp from the previous week (Figure 81).
- **Primary dealer specified pool positions** rose to $382.9bn (+$7.2bn w/w) as-of close trading December 20. Including TBA positions of -$334.0bn, dealers were long $48.9bn (+$8.2bn w/w) pass-throughs. Other agency MBS holdings rose $0.2bn to $24.6bn.
- **Fixed-rate agency gross and net issuances were $78.0bn and $21.1bn, respectively, in November.** January gross supply currently stands at $14.5bn (Figure 82).
- **Our OAS optimized portfolio favors FN 1.5s & 6s-6.5s and FNCI 1.5s-2.5s, while reducing exposure to FN 2s-3s and G2 2.5s-5.5s.** Our optimized portfolio achieves an OAS of 38 with an OAD of 5.3 versus the index's OAS of 36 with OAD of 5.47. Cohort weights are limited to 40% redistributions in our optimized portfolio, while duration cannot change by more than 1 year and convexity can be no worse than the index. (Figure 83& Figure 84).

Figure 79: MBA Purchase Index, calendar year overlay with daycount adjustments



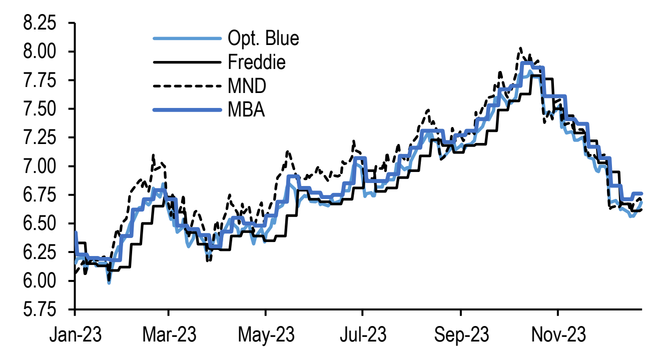
Source: J.P. Morgan, MBA

Figure 80: MBA Refi Indices, seasonally adjusted



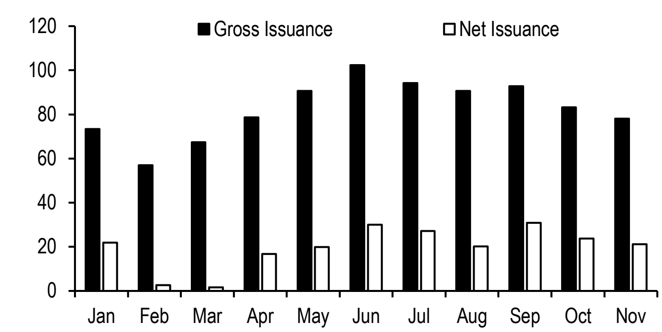
Source: J.P. Morgan, MBA

Figure 81: Primary mortgage rates, %



Source: J.P. Morgan, Optimal Blue, Freddie Mac, Mortgage News Daily, MBA

Figure 82: Gross and net fixed-rate MBS monthly issuance, $bn



Source: J.P. Morgan

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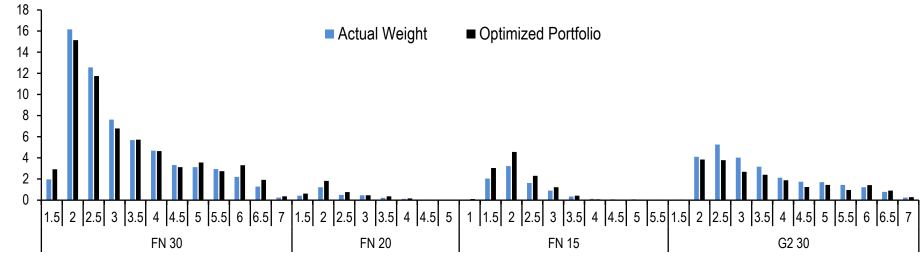
Figure 83: Weights of the actual index and an OAS optimized portfolio

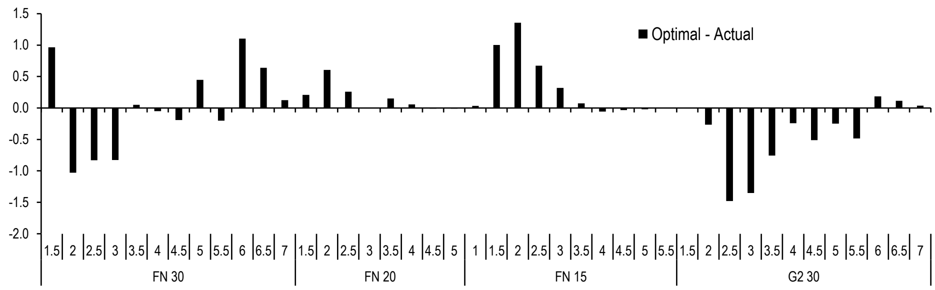
Weight distribution by coupon and product as for an OAS optimized portfolio as of 1/3/2024. Weights of each cohort are allowed to be shifted by at most 40%.



Source: J.P. Morgan

Figure 84: Weight redistribution for the OAS optimized portfolio

Difference between optimal and actual weights by coupon and product for an OAS optimized portfolio as of 10/18/2023. Weights of each cohort are allowed to be shifted by at most 40%.



Source: J.P. Morgan

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RMBS Credit Commentary

Non-QM strives to be more EU risk retention compliant

- **A strong rally into 2024 pushed spreads tighter across securitized products, with CRT firmly at the richer end along with corporates. Regardless, CRT B2s at a 10% yield are attractive**
- **Clearly the market is signaling an expectation of lower mortgage rates and little-to-no risk in forward home price declines much like the corporate market is expecting limited defaults**
- **Limited supply may only compound the bullish undertone**
- **The EU Securitization Regulation (EUSR) outlines European risk retention rules, which EU-domiciled institutional investors have to comply with**
- **The European Commission released a report in Oct '22 reiterating that EU investors must not invest in non-Article 7 compliant products, resulting in more RMBS issuers structuring compliant transactions**
- **Non-QM, in particular, has seen more issuance of EU Securitization Regulation-compliant deals in 2023**
- **Shifting to the housing market, we dig into the rent versus buy dynamic across MSAs**
- **Different MSAs have vastly different single-family versus multi-family housing stocks and corresponding available inventory**
- **If rental properties are cheaper than buying, but rental inventory is limited, we could see some support for home prices**

Figure 85: RMBS credit issuance to date...

Issuance $mn	2021 FY	2022 FY	2023 FY
Jumbo 2.0	52,216	18,707	10,232
Agency Investor	26,659	13,397	976
CRT	21,896	23,259	9,465
Rental	19,755	14,294	3,424
RPL	32,779	15,160	10,852
NPL	20,560	4,689	826
Non-QM	30,859	40,962	31,099
Seasoned CRT	2,792	1,134	359
Other	37,788	16,030	10,503
Total	245,304	147,633	77,735

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

Figure 86: ...and spreads

Spreads (bp)	Current	Δ 1 wk	Δ 1 mth	Δ 1 yr
Fannie CC 30YR	25	5	(11)	(0)
Jumbo PT	68	9	(3)	(28)
CRT M1	126	0	(17)	(101)
CRT M2(M1B)	179	(5)	(53)	(165)
CRT B1	323	(9)	(24)	(283)
CRT B2	600	0	(4)	(546)
Non-QM A1	153	-	(22)	(66)
Non-QM A2	195	-	(25)	(80)
Non-QM A3	220	-	(25)	(80)
Non-QM M1	310	-	(65)	(275)
Non-QM B1	485	-	(75)	(185)
SFR A	145	(5)	(15)	(70)
SFR B	190	-	(10)	(80)
SFR C	220	-	(10)	(100)
SFR D	260	-	(15)	(140)
HY Domestic	397	20	(13)	(95)
HG Domestic	108	3	(2)	(31)

Source: J.P. Morgan
Note: Includes our on-the-run indices. Jumbo is TOAS, non-QM and SFR are spread to treasuries. CRT is SOFR DM@10CPR. HG/HY are spread to treasuries.

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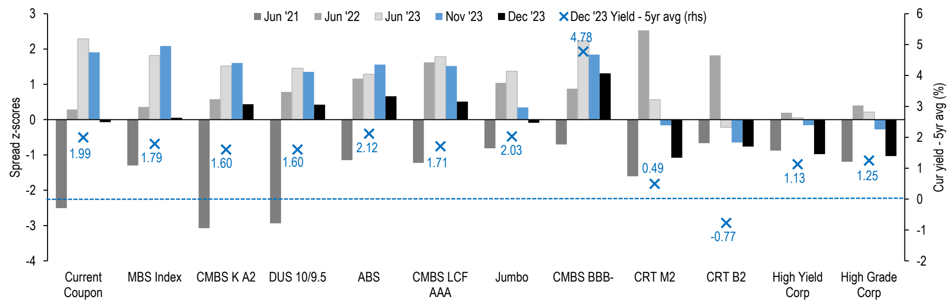
Market Commentary: Spreads tight, but yields still attractive and supply is limited

A strong rally into 2024 pushed spreads tighter across securitized products. All of securitized products shifted closer to fair (or got richer) in December, according to our new issue indices, to their 5yr average spread (Figure 87). CRT sits firmly in the richer end of the spectrum, along with corporates. Clearly the market is signaling an expectation of lower mortgage rates and little-to-no risk in forward home price declines, much like the corporate market is expecting limited defaults. We thought the market would hold at levels observed at the end of November/early December, but the bullish undertone as the 10yr Treasury rallied 35bps in a matter of weeks spread across the market. Interestingly, HG and HY corps shifted even tighter as well. Simply put, investors are likely to accept less spread in a higher yield environment. Spreads have tightened fast and furious, but yields still remain 150-200bp higher than the 5yr average for a significant segment of products. Yield levels are still very attractive and this may continue to pull investors into the space (Figure 88). Limited supply (net issuance for CRT was negative in '23 and is expected to be the same in '24) may only compound the bullish undertone. Expect spreads to be supported, but rangebound in the current environment. CRT B2s are attractive at a 10% yield.

Figure 87: All of securitized products had a very strong month in December. While spreads have retraced considerably, yields are 150-200bp higher than the 5yr average for a significant segment of products...

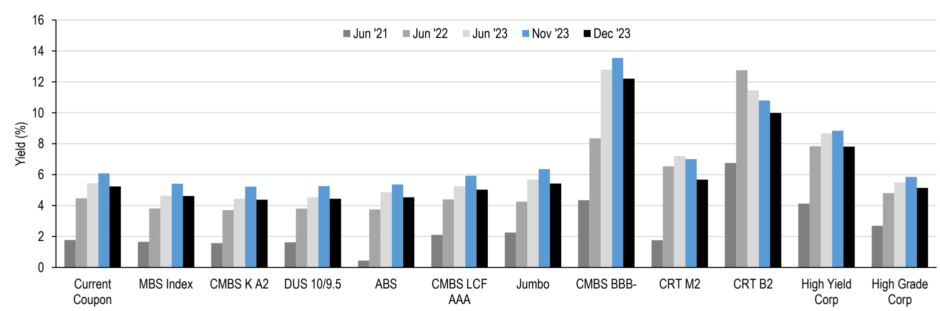
Relative cheapness (z-scores using std. dev from 5yr average, lhs), yield difference (current - 5yr average, rhs)



Source: J.P. Morgan
Note: As of 1/3/24, CRT data from 1/21 to 1/24.

Figure 88: … and while CRT B2s show lower yields relative to their average, absolute levels remain very high at 10%

Yield (%) at various points since Jun '21



Source: J.P. Morgan

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Non-QM issuers start to comply with the EU Securitization Regulation

The EU Securitization Regulation (EUSR) outlines European risk retention rules. The EUSR does not directly apply to U.S. issuers, but the regulation restricts EU-domiciled institutional investors from investing in any securitization if it does not comply with the EUSR. Regulation requires investors to verify that deals they participate in comply with the EUSR. We saw a handful of RMBS issuers structure securitizations in line with the EUSR in 2023. In this piece, we give a brief overview of the European securitization regulation and which RMBS deals comply with it.

Two major requirements of the EUSR are outlined in Article 6 and 7. Article 6 requires that the originator or sponsor of a securitization retains a material net economic interest of at least 5% in the securitization on an ongoing basis. This is a post-GFC regulation that ensures issuers retain "skin in the game," and was implemented by many other jurisdictions. Section 15G of the U.S. Credit Risk Retention Regulation similarly requires the issuer to retain at least 5% interest in the securitization unless there is an exemption. Qualified Residential Mortgages (QRM) are exempt from risk retention requirements. Many U.S. securitizations, even if the issuer retains at least 5% risk, still do not comply with Article 6 because U.S. rules allow the transfer and hedging restrictions on the retained exposure to expire after 5 years, while the EUSR requires the originator or sponsor to hold 5% interest until the deal is paid off.

Article 7 of the EUSR outlines transparency requirements. It requires the issuer to disclose information on underlying assets in the form of required templates. Compliance with Article 7 has been the major hurdle for U.S. issuers. UK Securitization Regulation (UKSR) is currently a bit more lenient when it comes with data transparency. UKSR requires reporting to be "*substantially the same as*" is required under Article 7. The exact meaning of this is not clear, which has left room for flexibility for UK investors. Note that UK is currently in the process of repealing the onshored EU legislation and replacing with its own version.

On October 10th, 2022, the European Commission released a report in which it acknowledged that there have been different interpretations of Article 7 reporting requirements and that EU investors have been participating in non-EU securitizations that do not comply with Article 7. The report reiterated that EU investors must not invest in products that are not Article 7 compliant.

As a result of the European Commission report, some RMBS issuers started to structure transactions in compliance with the EUSR in 2023. We reviewed the latest transaction from all issuers in 2023. Jumbo 2.0 and agency investor deals do not comply with the EUSR as loans securitized are QRM and under the U.S. regulation, the issuer does not retain any risk. GSE CRT is EUSR compliant, while no MI CRT deals are. RPL, NPL and SFR deals are also not compliant. Non-QM has seen more issuance of EUSR-compliant deals (Figure 89). VERUS, OBX and AOMT were the largest 3 non-QM issuers in 2023 that sold EUSR-compliant deals.

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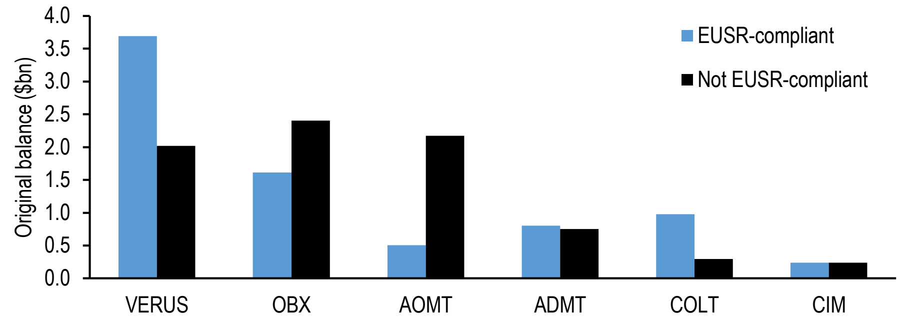
Figure 89: Non-QM saw issuance of more EUSR-compliant deals in 2023

Original balance ($bn) of issuers which sold EUSR-compliant deals in 2023



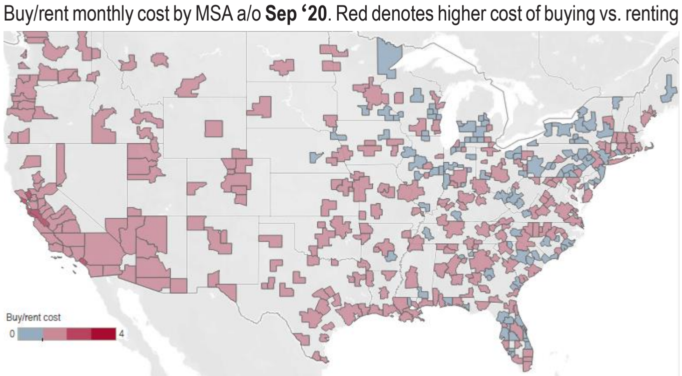
Source: J.P. Morgan, Prospectuses

Renting is cheaper than buying but where can you rent?

All else equal, we would expect home prices in regions where renting is more affordable than buying to see a decline in home prices over time. Geographically, buying has become increasingly unaffordable versus renting across MSAs (Figure 90 and Figure 91). For context, buying has been cheaper than renting in less than 2% of MSAs since 2Q22, but we have continued to see positive MoM home price growth in many of the largest MSAs for much of 2023. We look at whether buy versus rent inventory levels play a role here in sustaining home price growth.

Figure 90: Buying has become increasingly unaffordable...

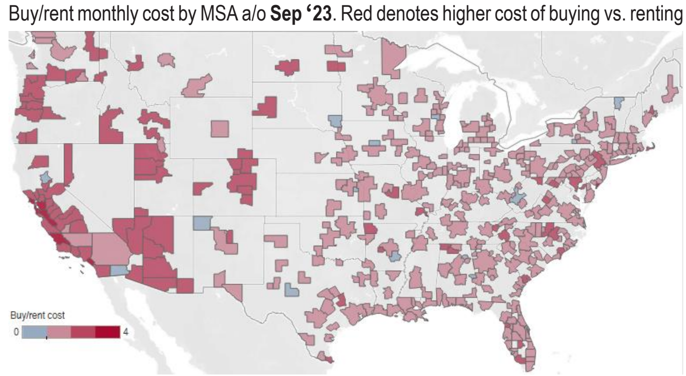
Buy/rent monthly cost by MSA a/o **Sep '20**. Red denotes higher cost of buying vs. renting



Source: J.P. Morgan, CoreLogic, CoStar

Figure 91: ...versus renting across MSAs

Buy/rent monthly cost by MSA a/o **Sep '23**. Red denotes higher cost of buying vs. renting



Source: J.P. Morgan, CoreLogic, CoStar

When considering regional differences in home prices, we tend to look at buy versus rent dynamics using relative affordability levels. While this has been telling of market dynamics, this lens assumes that borrowers in different regions are equally likely to make decisions based on affordability. However, different MSAs have vastly different housing stock and inventory levels. Figure 92 shows the ratio of single-family units (detached and attached) to multi-family units across the top 50 MSAs with the largest housing stock. Clearly, there are places like CA where many MSAs are located next to one another, but with very different compositions of single- and multi-family housing units built (e.g., Los Angeles, Riverside and San Diego). The majority of these largest MSAs have more single-family than multi-family stock to begin with.

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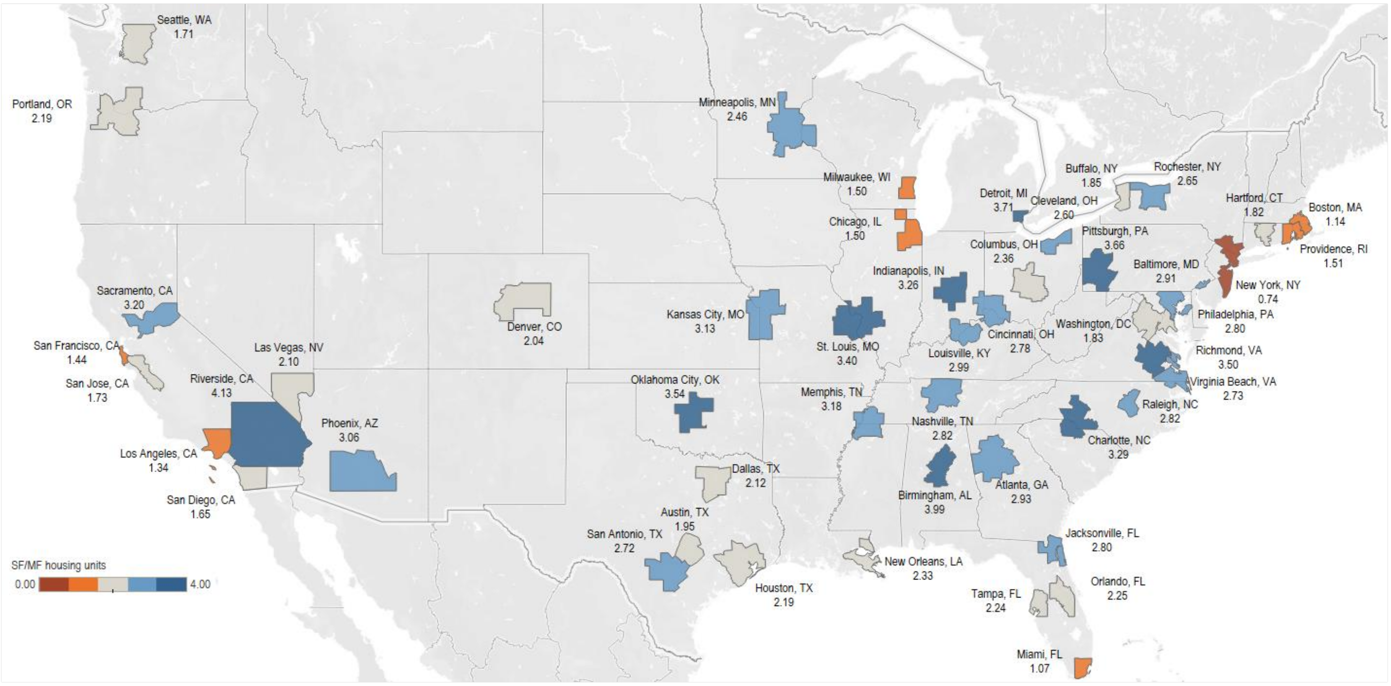
Figure 92: The majority of the largest MSAs have more single-family than multi-family housing stock

Single-family units / multi-family units in top 50 MSAs with the largest total housing stock (a/o 2022)

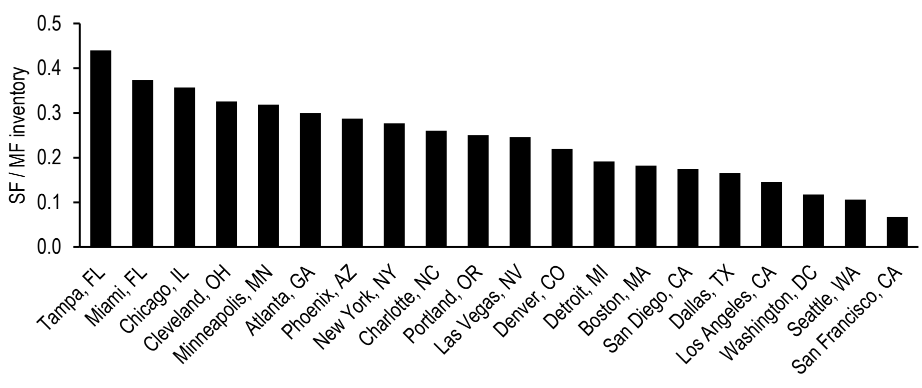


Source: J.P. Morgan, U.S. Census

This gives rise to the differences we see in available inventory. The ratio of available single-family to multi-family units here is harder to compute as there is no single comprehensive source for both single- or multi-family units available for sale and rent, respectively. Using multi-family vacancies as a gauge for rental inventory, Seattle has far more rental inventory than single-family purchase inventory as compared to Tampa or Miami (Figure 93). In other words, borrowers in Tampa are more likely to have more single-family purchase options than rentals. Some single-family units are also available for rent in some regions, but given the lack of single-family rental inventory data, SFR is ignored in this analysis.

Figure 93: Seattle has far more rental inventory than single-family purchase inventory as compared to Tampa or Miami

Single-family inventory / multi-family vacancies in top 20 largest MSAs



Source: J.P. Morgan, Redfin, CoStar
Note: We use Redfin's single-family inventory levels and CoStar's multi-family inventory and vacancy rates to estimate rental inventory

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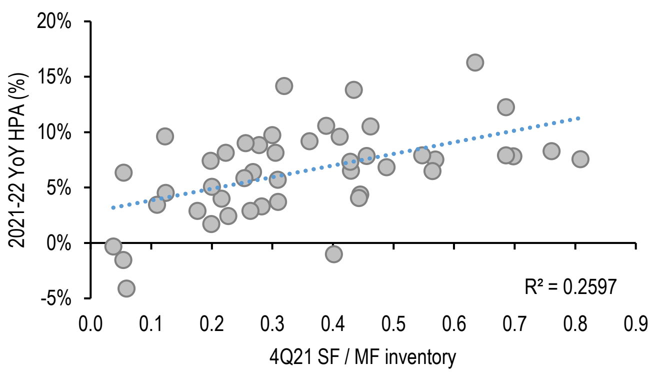
What happens in regions like Tampa, where rental properties are cheaper than buying, but rental inventory is limited? Prospective buyers could either choose not to move, or, in the case of renters on the cusp of being able to afford a home (e.g., Class A renters), they could opt to buy. The latter would suggest that home prices in regions with limited rental inventory should see some support for home prices, particularly in places that have experienced a large influx of residents.

To parse this out, we isolate 2022 data to capture a period with still-low rates and rapidly rising home prices. Figure 94 shows a regression of 2022 YoY HPA versus starting single-family purchase / multi-family vacancy inventory levels across the top 50 largest MSAs. We also see a positive relationship between having relatively larger single-family inventory levels and HPA. At the same time, we see a generally positive trend between HPA in 2022 and net population change (Figure 95). In other words, considering just these variables alone, this suggests that low relative rental inventory, along with population growth, help to support home prices. This of course does not consider the various other factors that contribute to HPA; we exclude them here for simplicity and assume those factors stay constant.

Figure 94: We see a positive relationship between having relatively larger single-family inventory levels and HPA

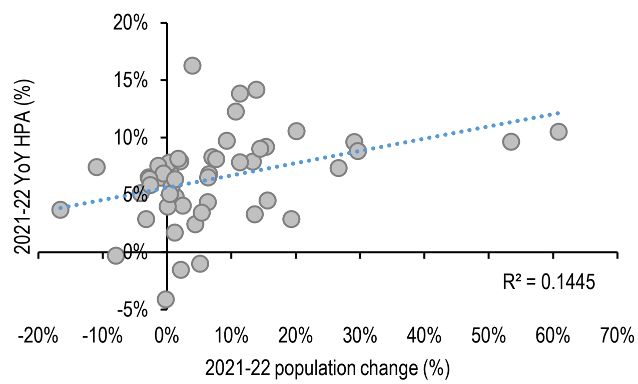
Dec '22 YoY HPA (%) vs. 4Q21 single-family inventory / multi-family vacancies for top 50 largest MSAs



Source: J.P. Morgan, Redfin, CoStar

Figure 95: At the same time, we also see a generally positive trend between HPA in 2022 and net population change

Dec '22 YoY HPA (%) vs. 2022 net population change (%) for top 50 largest MSAs



Source: J.P. Morgan, Redfin, CoStar, U.S. Census

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CMBS Weekly

December 2023 remit review

- CMBS was a little late to the party but December proved to be a large month of outperformance with 10yr conduit CMBS LCF AAAs tightening by 20bp and closing the 2 standard deviation+ cheapness to similar duration single-A corporates and hitting fresh post-SVB collapse tights. LCF AAA spreads have been largely same way directional with rates in the last few months of 2023 as an expression of extension risks. But the spread move this past week moved against the rise in Treasury yields, tightening by 5bp to J+120 on decent volume. Benchmark Agency CMBS spreads were also tighter, albeit a comparatively smaller move with 10yr Freddie K A2s tightening 1bp on the week to J+59 (15bp tightening in December)
- LCF AAAs and Agency CMBS look about fair to corporates in our view at current levels. We don't yet expect further material tightening. But, new issue pricing post-conference will give us a better idea whether the capital stack has truly re-racked to materially tighter levels (particularly in IG mezz). Talk of tapering QT earlier than expected following this past week's FOMC minutes warrants attention to the extent bank deposit growth can come earlier than expected, better supporting mortgage demand, which has knock on effects to all securitized products including CMBS
- This week, we provide a quick recap of CMBS collateral performance in 2023. Private label CMBS serious delinquency rates (60-day+ including foreclosed, REO, and non-performing matured loans) ended 2023 at 4%, a 1.4pt increase year-over year. Most serious delinquencies over the past year have been driven by loans with less than a year left until scheduled maturity, indicating refinancing issues as the main culprit for delinquencies rather than DSCR issues

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Figure 96: CMBS spread summary

	This Week	Change		
		1w	1m	YTD
New Issue CMBS (UST)				
5yr Super-Senior AAA	172	-3	-10	-3
10yr Super-Senior AAA	120	-5	-25	-5
AS	192	-3	-22	-3
AA	232	-1	-21	-1
A	365	0	-50	0
Pre-COVID BBB-	844	1	-51	1
On-the-run BBB-	879	1	-51	1
XA	224	-1	-34	-1
Agency CMBS (SOFR)				
Freddie K A1 (10yr)	96	-1	-4	-1
Freddie K A2 (10yr)	99	1	-1	1
Freddie K Floater (10yr)	70	0	-2	0
Freddie K X1 (UST)	175	-5	-5	-5
Freddie K X3 (UST)	425	0	0	0
FRESB A5H	154	-1	-1	-1
FRESB A10F	129	-5	-6	-5
FNA DUS 10/9.5 TBA	105	0	1	0
FNA DUS SARM	72	-1	-2	-1
GNR Project Loan (3.5yr)	179	-1	-7	-1

Source: J.P. Morgan

Figure 97: Summary of CMBS issuance and dealer holdings

YTD Issuance ($bn)	2023	2022	% Diff.
Conduit	19.7	23.5	-16%
SASB	19.6	46.1	-58%
CRE CLO	6.7	29.0	-77%
Other	0.6	1.9	-70%
Total Private Label	**46.5**	**100.5**	**-54%**
Freddie K	32.5	46.7	-30%
Freddie Multi PC	15.4	11.6	33%
FRESB	1.9	4.5	-58%
Fannie MBS	53.2	68.8	-23%
GNR PL	9.7	25.7	-62%
Freddie Other	2.1	3.0	-30%
Agency CMBS	**114.7**	**160.3**	**-28%**
Total CMBS	**161.2**	**260.8**	**-38%**

YTD Issuance ($bn)	2023	2022	% Diff.
Private Label Fixed	31.7	29.1	9%
Private Label Floating	14.8	71.4	-79%
Agency Fixed	95.6	87.4	9%
Agency Floating	13.0	12.4	6%

Dealer Holdings ($bn)	12/27/23	12/20/23	11/29/23
Private Label	5.61	5.71	5.82
Agency CMBS	11.46	11.26	9.71

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

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Weekly market snapshot

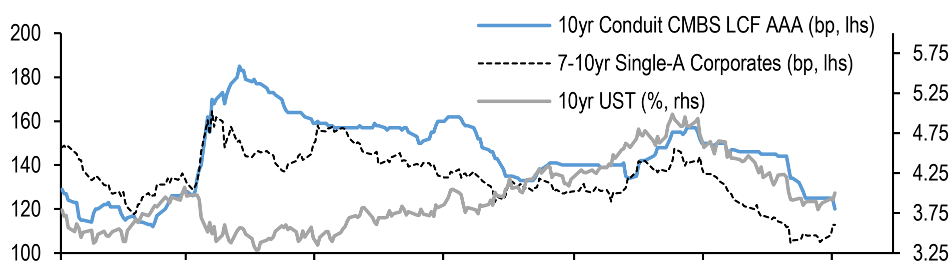
Market commentary - catch-up rally

CMBS was a little late to the party but December proved to be a large month of outperformance with 10yr conduit CMBS LCF AAAs tightening by 20bp and closing the 2 standard deviation+ cheapness to similar duration single-A corporates and hitting fresh post-SVB collapse tights. LCF AAA spreads have been largely same way directional with rates in the last few months of 2023 as an expression of extension risks (which we generally find as too extreme for this portion of the capital stack). But the spread move this past week moved against the rise in Treasury yields, tightening by 5bp to J+120 on decent volume (Figure 98). Benchmark Agency CMBS spreads were also tighter, albeit a comparatively smaller move with 10yr Freddie K A2s tightening 1bp on the week to J+59 (15bp tightening in December).

Perhaps, it's just the CREFC rally at work again, something we cast some doubt on in early December but more sanguine data on inflation has shifted sentiment more positively and lack of 'clean' on-the-run bonds has shifted more trading activity to more seasoned bonds that have higher office concentrations. Is there wind behind this move? LCF AAAs and Agency CMBS look about fair to corporates in our view at current levels. We don't yet expect further material tightening. But, new issue pricing post-conference will give us a better idea whether the capital stack has truly re-racked to materially tighter levels (particularly in IG mezz). Talk of tapering QT earlier than expected following this past week's FOMC minutes warrants attention to the extent bank deposit growth can come earlier than expected, better supporting mortgage demand, which has knock on effects to all securitized products including CMBS.

Figure 98: CMBS spreads have caught up to corporates and look about fair at current levels

Spreads to Treasuries (bp)



Source: J.P. Morgan

December 2023 remit review

Private label CMBS serious delinquency rates (60-day+ including foreclosed, REO, and non-performing matured loans) ended 2023 at 4%, a 1.4pt increase year-over year (Figure 99). As Figure 100 shows, most serious delinquencies over the past year have been driven by loans with less than a year left until scheduled maturity, indicating refinancing issues as the main culprit for delinquencies rather than DSCR issues. Contrast that with the GFC experience, that saw a more substantial share of term defaults. And as Figure 99 shows, the foreclosed/REO rate has remained relatively muted given the unwillingness of special servicers pushing loans into foreclosure. Instead, we've seen the modification rate pick up by 1.5pts year-over-year to 9.4%. The overall rate includes the wave of temporary forbearance mods that occurred during the onset of the pandemic, which are long expired by now. The special servicing rate sits at the center of loans defaulting and loans exiting through resolu-

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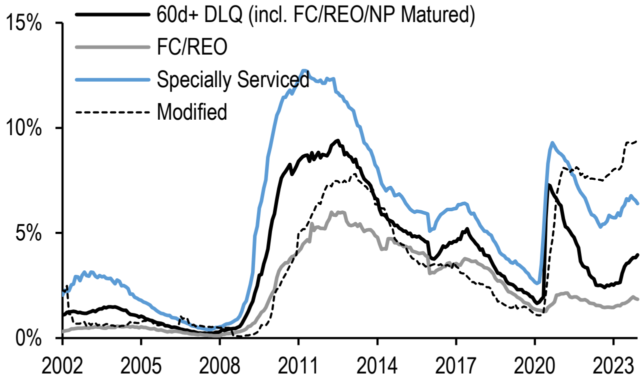
tions (it's like a waiting room). This rate has picked up by about 60bp year-over-year to 6.4% although it has come off the peak of 6.8% in September, in large part, due to the large *Workspace* loan exiting post extension mod. This rate will meander based on resolution outcomes, but we think it will continue to tick up in 2024.

Figure 99: Private label CMBS serious delinquency rates ended 2023 at 4%, a 1.4pt increase year-over-year

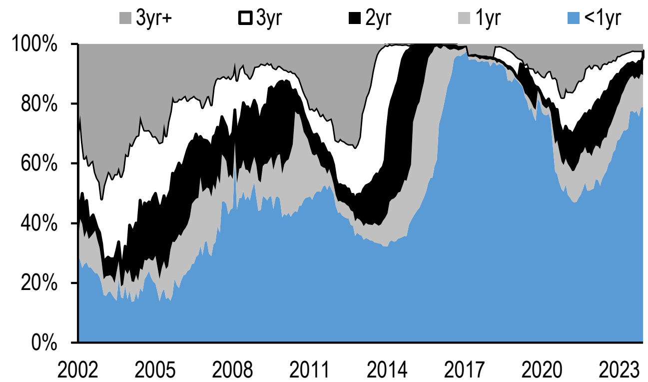
Private label CMBS serious delinquency rates, foreclosed/REO rates, specially serviced rates, and modified rates, as of December 2023



Source: J.P. Morgan, Trepp

Figure 100: 2023 delinquencies have been driven by maturity related issues

Share of private label CMBS seriously delinquent loans by time to scheduled maturity, as of December 2023



Source: J.P. Morgan, Trepp

Figure 101 provides a quick summary status table of private label CMBS loans that exited special servicing in 2023. This data shows that $9.4bn exited special servicing in 2023 (~$43bn still in special servicing). Of this amount, 4.6% has paid off or liquidated after exiting special servicing in 2023. Another 0.9% were defeased. Most (68.8%) were either servicer modified and reinstated or exercised extension options (floaters). But this amount likely understates the true modification/extension share as a portion of the 25.8% that are performing or lightly delinquent (30-day) received servicer modifications but have not been fully documented yet and therefore, are not marked as modified in the data yet. Additionally, we show loans that paid off or were liquidated but for those that either liquidated out of special servicing or liquidated after exiting special servicing prior to 2023. We suspect 2024 special servicing exits will look similar except payoffs and liquidation rates are likely to increase as lower rates should catalyze more opportunistic refinancings and more stretched borrowers throw in the towel.

Figure 101: Most loans that exited special servicing in 2023 were servicer modified or exercised optional extensions. We suspect 2024 special servicing exits will look similar except payoffs and liquidation rates are likely to increase

Private label CMBS special servicer exit status in 2023, as of December 2023

		Special Servicing Exits in 2023								Disposed in 2023 YTD*		
Property Type	Outstanding ($bn)	Balance ($bn)	Paid off	Liquidated	Defeased	Servicer Modified / Extended	Optional Extension Exercised	Performing or 30d	Seriously DLQ	Paid off ($bn)	Liquidated ($bn)	Severity
Office	176.9	3.2	0.0%	2.7%	1.0%	52.6%	14.7%	29.1%	0.0%	0.1	0.3	43.6%
Multifamily	121.2	1.0	2.4%	1.1%	0.8%	53.8%	26.5%	15.5%	0.0%	0.1	0.1	16.1%
Retail	120.2	3.1	2.2%	0.0%	0.9%	73.2%	0.0%	23.7%	0.0%	2.0	1.9	41.4%
Lodging	99.6	1.1	3.9%	0.0%	1.3%	20.3%	36.2%	38.4%	0.0%	2.2	0.6	28.5%
Mixed Use	84.4	0.9	20.3%	1.6%	0.0%	61.3%	0.0%	16.7%	0.0%	0.2	0.2	20.1%
Industrial	48.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0	0.1	13.7%
Self Storage	21.7	0.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0	0.0	0.0%
Other	17.3	0.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0	0.0	n/a
Mobile Home Park	6.8	0.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0	0.0	0.0%
Cooperative Housing	3.6	0.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0	0.0	0.0%
Health Care	0.9	0.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0	0.0	n/a
Warehouse	0.0	0.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0	0.0	n/a
Total	**700.5**	**9.4**	**3.4%**	**1.2%**	**0.9%**	**56.4%**	**12.3%**	**25.8%**	**0.0%**	**4.7**	**3.2**	**36.5%**

Source: J.P. Morgan, Trepp

* Loans disposed out of special servicing or after exiting special servicing prior to 2023.

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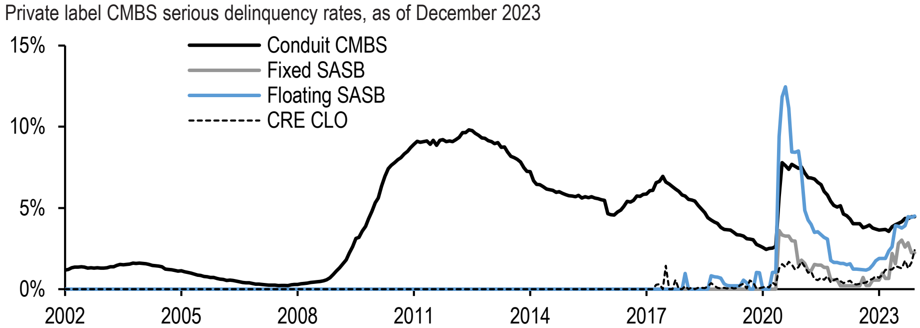
All CMBS product types saw serious delinquencies move higher in 2023 with floating SASB as the underperformer (+2.4pts to 4.5%) (Figure 102). Fixed rate SASB and CRE CLO delinquencies grew by 1.7pt and 1.6pt to 2.2% and 2.4%, respectively. CRE CLO serious delinquencies were under control for most of the year but popped in December to 2.4% from 1.6% in November. There is something of a seasoned vintage skew for CRE CLO delinquencies with 2019 vintage serious delinquencies sitting at 16% ($3.6bn total vintage outstandings) and representing 30% of all seriously delinquent CRE CLO loans. But, 2021 and 2022 vintage serious delinquencies, while still relatively low in relation to their outstandings at 2% and 1.3%, respectively, they command 41% and 21% of all seriously delinquent CRE CLO loans. Indeed, it'll be these vintages that'll drive more meaningful incremental delinquencies to the sector in 2024 in our view.

Figure 102: Serious delinquencies rose for all CMBS products in 2023. Floating SASB underperformed the most

Private label CMBS serious delinquency rates, as of December 2023



Source: J.P. Morgan, Trepp
Note: SASB and CRE CLO delinquency data prior to 2017 is excluded given sparse data

By property type, most of the major property sectors saw serious delinquency rates expand (office most significantly), except for retail that saw a small drop (Figure 103). The bars on Figure 103 represent the percent rank of serious delinquency rates for the respective periods over each category's 20-year history. For retail and hotels, the 2020 pandemic period was the peak for serious delinquencies. Re-opening led to a lot of curing for these segments. For office and multifamily, the current period represents the peak. Office is struggling from a structural problem while private label multifamily is dealing with a portion of the market with busted capital structures. To be clear, we do not buy into the narrative that there will be widespread distress in the multifamily market. That said, multifamily and office delinquencies are likely to move higher in 2024.

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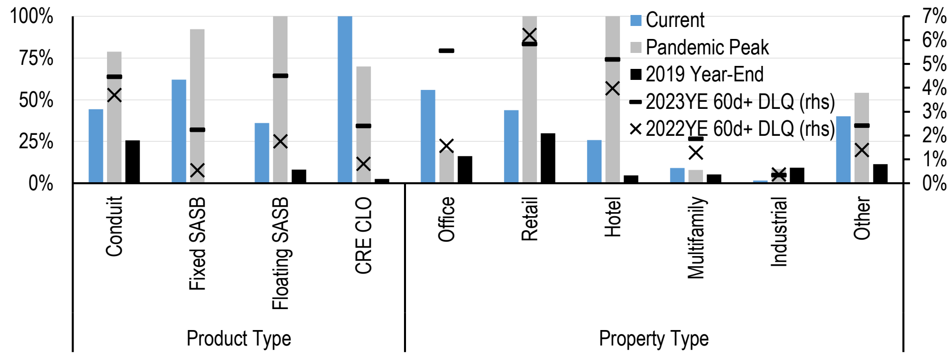
Figure 103: Most major property types saw serious delinquency rates increase in 2023 except retail that saw a small decline

Percent rank of serious delinquency rates (60-day+ including foreclosed/REO and non-performing matured loans) versus each category's 20-year history and current serious delinquency rates, as of December 2023



Source: J.P. Morgan, Trepp

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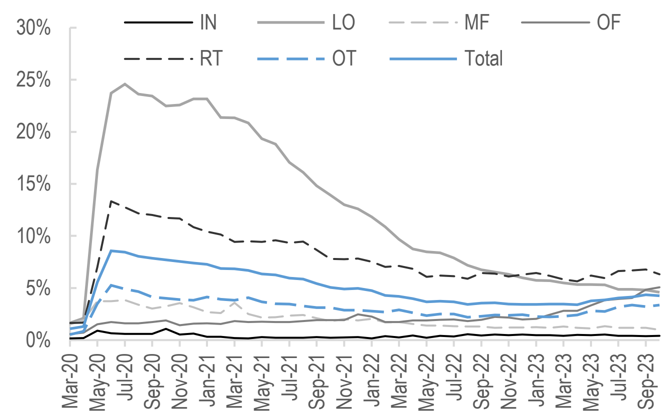
Weekly Tracker

Figure 104: Delinquency rate

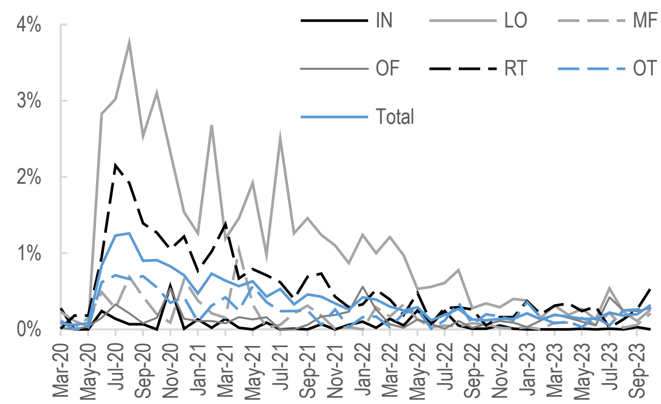
Conduit CMBS 30-day+ delinquency rate including FC/REO and NP matured (%)



Source: J.P. Morgan, Trepp

Figure 105: Delinquency cure rates

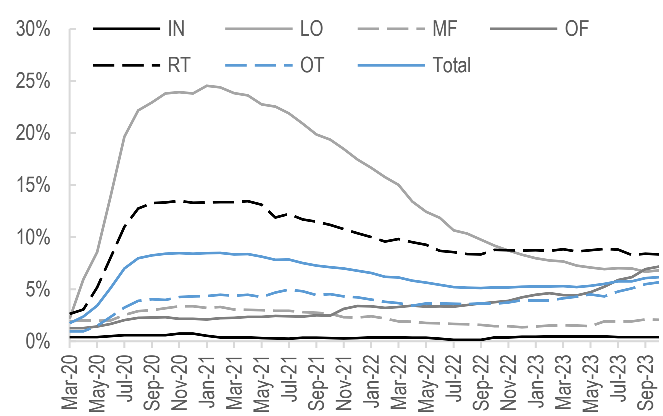
Conduit CMBS 30 day+ delinquency to performing transition rates (%)



Source: J.P. Morgan, Trepp

Figure 106: Specially serviced rate

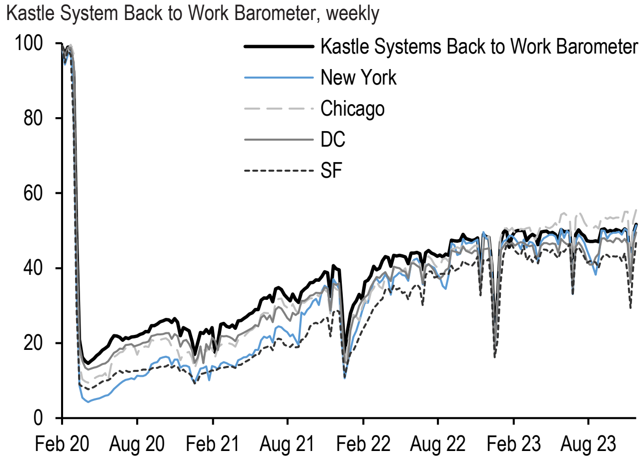
Conduit CMBS percentage of loans in special servicing (%)



Source: J.P. Morgan, Trepp

Figure 107: Office RTTO indexed to pre-pandemic levels

Kastle System Back to Work Barometer, weekly



Source: Kastle Systems, Bloomberg Finance L.P.

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Cross Sector Spreads

Product	Tranche / Bucket	Current	Changes			5yr Trailing		Percentile Rank		
		1/4/24	-1w	-1m	-1y	Min	Max	3yr	5yr	7yr
Conduit CMBS	3yr AAA	110	-5	-13	-5	26	463	52.8%	67.2%	75.6%
Treasury Spread (bp)	5yr AAA	172	-3	-10	47	47	461	81.8%	85.9%	89.9%
	10yr LCF AAA	120	-5	-25	-7	59	340	45.4%	62.1%	72.6%
	10yr AS	192	-3	-23	-8	74	440	55.5%	69.6%	78.5%
	10yr AA	232	-1	-23	-28	90	565	53.1%	66.3%	76.1%
	10yr A	365	0	-55	-10	123	756	61.7%	71.2%	79.7%
	10yr BBB-	879	1	-56	164	263	1354	72.5%	78.8%	78.8%
	XA	224	-1	-36	-86	90	535	44.9%	58.0%	70.0%
Freddie K	7yr A2	54	1	-5	2	6	100	74.0%	82.7%	87.9%
Treasury Spread (bp)	10yr A2	60	1	-2	-2	10	110	68.7%	80.0%	85.7%
	2020 Vintage B	160	0	0	-2	109	441	N/A	N/A	N/A
	2020 Vintage C	194	1	0	-6	158	593	N/A	N/A	N/A
	X1	175	-5	4	-55	50	400	52.0%	57.6%	71.6%
	X3	425	0	9	-100	225	695	46.7%	58.4%	73.6%
	SOFR Floater (DM)	70	0	7	-7	19	90	74.0%	74.0%	76.0%
FRESB	A5H (5yr Hybrid ARM)	123	1	7	65	2	131	92.7%	95.7%	96.3%
Treasury Spread (bp)	A10F (10yr Fixed Rate)	91	-4	-6	13	16	126	79.3%	87.1%	88.4%
Fannie DUS	7/6.5 TBA	61	-1	-3	7	7	110	73.3%	83.1%	87.9%
Treasury Spread (bp)	10/9.5 TBA	66	0	0	-1	14	135	69.3%	80.0%	85.1%
	SOFR SARM (DM)	72	-1	7	-7	22	95	70.0%	74.9%	73.7%
Fannie ACES	7yr A2	56	1	-5	1	7	102	71.3%	81.5%	87.0%
Treasury Spread (bp)	10yr A2	61	0	-3	-4	12	120	66.7%	78.8%	83.4%
GNR Project Loans	3.5yr	155	1	7	-8	60	169	74.7%	85.9%	89.0%
Treasury Spread (bp)	7.5yr	181	1	-6	-17	69	202	81.3%	89.0%	92.7%
	12yr	181	2	-9	-52	80	237	66.7%	80.4%	86.2%
Production Coupon	FN/FR 30yr PC (OAS)	26	0	-18	-4	-35	115	50.8%	54.1%	47.4%
	FN/FR 30yr PC (ZV)	105	3	-39	-24	-2	173	52.0%	70.4%	78.8%
CLO	AAA	153	1	-10	-36	109	408	64.8%	71.8%	79.9%
Discount Margin	BBB	412	3	-31	-111	323	972	61.6%	68.3%	77.4%
	BB	839	3	-41	-155	655	1,756	69.1%	71.0%	79.3%
JULI (ex-EM)	3-5yr	106	5	-5	-27	58	407	58.7%	64.4%	74.6%
Treasury Spread (bp)	5-7yr	111	5	-6	-35	71	372	57.2%	61.5%	72.5%
	7-10yr	129	7	-5	-43	87	368	55.3%	63.3%	73.8%
	7-10yr A	113	8	-3	-35	68	316	58.9%	68.7%	77.6%
	7-10yr REITs	138	0	-20	-53	98	350	62.3%	71.0%	79.3%
High Yield	Domestic HY	397	22	-12	-95	368	1,139	21.6%	13.0%	18.7%
Spread to Worst (bp)	Energy	334	25	6	-66	305	2,395	9.2%	5.5%	3.9%
Swap Spreads	3yr	5	2	2	-6	-6	24	2.4%	2.4%	2.4%
(bp)	5yr	-1	1	0	-2	-8	15	1.5%	1.5%	1.5%
	10yr	-10	0	-1	-6	-15	11	0.7%	0.7%	0.7%

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Cross Sector Spreads (continued)

Product	Tranche / Bucket	Current	Changes			5yr Trailing		Percentile Rank		
		1/4/24	-1w	-1m	-1y	Min	Max	3yr	5yr	7yr
CMBX (bp)	AAA16	78	2	-15	N/A	75	119	37.9%	37.9%	37.9%
	AAA15	75	2	-15	-6	60	115	19.8%	19.8%	19.8%
	AAA14	70	3	-13	-3	45	109	49.4%	50.5%	50.5%
	AAA13	66	3	-12	-1	42	167	52.6%	58.5%	58.5%
	AAA12	62	3	-9	0	37	162	56.2%	69.0%	69.8%
	AAA11	58	3	-8	0	32	146	57.0%	70.4%	67.5%
	AAA10	54	3	-8	0	26	141	58.3%	72.6%	66.1%
	AAA9	51	3	-8	2	21	127	60.7%	74.5%	72.4%
	AAA8	44	1	-11	2	18	117	61.9%	75.1%	72.5%
	AAA7	50	0	0	16	15	107	79.2%	85.9%	86.4%
	BBB-16	842	224	151	N/A	583	879	32.6%	32.6%	32.6%
	BBB-15	642	-9	-72	9	375	922	47.9%	47.9%	47.9%
	BBB-14	718	-6	-99	65	320	985	70.7%	71.4%	71.4%
	BBB-13	887	-2	-107	162	339	1,151	72.1%	76.8%	76.8%
	BBB-12	962	-14	-148	232	309	1,282	72.1%	82.1%	82.6%
	BBB-11	849	2	-97	142	302	1,174	72.1%	79.6%	83.5%
	BBB-10	1,359	-29	-308	482	297	1,819	74.1%	84.4%	88.9%
	BBB-9	1,465	-4	-129	324	301	1,850	76.0%	85.6%	89.7%
	BBB-7	24,400	3,490	-5,300	20,934	281	114,561	95.6%	97.3%	98.1%
CDX (bp)	5yr IG	58	2	-5	-21	44	152	34.0%	40.8%	38.6%
	5yr HY	362	9	-44	-114	267	882	36.8%	47.0%	58.0%

Source: J.P. Morgan

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Recent Publications

Publication Date	Publication title	
	CMBS Weekly	
12/15/2023	CMBS Weekly: 2024 CRE outlook - part II	
12/8/2023	CMBS Weekly: 2024 CRE outlook - part I	
11/9/2023	CMBS Weekly: Underwriting review and 2024 thoughts	
11/3/2023	CMBS Weekly: 2024 refi success rate outlook	
10/27/2023	CMBS Weekly: The verdict on floating SASB extensions - TBD	
10/20/2023	CMBS Weekly: Diving into FRESB	
10/13/2023	CMBS Weekly: Will rating downgrades cause passive funds to sell CMBS?	
9/29/2023	CMBS Weekly: Long on opportunity potential, short on will	
9/22/2023	CMBS Weekly: Muted defeasance volumes present more refi headwinds	
9/15/2023	CMBS Weekly: Aon Center re-appraisal and 1740 Broadway potential note sale	
9/8/2023	CMBS Weekly: CMBS financials update and August 2023 remit review	
8/25/2023	CMBS Weekly: Revising down our 2023 multifamily rent forecast and what's up with CRE CLO mods?	
8/18/2023	CMBS Weekly: CRE CLO update, 1740 Broadway receives re-appraisal	
8/4/2023	CMBS Weekly: July 2023 remits, 1740 Broadway, SLOOS, Fitch downgrade	
7/28/2023	CMBS Weekly: Basel Endgame and Refinance Success Rates	
7/14/2023	CMBS Weekly: Don't overextend	
7/7/2023	CMBS Weekly: June Remit Review	
6/9/2023	CMBS Weekly: How much extension risk is priced into the market?	
6/2/2023	CMBS Weekly: May 2023 remit review - office delinquency rates spike	
5/17/2023	CMBS Weekly: Tracking RTTO with location analytics	
5/12/2023	CMBS Weekly: Catching up on CRE CLOs: some AAA upside?	
5/5/2023	CMBS Weekly: May 5, 2023	
4/28/2023	CMBS Weekly: It never rains in California	
4/21/2023	CMBS Weekly: You going organic?	
4/14/2023	CMBS Weekly: How costly are interest rate caps for SASB floaters?	
3/31/2023	CMBS Weekly: CMBS office maturity watch: 375 Park Avenue (Seagram Building)	
3/24/2023	CMBS Weekly: Lowering our issuance forecast, LCF AAAs look cheap	
	Other periodicals	Frequency
12/7/2023	CMBX Daily Analytics	Daily
12/4/2023	CMBS Weekly Datasheet	Weekly
5/3/2023	CMBX Trade Analytics	Weekly
11/6/2023	CMBS Credit Monthly	Monthly
11/6/2023	Agency CMBS Databook	Monthly
11/29/2023	CRE Observer Chartbook	Quarterly
11/7/2023	Office Market Monitor	Monthly
	Ad-hoc publications of note	
11/21/2023	CMBS 2024 Outlook: Down but not out	
9/15/2023	CMBS Note: 1740 Broadway note sale update	
6/23/2023	2023 CMBS Midyear Outlook: Just Keep Swimming	
11/22/2022	CMBS 2023 Outlook: Down but not out	
3/23/2023	Commercial Real Estate Overview: Stressing Banks, Insurance and REITs for CRE Weakness	
4/20/2023	Credit Watch: Navigating the Bull Market in Bearishness	

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3/29/2023	Credit Watch: How Bad Can Bad Be?
3/22/2023	Credit Watch: The Swiss Watch Edition
2/1/2023	Credit Watch: Even More Private Credit Uncovered
11/3/2022	Credit Watch: Some Context around Non-Bank Lending

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Asset-backed Securities

January 5, 2024

- The ABS market is off to good start in 2024 with spreads firm to tighter over the turn of the year
- December consumer ABS reported continued slow deterioration in credit metrics in line with broader still tight labor market conditions; given J.P. Morgan economists' forecast for the US to narrowly avoid recession in the year ahead, the economic backdrop remains fairly benign for ABS performance, particularly relative to robust structures
- Happy 2024!

2024 off to good start

ABS spreads were firm to tighter over the turn of the year, on decent year-end flows with dealers unloading inventory. Plain vanilla ABS led the spread recovery in December, while other sectors caught up with subsequent spread narrowing. This past week, for example, MPL, student loan and equipment ABS spread saw 5-10bp of improvement, while card and auto ABS held firm. The new issue pipeline is building quickly with mainly auto transactions. 2023 ABS supply finished at $256bn, including a record $146bn from the auto sector. We projected roughly flat year-over-year ABS issuance pace, or to put a number on it, $250bn for full year 2024 ABS supply. While auto ABS sponsors are expected to clearly dominate issuance activity once again, the consensus auto sales expectation is for a slight year-over-year uptick given the balance of dampened demand (due to higher interest) versus post-pandemic supply chain resets/pent-up demand. We note that auto CLN issuance totaled $612mn in 2023 across Santander Bank and first-time issuer US Bank, versus $1.28bn in 2022 from Santander Bank and $1.85bn in 2021 from Chase and Santander Bank. CLN and ABS will remain in the toolbox for various banks to fund auto originations. In addition, December auto sales came in at 16.1mn SAAR (+13%yoy), above the median consensus expectation of 15.5mn[1] . Our economists project 15.6mn units saar for 2024 auto sales versus 15.4mn in 2023. We expect the January-effect will remain intact in 2024 with resurgent demand balancing out a fast issuance pace to keep ABS spreads firm to start 2024. January is typically a solid supply month, recording $20.2bn and $21.3bn in 2023 and 2022, respectively. However, tightening potential over 1H24 remains limited by potential for heavy supply (for ABS and corporates) as well as consumer credit/recession concerns, specifically for certain ABS nonprime/unsecured segments.

December 2023 consumer ABS pool performance reports

Herein, we review consumer ABS credit metrics reported in December, highlighting mostly a continued slow deterioration in delinquencies and loss trends. Earlier this week, we published our monthly ABS Performance Statistics. Overall, ABS performance remains better than the overall aggregate consumer. For the most part, consumer ABS performance and trends have been well behaved with limited weakness in 2022 subprime and unsecured consumer loan pools. In addition, ABS pool performance historically has tracked better than sponsors' managed portfolio with recent trends pointing to a further drift in performance[2] (i.e. more outperformance of sponsor's ABS pools relative to managed portfolios). Typically, ABS pools tend to be higher up in quality (higher FICO/credit score) and more

1. "US Automotive: December Caps a Year to Remember, but All Eyes on 2024" Avi Steiner and Evan Piascik, January 4, 2024
2. For full details please refer to Asset-backed Securities, September 22, 2023

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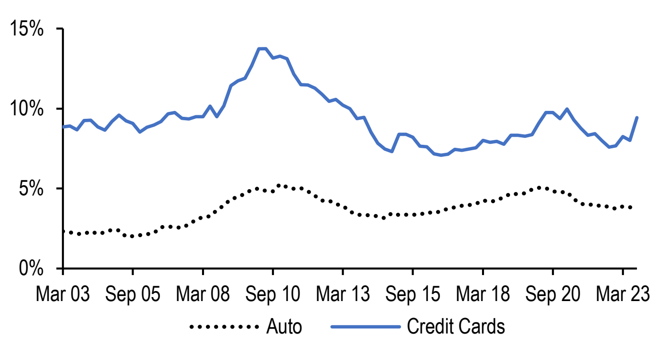
seasoned (in case of bankcard ABS) versus the managed portfolio.

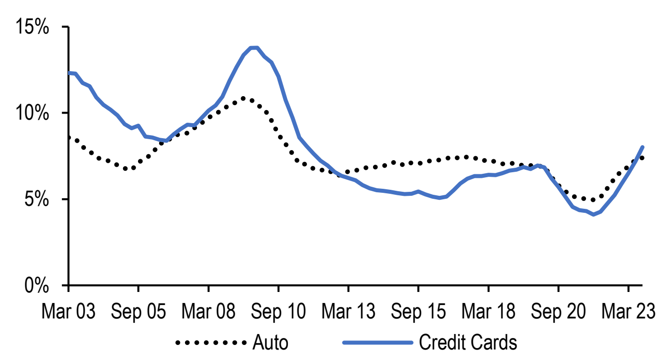
On aggregate, consumer credit deterioration has been in line with post-pandemic normalization expectations, largely held up by the still tight labor market. We expect further deterioration in loss rates, as arrears flow through to defaults in the upcoming months, prior to a plateau given forecasted no recession scenario. 3Q23 earnings from bank sponsors also saw higher net charge-off guidance for the year amidst continued credit normalization. Broadly, card NCOs are expected to peak in the near term and plateau by mid-2024 with longer term trajectory more economy-dependent (path of interest rates, unemployment, inflation etc.). According to FRBNY's quarterly household debt and credit report, 90+ delinquencies for autos stood at 3.91% for 3Q23 versus 4.75% through 2019 (quarterly average) and for credit card the metric tracked 9.43% versus 8.32% (Figure 108). Transition to 30+ delinquencies (i.e., new delinquent balances expressed as a percentage of previous quarter's balance that was not delinquent, reported as four-quarter moving sums to offset seasonal trends) has also increased from the pandemic lows and should subsequently flow through to serious delinquency states (and eventually charge-off) in the upcoming months. For instance, 7.39% of auto loan balances became 30 or more days delinquent in 3Q23, an uptick of 0.11% from 2Q23, and compared to 6.97% through 2019 and an all-time low of 4.96% in 4Q21 (Figure 109). For card transition to arrears, about 8.01% of card balances moved to delinquency per 3Q23 reporting, an uptick of 80bp from the prior quarter and compared to 6.82% (quarterly average) through 2019. For historical context, peak annualized delinquency transition rates in GFC (2009) were 10.85% for autos and 13.78% for cards.

Figure 108: 90+ delinquency rate for autos and cards



Source: New York Fed Consumer Credit Panel/Equifax

Figure 109: New 30+ delinquency transition rate for autos and cards



Source: New York Fed Consumer Credit Panel/Equifax

As of 3Q23, credit card balances stood at $1.08 trillion, after recording consecutive quarterly growth since 2Q22. Through the first three quarters of 2023, credit card debt grew 9.4%, with 3Q23 print tracking 16.4% higher than pre-pandemic 4Q19 balance. In aggregate, this trend of increasing card balances is consistent with strong nominal spending and real GDP growth through 2023. Nonetheless, our economists expect the pace of real consumer spending to slow, with 4Q23 expected to track 2.6% (saar) compared to 3.5% annualized pace of growth in 3Q.[3] Further, they still see some downside risk to the 2.0% real GDP forecast for 4Q. These trends, if realized, should result in slower loan growth and card balances with the offset being higher rates (card APRs). Along with card balances, recent delinquencies have also recorded an uptick from the record pandemic lows. The FRBNY in a special report published in November noted that millennials, lower income, bigger balance as well as

3. For full details please refer to US: Retail spending holds up in November, Daniel Silver, December 14, 2023

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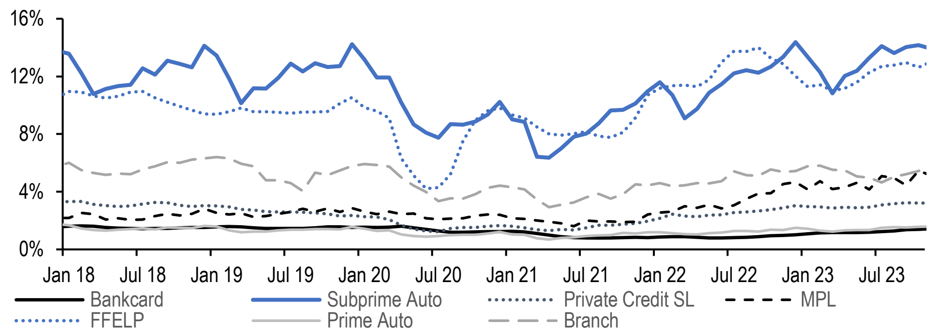
borrowers with auto and student loans have seen worse deterioration, falling further behind on credit card payments.[4]

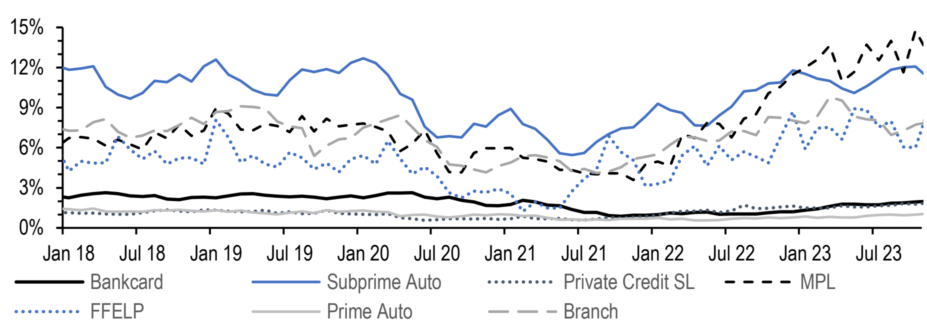
Turning to ABS, we note that 30+ delinquencies and defaults have been increasing since mid-2021 across consumer asset classes as pandemic fiscal stimulus tailwinds faded and inflation took center stage (Figure 110 and Figure 111). However, the deterioration remains minimal for bankcard, prime auto loan and private credit student loan ABS. On our bankcard ABS master performance index, for example, 30+ delinquencies stood at 1.43% in November, versus last year's record low average of 0.88% and pre-pandemic 2019 average of 1.52%. Net charge-off on the bankcard index was at 2.00%, the highest since January 2021 and compared to 2019 average of 2.37%. Delinquency and CDR trends for private credit student loan ABS (despite lower refi volumes) and prime auto loan segments is tracking a touch better to in-line with pre-pandemic trends. Subprime auto and marketplace lending (MPL) unsecured consumer loans have seen more notable credit deterioration, such as new highs on delinquencies, but thus far, negative rating impact on ABS has been limited to 2022 deals from specific programs/issuers. FFELP student loan ABS also saw notable increase in delinquencies; however, underlying loans backing FFELP ABS are at least 97% guaranteed against losses, ultimately by the Department of Education.

Figure 110: 30+ delinquencies on consumer ABS pools



Source: J.P. Morgan, Intex

Figure 111: Losses on consumer ABS pools



Source: J.P. Morgan, Intex
Note: Credit card ABS losses measured as annualized charge-off rates, MPL and branch as annualized net loss rate and rest of asset classes reports 1-month CDRs.

While on an aggregate basis non-prime auto ABS performance looks weaker now versus pre-pandemic and GFC, we note that the granular vintage and shelf trend varies widely. For instance, GM's nonprime AMCAR auto loan ABS saw only a slight deterioration on the

4. https://libertystreeteconomics.newyorkfed.org/2023/11/credit-card-delinquencies-continue-to-rise-who-is-missing-payments/

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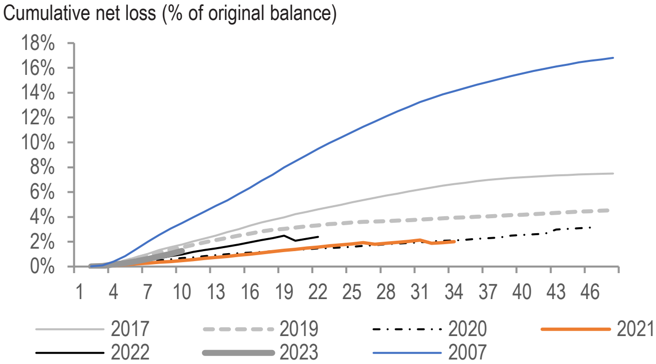
2022 book, which is still tracking significantly better compared to pre-pandemic vintages, and 2023 vintage exhibiting only a modest uptick versus 2022. AMCAR 2023 cumulative net loss tracked 1.02% at deal age 9 months, slightly better than 1.35% for the 2019 ramp and only a touch higher than 2022 book at 0.83% for the same deal age. Additionally, the worst impacted GFC vintage (2007 vintage) for the issuer recorded cumulative net losses in the range of ~17%, more than twice that of the 2017 vintage ramp (Figure 112). AMCAR loss expectations have been around 9%-10% since 4Q21, similar to pre-pandemic prints versus 11%-12% from 2H20 through 1H21. We note that AMCAR pools have been largely consistent over the years and have generally trended up in quality in recent years (outside of the higher % of used vehicles). For Exeter, late 2022 and recent 2023 transactions had initial lifetime expected rating agency estimated CNLs in the 21%-22% (back to 2019 levels), compared to 19% for 2022 transactions and an elevated 23%-24% during 2020 (reflecting the pandemic uncertainty then). We note that for EART 2022 transactions (22-1 through 22-5), CNLs were revised by S&P to 22%-23% reflecting weaker than expected credit prints. However, it is encouraging to see that 2023 book is exhibiting early positive signs of stabilization with the loss ramp in line with pre-pandemic 2019 vintage and better than the dismal 2022 performance (Figure 113). We note that recent 2023 EART pools (compared to 2022) have generally higher credit bureau scores and are limited to loans with accounts that have made at least one payment.

Figure 112: AMCAR CNL ramps by vintage

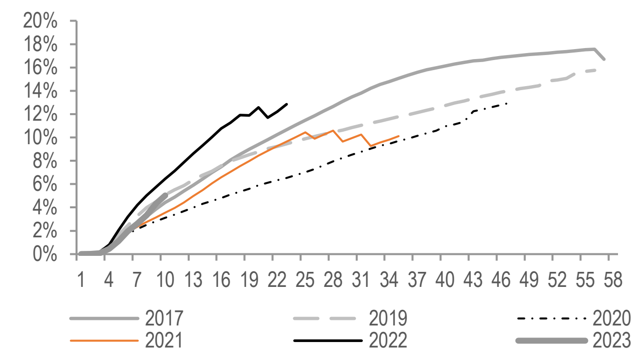
Cumulative net loss (% of original balance)



Source: J.P. Morgan, Intex

Figure 113: EART CNL ramps by vintage

Cumulative net loss (% of original balance)



Source: J.P. Morgan, Intex

Additionally, the impact of credit normalization on arrears has varied across the credit spectrum, with the deterioration more discernible in lower quality borrower cohorts (Figure 114 and Figure 115). For example, in non-prime auto ABS pools, the 541-600 band of borrowers saw 30+ delinquencies hit 19.43% this October versus 15.7% in October 2022 and 14.42% in October 2019, while the >660 band saw arrears total 9.09% versus 6.93% in October 2019. On MPL ABS pools, the <660 band showed the sharpest increase in late payment, with current arrears at 9.59%, compared to pre pandemic 2019 average of 2.70%. However, we note that MPL ABS is predominantly backed by unsecured consumer loan to prime borrowers, and the overall share of borrowers with credit score <600 is 4.1% compared to 22.2% in the 600-659 bucket and 41.5% in the 660-719 bucket. We expect the nonprime (lower credit score) cohorts to continue leading the credit normalization across consumer sectors in the near term until when loss rates plateau as worst impacted pandemic vintages become a smaller percentage of the overall sector.

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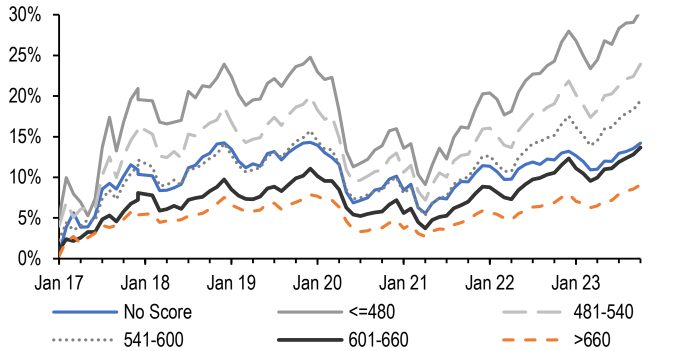
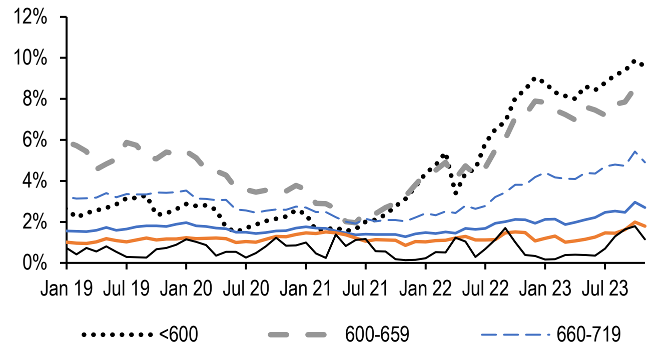
Figure 114: 30+ delinquency rate for nonprime auto ABS by credit score bands



Source: J.P. Morgan, ABS-EE via 1010DATA

Figure 115: 30+ delinquency rate for MPL ABS pools by credit score bands



Source: J.P. Morgan, dv01

In our view, credit deterioration across consumer ABS sectors has thus far been largely well within expectations. Instances of higher-than-expected loss trends remain limited to a specific asset segments/sponsors and the 2022 vintage. We expect more credit deterioration in the upcoming months in line with the deterioration in labor markets. From an ABS credit perspective, sponsors tightening underwriting for the large part of 2023, higher rating agency loss expectations on recent vintages (which ultimately results in more enhancement/support to transactions) and expectation for gradual improvement in rate of credit deterioration (with 2022 likely to be the worst pandemic vintage), should all provide meaningful support. Additionally, the bulk of consumer ABS segments are short-term and amortizing, with credit enhancement constantly building up as the deal de-levers. From a macro perspective, expectations of rate cuts, more controlled inflation and modest uptick in unemployment forecasted, should facilitate a conducive environment for sponsors to tap the ABS market, specifically the ones impacted the most by the recent rate squeeze. Although our base case scenario is still no recession, ABS structures are currently well enhanced to weather mild recessions.

Week in review

The ABS pipeline is building with $4.6bn across five transactions in pre-marketing. 2023 supply wrapped with $256bn total, including a well above-average $7bn in December. MPL ABS spreads tightened 5-10bp across the capital structure over the past week with AAA 1-year indicative spread now at Treasury +110bp versus 2023 range of 95-215bp and BB 3-4year at +700bp versus range of 675-800bp.

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Data appendix

Figure 116: ABS supply

$bn

	2019	2020	2021	2022	2023
Credit Cards	24	4	17	32	23
Bank/Charge	*21*	*4*	*17*	*30*	*21*
Retail	*3*	*0*	*0*	*2*	*2*
Autos	111	98	132	110	146
Prime Loan	*49*	*46*	*50*	*50*	*73*
Non-prime Loan	*30*	*28*	*43*	*33*	*34*
Lease	*21*	*19*	*27*	*16*	*23*
Fleet & other	*11*	*6*	*13*	*11*	*16*
Student Loans	14	17	26	7	7
FFELP	*6*	*5*	*8*	*0*	*0*
Private Credit	*8*	*12*	*18*	*7*	*7*
Equipment	19	13	20	22	22
Floorplan	9	4	1	1	4
Unsecured Consumer	15	9	17	16	14
MPL	*8*	*4*	*8*	*9*	*8*
Branch & other	*6*	*5*	*9*	*7*	*6*
Miscellaneous	38	34	55	55	40
Total ABS	230	179	267	244	256
% 144A	55%	57%	61%	50%	56%
% Floating-rate	9%	4%	5%	4%	7%

Source: J.P. Morgan.

Figure 117: Other ABS supply

$bn

	2019	2020	2021	2022	2023
Stranded Ast	0.2		2.3	21.2	7.8
Data Center	1.3	2.6	6.2	1.0	5.9
Device Payment	3.8	4.4	3.1	5.3	4.5
Solar	1.9	2.7	3.2	4.0	4.2
Timeshare	3.5	1.9	2.4	2.6	2.5
Insurance	0.8	2.2	1.1	2.3	2.4
Franchise/Whole Bus.	9.1	4.8	13.7	6.6	1.7
SBL	1.6	0.4	1.0	1.7	1.0
PACE	0.5	0.3	0.8	0.5	0.7
Aircraft	9.2	2.6	8.5	1.1	0.7
Healthcare	0.3	0.4		0.4	0.4
Containers	0.7	7.3	5.6	0.8	0.3
Taxes	0.3		0.5	0.1	0.3
Railcar	1.9	0.5	2.8	0.9	0.2
Trade Rec.	0.2		0.3		
Miscellaneous	2.5	3.9	3.1	6.8	7.0
Total Other ABS	37.8	34.1	54.6	55.2	39.6

Source: J.P. Morgan.

Figure 118: ABS spread performance

bp

	Benchmark	Current	1-week		10-week	
		1/4/2024	Change	Avg	Min	Max
Credit Card - Fixed Rate						
2-yr AAA	Treasury	50	0	58	50	65
3-yr AAA	Treasury	55	0	64	55	75
5-yr AAA	Treasury	70	0	79	70	88
10-yr AAA	Treasury	100	0	109	100	120
B-Piece (5-yr)	Treasury	100	0	110	100	133
C-Piece (5-yr)	Treasury	142	0	152	142	176
Credit Card - Floating Rate						
2-yr AAA	SOFR	50	0	58	50	65
3-yr AAA	SOFR	55	0	65	55	75
5-yr AAA	SOFR	75	0	83	75	90
10-yr AAA	SOFR	110	0	117	110	125
B-Piece (5-yr)	SOFR	113	0	121	113	130
C-Piece (5-yr)	SOFR	155	0	162	155	170
Auto - Prime						
1-yr AAA	Treasury	50	0	57	50	65
2-yr AAA	Treasury	60	0	71	60	83
3-yr AAA	Treasury	70	0	82	70	95
3-yr AA	Treasury	135	0	146	135	160
Student Loans (FFELP)						
3-yr AAA	SOFR	110	-5	117	110	120
7-yr AAA	SOFR	125	-10	137	125	140
Private Credit Student Loan						
3-yr AAA	SOFR	140	-5	154	140	160
Unsecured Consumer MPL						
1-yr AAA	Treasury	110	-5	130	110	150
3-yr AA	Treasury	190	-5	212	190	230
3-4yr A	Treasury	260	-10	292	260	315
3-4yr BBB	Treasury	390	-10	425	390	450
3-4yr BB	Treasury	700	-10	740	700	775
Auto - Subprime						
1-yr AAA	Treasury	65	0	79	65	100
2-yr AAA	Treasury	100	0	112	100	125
3-yr AA	Treasury	125	0	137	125	160
3-yr A	Treasury	160	-10	182	160	195
3-yr BBB	Treasury	215	-10	239	215	260
3-yr BB	Treasury	495	0	521	495	550

Source: J.P. Morgan.

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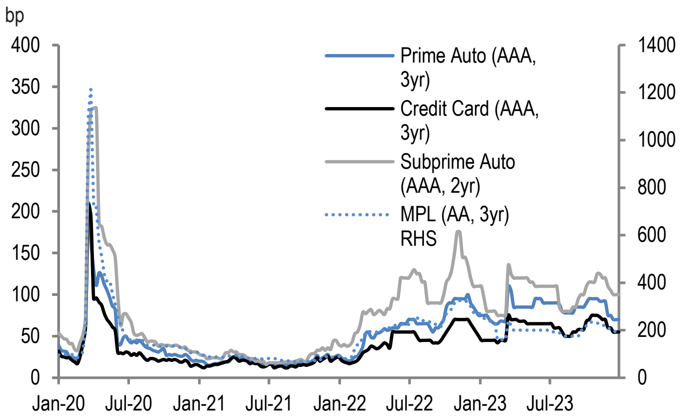
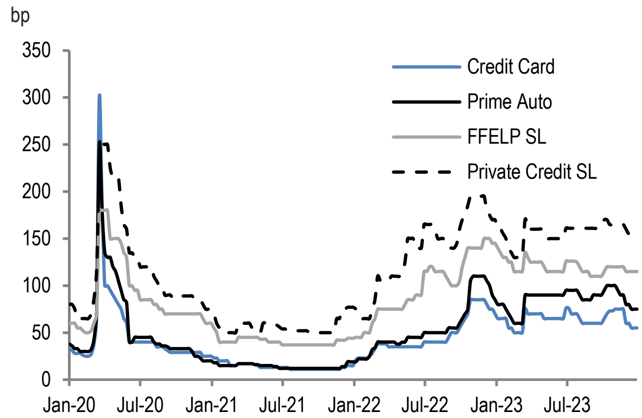
Figure 119: Fixed-rate AAA ABS (3-year) spreads to Treasury



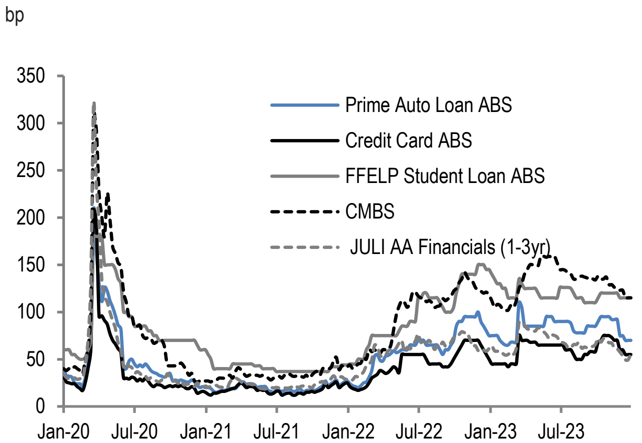
Source: J.P. Morgan.

Figure 120: Floating-rate AAA ABS (3-year) spreads to SOFR



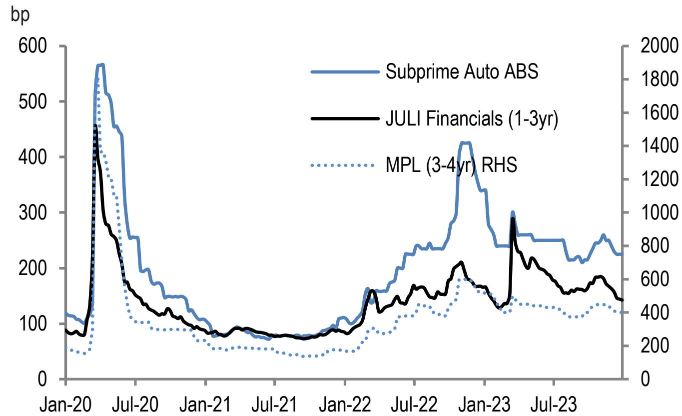
Source: J.P. Morgan. Note: Spreads to LIBOR till June 29, 2023 and to SOFR since then.

Figure 121: AAA cross sector spreads (3-year) to Treasury/SOFR



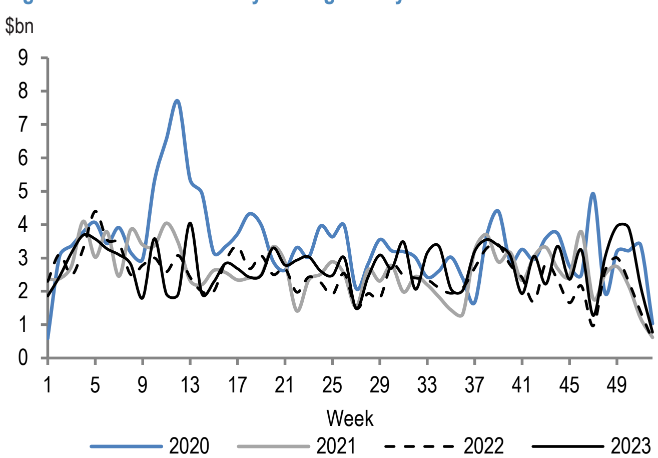
Source: J.P. Morgan. Note: FFELP Student Loan ABS spread to LIBOR till June 29, 2023 an to SOFR since then.

Figure 122: BBB subprime auto ABS (3-year) and MPL unsecured consumer ABS (3-4year) vs. BBB financials to Treasury



Source: J.P. Morgan.

Figure 123: ABS secondary trading weekly TRACE volume



Source: J.P. Morgan, TRACE

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Corporates

- HG bond spreads have widened slightly in the first week of 2024, unwinding some of the 6bp of tightening in December but not the 22bp of tightening in November. The recent weakness is understandable in the face of the very tight level at which spreads ended the year (113bp, 39bp tighter in 2023), the heavy $57bn of supply that came this week, and the increase in geopolitical tensions in the Middle East.
- The dynamic of attractive yields helping to support tight spreads has been evident in the HG market for the past year, but the current level of spreads is still quite tight. Historically, the excess return one earns 12 months forward when investing at these spread levels has been negative. We expect tight spread levels to persist (our YE24 spread forecast is 125bp), but spread volatility is likely to remain high given the tight valuation.
- Turning to supply, the first week of each year is usually heavy. Tight spreads and low(er) yields argue for front loading of supply this year, as does the election in 4Q. The amount of supply that comes from the GSIBs post earnings and the market's absorption of this supply will be an important indicator as to the strength of market technicals in early 2024.
- Finally, regarding rising geopolitical risks, markets have, so far, not been directly impacted. Hopefully, 2024 will bring some resolution to the conflict there and also in Ukraine; so, 2024 may end up being a year where geopolitical risks are lower at YE than at the start of the year. But until then, the risk that the conflicts expand remains an overhang for markets.
- A macro contributor of the YTD widening has been a rethink of Fed expectations, with rate cut odds getting reduced.
- December economic data reports starting with this week's payroll report will be key to market directionality in the coming days. If the December data varies too far from the soft landing narrative on the weak or strong side market impacts are likely to be negative. At the end of next week, 4Q earning season begins. Currently, consensus estimates are that 4Q23 earnings grew 2.4% y/y.

The consensus short is working for now

HG bond spreads have widened slightly in the first week of 2024, unwinding some of the 6bp of tightening in December but not the 22bp of tightening in November. The recent weakness is understandable in the face of the very tight level at which spreads ended the year (113bp, 39bp tighter in 2023), the heavy $57bn of supply that came this week, and the increase in geopolitical tensions in the Middle East.

Starting with valuations, HG spreads have been wider than the current level on 91% of days over the past 10 years. But yields have been lower than the current level 89% of the time over the same 10 years. The dynamic of attractive yields helping to support tight spreads has been evident in the HG market for the past year, but the current level of spreads is still quite tight. Historically, the excess return one earns 12 months forward when investing at these spread levels has been negative. We expect tight spread levels to persist (our YE24 spread forecast is 125bp), but spread volatility is likely to remain high given the tight valuation.

Turning to supply, the first week of each year is usually heavy, and this year is proving to be no exception. This is not surprising to the market and was a key tenet of the prevailing

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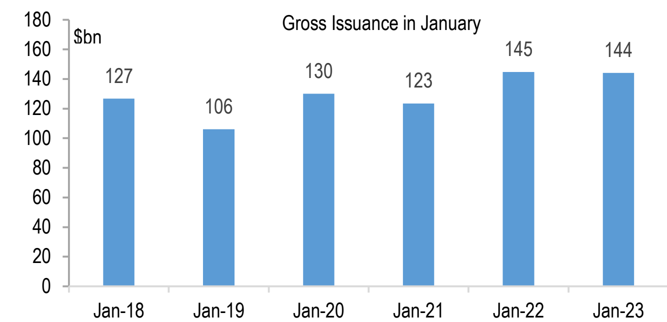
negative view among investors heading into 2024. Supply has averaged $135bn in recent Januarys, and it is too soon to know if this month will differ significantly from this average. Tight spreads and low(er) yields argue for front loading of supply this year, as does the election in 4Q. We expect GSIB supply to be up 20% y/y in 2024, and 4Q bank earning will be reported starting at the end of next week. The amount of supply that comes from the GSIBs post earnings and the market's absorption of this supply will be an important indicator as to the strength of market technicals in early 2024.

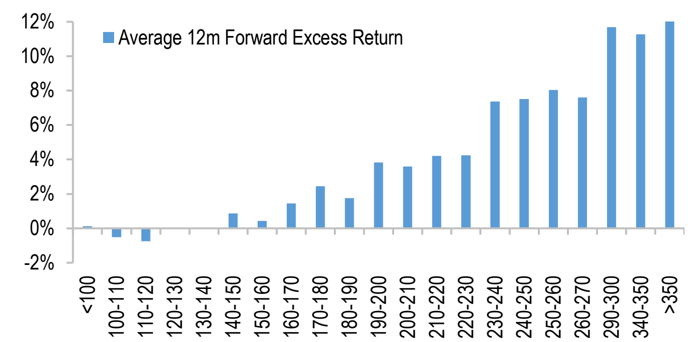
Finally, regarding rising geopolitical risks markets have so far not been directly impacted. Oil prices are up from their low YE levels but are still well below the 4Q average levels. Despite the risks, the war in Israel has not expanded to include other countries, and indications are that this will remain the case. Hopefully, 2024 will bring some resolution to the conflict there and also in Ukraine; so, 2024 may end up being a year where geopolitical risks are lower at YE than at the start of the year. But until then, the risk that the conflicts expand remains an overhang for markets. There is also a pivotal election in Taiwan coming up next week, with potential implications for the broader region. Although Taiwan activity has become less impactful to HG spreads over time, there has been some Asia-based overnight selling to start the year as has been the practice in years past when total returns were positive the year prior.

Figure 124: Supply has averaged $135bn in recent Januarys



Source: J.P. Morgan, Dealogic.

Figure 125: Excess returns earned over next 12m have been negative when investing at spreads as tight as today



Source: J.P. Morgan.

Aside from primary issuance, a macro driver of the YTD widening has been a rethink of Fed expectations, with rate cut odds getting reduced. As early as last month, the market was pricing in rate cuts starting March this year with a probability of over 90%. This has come down to ~60% as expectations are getting pushed out. As such, the yields on our index have risen by 9bp as of Wednesday's close, and returns are already -0.5%.

December economic data reports starting with this week's payroll report will be key to market directionality in the coming days. The consensus is for a continuation of a benign slowing in labor market growth, enough to support lower inflation and not too much to raise recession fears. This has been the read from the economic data over the past few months. Of course, if the December data vary too far from this narrative either on the weak or strong side, market impacts are likely to be negative. At the end of next week 4Q earning season begins. Currently consensus estimates are that 4Q23 earnings grew 2.4% y/y. This consensus is lower than it was one month ago, so the hurdle to outperform expectations is low. 3Q earnings for the S&P were up 4.9% y/y, following three prior quarters when earnings growth was negative.

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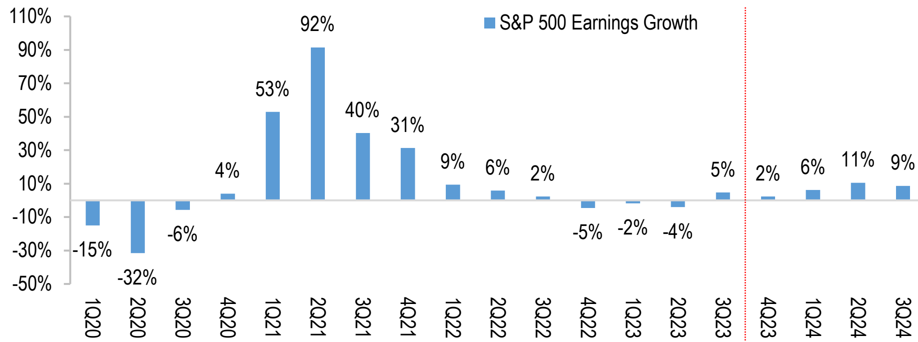
Figure 126: Consensus estimates are that 4Q23 earnings grew 2.4% y/y



Source: J.P. Morgan, FactSet.

2023 Recap: A volatile yet ultimately strong year for HG credit

2023 was a tumultuous yet, ultimately, quite positive year for HG credit. Spreads were wider YTD for 27% of the year as the market digested a series of banking crises (regional + yankee) and worried about a recession, yet spreads ended the year 39bp tighter. This was the largest annual spread tightening since 2019. Similarly, the total return for HG was negative YTD as recently as November 1 yet finished the year up +8.5% for the best year since 2020. That said, this comes after two consecutive years of negative returns such that on a total return basis HG is exactly back to where it was in March 2022 when the Fed began its hiking cycle. Looking forward, spreads are starting 2024 at 113bp, which is just 8bp wide to the post GFC tight reached in September 2021 (105bp). This puts spreads at the 9th percentile over the past five years and the 5th percentile over the past 10 years. Yet yields at 5.16% are still at the 76th and 88th percentiles, respectively, for the last five and 10 years despite the 141bp rally in yields since the peak in late October. A more detailed recap of 2023 for HG credit can be found below:

YEAR END SUMMARY KEY HIGHLIGHTS:

- The JULI spread tightened 39bp last year, which almost exactly offsets the spread widening in 2022. Spreads moved by +34bp, -10bp, 0bp, and -53bp in the prior four years.
- HG bonds returned +8.5% in 2023, reversing about half of the loss in 2022. HG bonds returned -15.4%, -1.1%, +10.0%, and +14.0% in 2022, 2021, 2020, and 2019, respectively.
- Excess return on the index was +5.4% in 2023, -1.7% in 2022, +1.3% in 2021, -0.5% in 2020, and +6.0% in 2019.

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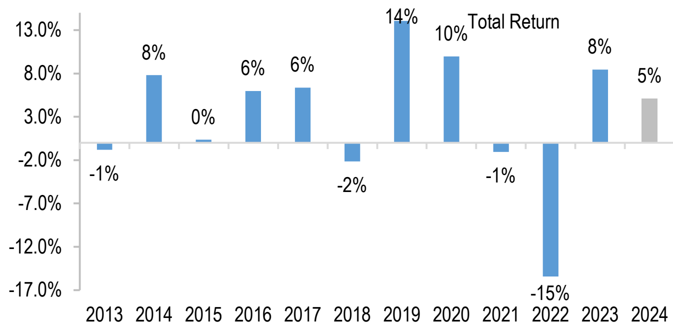
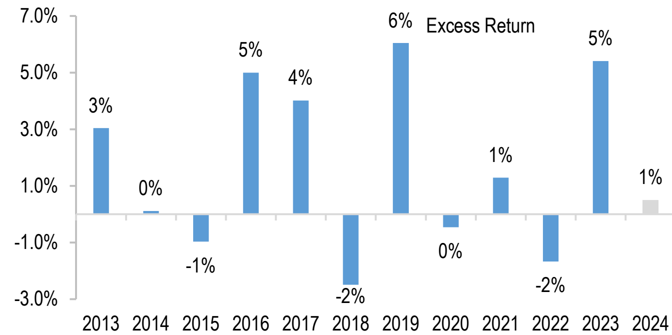
Figure 127: We forecast 5.1% of total return in 2024



Source: J.P. Morgan.

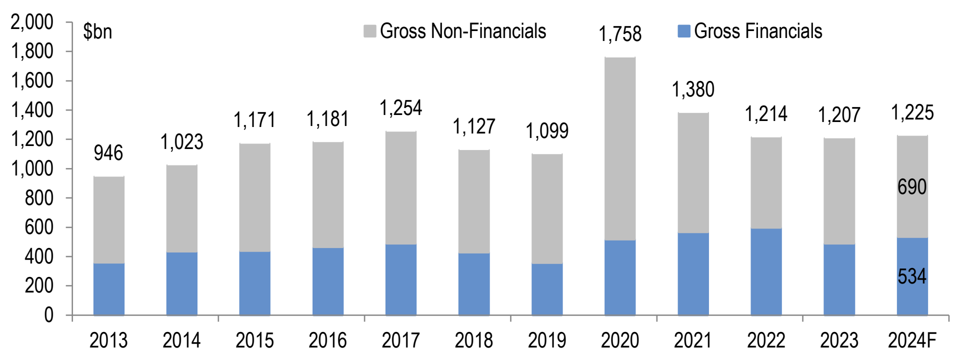
Figure 128: We forecast 0.5% of excess return in 2024



Source: J.P. Morgan.

- Gross issuance was $1.21tr in 2023, $1.22tr in 2022, $1.38tr in 2021, $1.76tr in 2020, and $1.10tr in 2019. Our 2024 forecast is $1.22tr. Non-Financials were more active last year, issuing $719bn and making up 60% of total issuance, the highest share since 2020, while Financial supply was $488bn.

Figure 129: We expect gross supply to be about flat y/y



Source: J.P. Morgan.

- While total issuance in 2023 was comparable to 2022, the tenors issued changed as 3yr and 30yr issuance was down 7% and 17% YoY in 2023, respectively, vs. 2022.
- Yankee Banks ($229bn) led supply in 2023 followed by US Banks ($171bn) and Healthcare ($120bn), while Telecoms ($22bn) and Media/Entertainment ($20bn) issued the least, by sector.
- Green, Social, Sustainability, and Sustainability-linked (GSS) issuance totaled just $33.4bn in 2023, which was down 54% y/y.
- Net issuance in 2023 was $511bn. This was slightly higher than $503bn in 2022 but lower than $805bn in 2021 and $1,006bn in 2020 and up from $407bn in 2019. Our 2024 net issuance forecast is $404bn.
- Maturities in 2023 totaled $696bn. An additional $54bn was tendered. We estimate maturities in 2024 to be $821bn, up 18% y/y.

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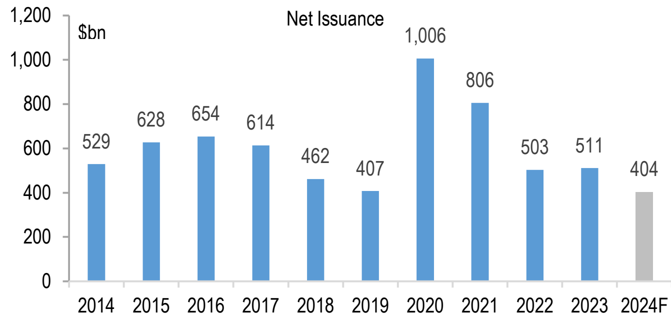
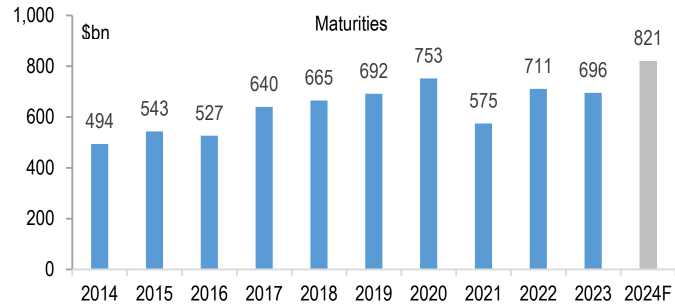
Figure 130: We forecast net issuance in 2024 at $404bn, down 21% y/y



Source: J.P. Morgan; Dealogic

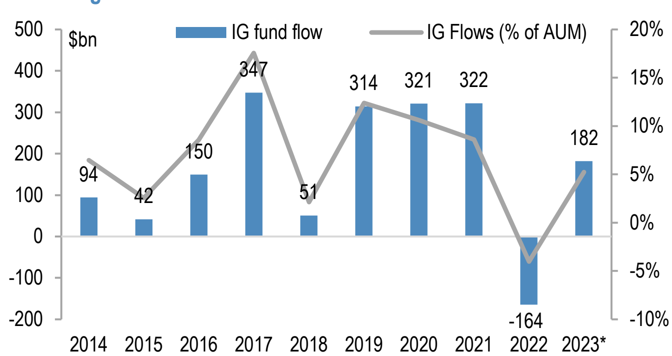
Figure 131: We estimate maturities in 2024 to be $821bn, up 18% y/y



Source: J.P. Morgan; Dealogic

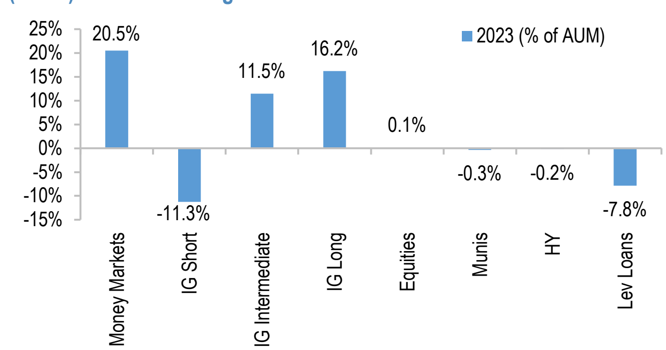
- With the caveat that monthly reporting funds have yet to report December flows, HG bond funds recorded inflows every month except September and October last year for a total of $182bn of inflows. This represents 5.26% of the AUM of the funds at the start of 2023. Assuming positive inflows to monthly reporters in December, inflows in 2023 more than offset the $164bn of outflows in 2022, but over the two years net flows were near zero, which is in contrast to an average inflow of $319bn/year in 2019-2021.
- Mutual Funds (+$96bn) and ETFs (+$86bn) contributed about equally toward total net inflows last year.
- Short-end funds within both the Agg and Corp-only segments recorded a second year of strong outflows (-$97bn) after posting record outflows in 2022 (-$102bn). The intermediate bucket had the majority of the inflows at +$208bn, and +$23bn came into the long end.
- Other large asset classes except Equities (+$16.9bn) posted modest outflows last year: HY (-$631mn), Leveraged Loans (-$10.3bn), Munis (-$2.9bn). Money Markets witnessed record inflows of +$1,194bn, 2.7x the four-year average of +$448bn inflows.
- In 2023, while HG returned +8.5% HY bonds returned +13.8%, the S&P 500 returned +26.3%, EM corporates returned +7.2%, EM sovereigns returned +10.5%, Leveraged Loans returned 13.0%, Munis returned 6.4%, Money Markets 5.1%.

Figure 132: 2023 inflows have offset 2022 outflows but are not back to the strong 2019-2021 trend



Source: J.P. Morgan, EPFR

Figure 133: YTD Flows by Asset Class: Money Markets and HG bonds (ex ST) have had strong inflows



Source: J.P. Morgan, EPFR

- Lower rated bonds outperformed this year. BB bonds outperformed BBB Non-Fins bonds by 35bps in 2023 and ended the year trading around 128bp wide to BBB rated

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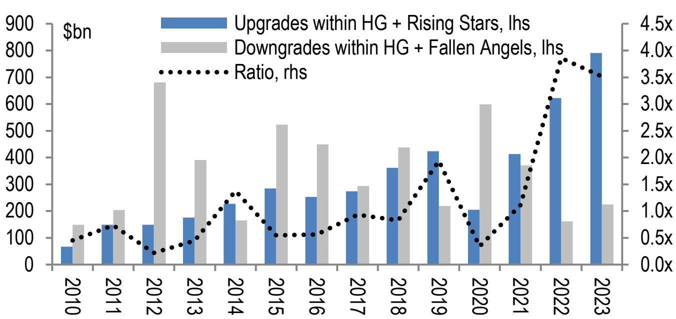
bonds. Similarly, BBB rated bonds outperformed A-rated bonds by 17bp last year, trading around 49bp wide to A-rated bonds versus 65bp at the start of 2023.

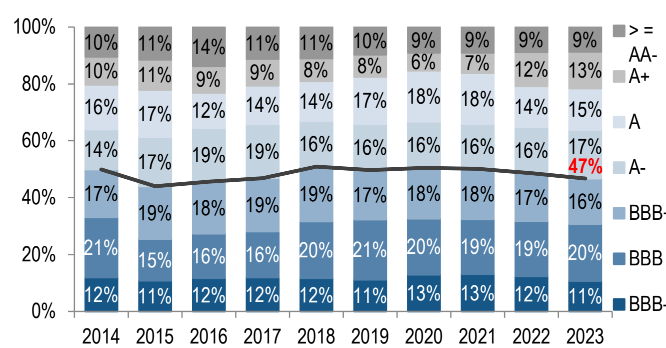
- Financials outperformed by about 3bp versus Non-Financials in 2023. Financials ended the year trading 23bp wide to Non-Financials, duration adjusted. They had started the year 25bp wide to Non-Financials.
- In 2023, the 10s30s Non Financials ex EM spread flattened by 6bp to 22bp. The 2023 range has been 13bp to 32bp, and the curve ended in the middle in this range. The 5s10s spread curve flattened by 10bps to 26bp. The 2023 range has been 23bp to 48bp. The 3s5s spread curve flattened by 18bp to 11bp. The 2023 range has been 11bp to 30bp. The 20s30s spread curve flattened by 2bp to 7.5bp. The 2023 range has been 5bp to 13bp (Table 4).
- The best performing sectors in spread terms were Aviation (-79bp y/y), Diversified Media (-69bp), and Tobacco (-63bp). The sectors that performed the worst were Power Generators (-12bp), Large Cap Pharma (-14bp), and Automotive Finance Cos (-15bp).
- Strong ratings momentum continued in 2023 as upgrades outpaced downgrades by 3.5x. In 2023 $690bn of debt was upgraded within HG alongside $101bn of Rising Stars. This far exceeds the $200bn of debt downgraded within HG and $25bn of Fallen Angels. Last year also saw the upgrade of Ford, which was the largest rising star ever, for the second time having been upgraded once before in 2013.
- Overall, this has resulted in an improved average rating for the HG market. The share of A+ rated bonds in JULI has gone up to 14% from only 6% in 2020 while BBBs are now 47% of the index vs 51% at the recent peak in 2018. The BBB- bucket accounts for only 10.7% of the index, which is the lowest since 2012.

Figure 134: Record upgrade activity in HG but ratio of up/downgrade starting to falter slightly



Source: J.P. Morgan.

Figure 135: Share of BBB debt has decreased to its lowest since YE2015



Source: J.P. Morgan.

- The HG bond market ended 2023 with a par value and market value of $8.1tr and $7.7tr, respectively. These are 4% and 8% higher, respectively, than at the start of the year.
- The average daily trading volume for HG bonds was $28.3bn/day in 2023, and for HY bonds it was $12.6bn/day, per TRACE. This is 12.3% higher for HG and 2% lower for HY vs. last year and thus also a new all-time record high for the HG market (2022 was the year of the prior record high, followed closely by 2020). The par amount of HY bonds outstanding shrunk by 6% in 2023 vs 2022 while HG was up 4% – so trading volume in both markets grew faster than the amount of bonds outstanding.
- $26bn a day traded in December, which was up 19% vs December 2022. Similarly trading volume in 4Q23 of $28bn/day exceeded 4Q22 by 12%.

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- In 2H23 7% of HG bond trading occurred through portfolio trading, per TRACE, and in HY this percent was 4.7% (the TRACE p-trading flag came into effect in May, so this figure from TRACE is not available for the full year).

Figure 136: HG bonds and CDX indices

	Spreads				Yields				Total Return			Excess Return		
	Current	Δ1m	Δ4Q23	Δ2023	Current	Δ1m (bp)	Δ4Q23 (bp)	Δ2023 (bp)	Δ1m	Δ4Q23	2023	Δ1m	Δ4Q23	2023
JULI overall*	113	-6	-21	-39	5.16	-52	-93	-40	4.0%	8.0%	8.5%	0.3%	2.3%	5.4%
Financials (ex EM)	125	-10	-27	-38	5.26	-56	-100	-43	3.3%	6.8%	8.1%	0.5%	2.3%	4.7%
Non-Financials (ex EM)	107	-4	-19	-39	5.11	-50	-90	-39	4.4%	8.7%	8.8%	0.2%	2.5%	5.9%
CDX.IG	56	-7	-19	-35	-		-	-	0.4%	1.0%	2.4%		-	-
CDX.HY	350	-50	-103	-116	-		-	-	2.4%	5.4%	10.0%		-	-

Source: J.P. Morgan. The CDX.IG and CDX.HY levels reflect roll and default adjusted levels and hence might differ significantly from OTR numbers this year due to multiple defaults. As of 12/29/2023

Figure 137: Total returns across asset classes

	Dec'23	4Q23	2023
JULI	4.0%	8.0%	8.5%
JPM Dom HY	3.5%	6.9%	13.8%
EM corporates	2.9%	5.4%	7.2%
EM sovereigns	4.8%	9.3%	10.5%
S&P 500	4.5%	11.7%	26.3%
iBoxx EUR Corp	2.8%	5.6%	8.2%
JPY IG Corp	0.3%	0.7%	1.1%

Source: J.P. Morgan, Bloomberg Finance L.P. As of 12/29/2023

Figure 138: HG performance across the five maturity buckets

	Spreads			Total Return		Excess Return	
	Current	ΔDec'23	Δ2023	ΔDec'23	2023	ΔDec'23	2023
1-3yr	87	-8	-17	1.5%	6.0%	0.2%	2.3%
3-5yr	104	-11	-29	2.6%	7.4%	0.4%	4.0%
5-7yr	110	-11	-35	3.7%	8.6%	0.6%	5.1%
7-10yr	124	-12	-45	4.6%	9.5%	0.8%	6.2%
10+yr	117	-2	-42	7.2%	11.0%	0.0%	9.0%

Source: J.P. Morgan. As of 12/29/2023

Figure 139: Best performing and Worst performing sectors in 2023

Best performing sector	Current	2023
Aviation	135	-79
Diversified Media	151	-69
Tobacco	157	-63
Automotive Manufacturing	168	-62
Building Materials/Construction	114	-60

Worst performing sector	Current	2023
Power Generators	150	-12
Large Cap Pharma	84	-14
Automotive Finance Cos	110	-15
Exploration Production	141	-24
Utility OpCos	115	-25

Source: J.P. Morgan. As of 12/29/2023

Figure 140: Best performing and Worst performing sectors in December

Best performing sector	Current	ΔDec'23
Chemicals	134	-22
REITs	140	-20
Leisure	144	-19
Aviation	135	-16
Yankee Banks	136	-15

Worst performing sector	Current	ΔDec'23
Refiners	132	6
Tobacco	157	4
Large Cap Pharma	84	4
Software/Services	89	2
Cable/Satellite	150	2

Source: J.P. Morgan. As of 12/29/2023

Cross-currency RV vs the Euro market is another factor supporting an active USD issuance calendar near term

Near term, investor focus is on the primary market, as January is typically the second busiest month of the year after March, having averaged $130bn over the past four years (ex-2020). Furthermore, issuance in January is usually skewed toward Financials, and this has become

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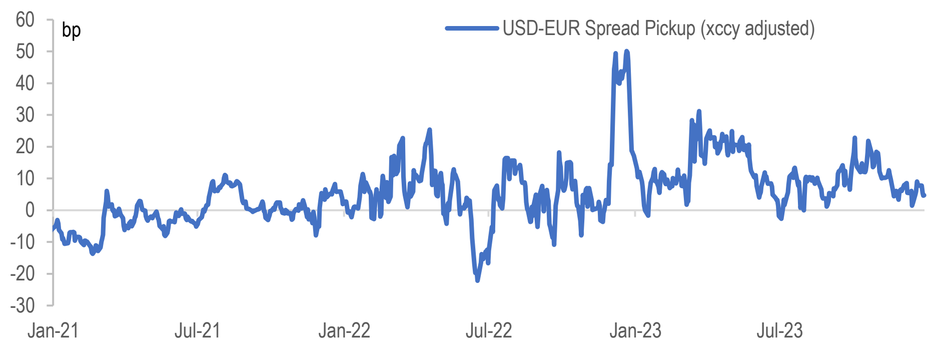
increasingly the case over the last few years; Financials made up ~65% of gross supply on average in January 2023 and 2022 versus 57% over the last 10 years. Given that both rates and spreads are starting the year at attractive levels for issuers relative to recent ranges, we expect the January trend to repeat this year, and indeed yesterday already was the largest issuance day since September 5, 2023, with $29bn issued across 16 issuers. One potential swing factor for January issuance is whether issuers with flexibility to fund in USD versus EUR choose the former over the latter. This is particularly important in January since Yankee issuers made up ~54% of gross Financial supply in January 2023 and 2022. Gross supply in the EUR market has averaged €65bn in January over the past four years (ex-2020), also the second busiest month of the year for that market and Financials made up ~67% of gross EUR supply on average in January 2023 and 2022. Looking at the USD versus EUR spread pickup at the issuer level adjusting for the cross-currency basis shows that USD has been getting less expensive for issuers, with the spread gap narrowing 9bp over the past year to +5bp currently.

Figure 141: USD vs. EUR relative value has narrowed in favor of issuers funding more in USD



Source: J.P. Morgan

This is function of relative credit spread moves in both markets, and in this regard USD has strongly outperformed as of late (-21bp over the last 3m vs -17bp for EUR IG) but also the cross-currency basis swap, which has been moving the other way (e.g., making EUR more favorable for issuers), as shown below. Thus, this becomes more of an issuer level decision whether to fund in USD or EUR this coming January, but the prevailing winds are for more USD issuance overall. To test this assumption, below we show a scatterplot of the relative cheapness of issuing in USD versus EUR (from the chart above) against the difference of EUR Fins issuance less USD Yankee Fins issuance. In the years where issuing in USD was more expensive (the larger numbers on the X-axis), there was an ensuing surplus of EUR issuance relative to USD issuance. Thus, it's fair to conclude that Yankee Fins issuers do indeed take XCCY dynamics heavily into account in deciding which currency to issue in, and right now this math is slightly in favor of USD for many of them.

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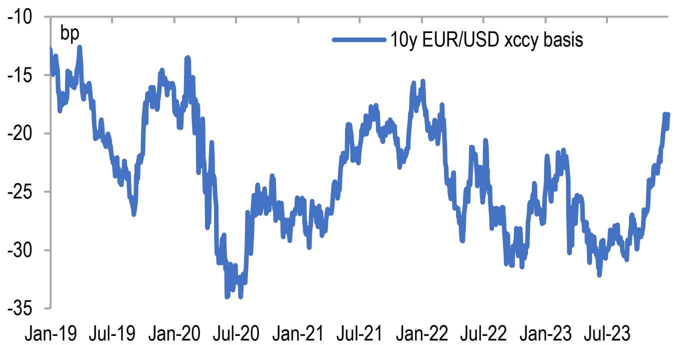
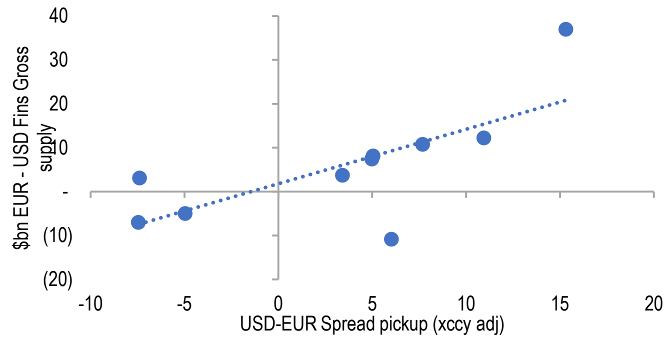
Figure 142: The XCCY basis swap has gone the other way, favoring EUR issuance



Source: J.P. Morgan

Figure 143: When USD spreads are cheaper than EUR as they are now, there has historically been surplus issuance in the USD market over the past 10y



Source: J.P. Morgan

Fed tightening kept USD IG unattractive for most foreign investors in 2023, but the trend is improving

We published HG Credit Foreign Demand Monitor this week:

The JPM Foreign Attractiveness of USD HG Bonds (FAB) index increased by 56bp in 2023 and ended the year at 68bp, which is at the 70th percentile for 2023 but only at the 41st percentile over five years and 27th over the last 10 years. The overall increase last year was due to both higher USD yields and lower hedging costs for EMEA (went from 1st percentile to 43rd percentile in five-year range), counterbalanced by the opposite with higher hedging costs for APAC (went from 1st percentile to 0 in five-year range) and the Americas.

For EUR investors, USD IG Corp at the 10yr point turned more attractive by 114bp last year, offering 94bp of yield pickup versus domestic government bonds currently. Entering 2024, USD IG Corps are more attractive versus EUR IG Corps in the long end but not in the short end.

Within APAC, AUD was the only currency for which the USD IG Corp yield pickup was stable in 2023, while it declined significantly for all others. Specifically for JPY investors the USD IG Corp yield pickup decreased by a significant 138bp last year to a -142bp yield give at the 10y point, a record low in our data series.

Overnight net buying averaged $223mn/day in 2023. Buying was about equally spread out across all tenors but was skewed toward A rated bonds in terms of ratings with 60% of net buying vs. a 45% index weight. Looking forward, we typically see hedging costs unwind their early October spike in early January (GSIB capital rules governed by a year-end snapshot being the catalyst in the background), so this could spur renewed buying shortly.

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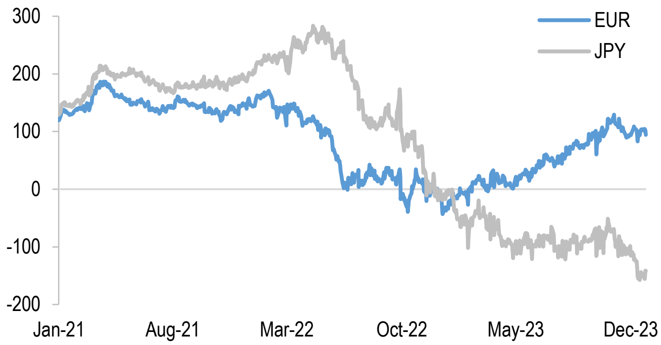
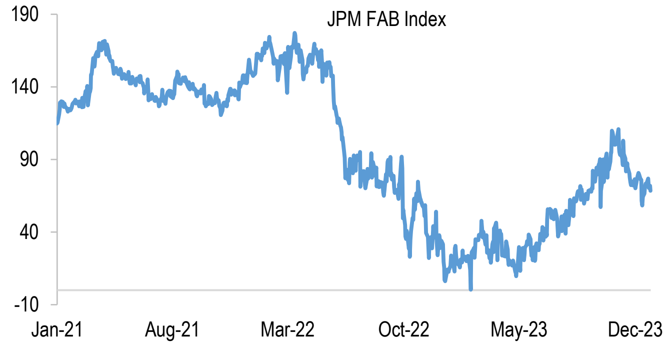
Figure 144: 10y USD IG Corps FX hedged yield pickup



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

Figure 145: JPM Foreign Attractiveness of USD IG Bonds



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

2023 HG ratings review

We published our HG Ratings review: 2023 Recap – Strong positive ratings momentum overall but slower into year-end this week:

Strongly positive ratings momentum continued in 2023 with record upgrades of $791bn (11.1% of the HG market size), while downgrades totaled $225bn (3.1%). Of the $791bn, $690bn (9.6%) were upgrades within HG and $101bn (1.4%) migrated from HY to HG. Conversely, of the $225bn of downgrades, $200bn (2.8%) stayed in HG and just $25bn (0.3%) fell to HY.

The net balance of upgrades to downgrades across HG was +7.9%, a record high. This compares to 6.8% in 2022, 0.7% in 2021, and -6.9% in 2020 . In summary, net upgrades in 2021-2023 were 2.2x the 2020 downgrades.

Total upgrades of $791bn were up 27% YoY while downgrades of $225bn were up 39% YoY. This led to a decline in the ratio of upgrades to downgrades y/y to 3.5x. However, this ratio was well above the past 15 year average of 1.1x.

The strong rating up-trend slowed in 4Q23, with upgrades ($159bn) modestly outpacing downgrades ($123bn), leaving the ratio of upgrades to downgrades at just 1.3x, though there were $8bn of fallen angels vs $45bn of rising stars.

On a net basis, $136bn of HG debt moved up from the BBB to the A rating bucket. Thus, the market is moving up in quality over time with the BBB bucket at 46.8% of our HG index, which is 4% off its peak in 2018 (51%), and the share of the BBB- bucket at 10.7% is the lowest since YE2015. Conversely, the share of A rated debt (44.5%) improved to its highest since YE2015.

Downgrades were more focussed in Non-Financials, while upgrades were higher in Financials compared to their index weight: Financials make up 31% of the HG index while Non-Financials are 69%, yet 78% of the downgrades came from Non-Financials while 37% of upgrades came from Financials.

We forecast $47bn of rising stars in 2024 of which ~$25bn is index eligible debt. If correct this would be the lowest since 2017, when it was $36bn. On the other hand, we estimate Fallen Angels to be ~$30bn next year. This increase is supported by the fact that the portion of BBB- debt with one HY rating, i.e., debt most susceptible to fall to HY, is up 22% y/y.

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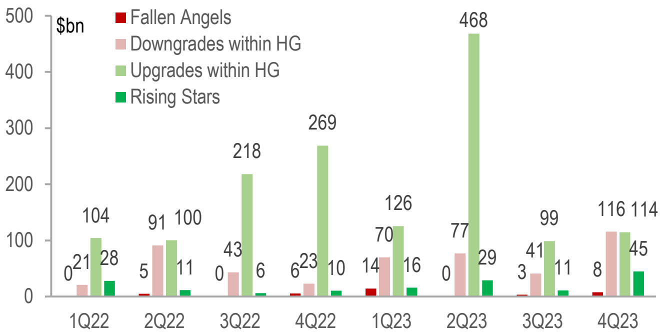
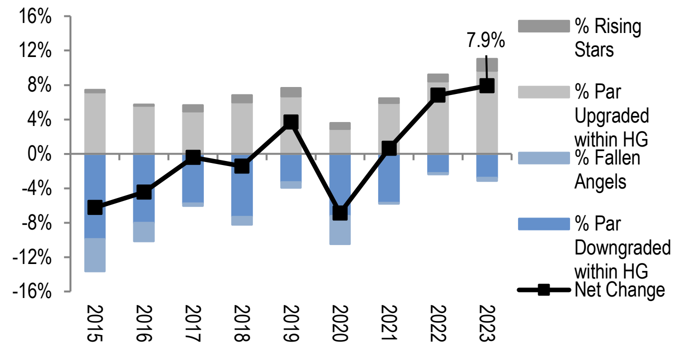
Figure 146: Upgrades exceeded downgrades every quarter over the past 2 years, but the 4Q23 gap was the smallest



Source: J.P. Morgan.

Figure 147: 7.9% of HG debt was upgraded (net of downgrades) in 2023, a record high



Source: J.P. Morgan.

Record quantity of debt was upgraded in 2023, but the ratio of upgrades to downgrades is starting to falter

In 2023 a record $791bn of HG bonds were upgraded, of which $690bn were within HG and $101bn migrated from HY to HG. In percent terms, 11.1% of HG debt was upgraded, of which 9.6% occurred within HG and 1.4% were rising stars. **In 2023 $225bn of HG bonds were downgraded of which $200bn (89%) stayed in HG and just $25bn fell to HY.** In percent terms, 3.1% of HG debt was downgraded, of which 2.8% occurred within HG and just 0.4% fell to High Yield.

On balance, there were net upgrades of $566bn in 2023. In percent terms, 7.9% of debt was net upgraded last year, a record high. This compares to the net rating change of 6.8% in 2021, 0.7% in 2021, -6.9% in 2020, and 3.7% in 2019.

That said, the ratio of upgrades to downgrades within HG at 3.5x in 2023 was down from 3.9x in 2022. Unsurprisingly, given it was a tumultuous year for credit, ratings actions were hefty last year with increases in both total upgrades and downgrades. Total upgrades of $791bn were up 27% YoY, while downgrades of $225bn were up 39% YoY. This led to a decline in the ratio of upgrades to downgrades y/y to 3.5x. However, this ratio is very healthy compared to the the past 15-year average of 1.1x.

The strong ratings up-trend slowed in 4Q23: Total ratings upgrades ($159bn) were barely above downgrades ($123bn). Thus the ratio of upgrades to downgrades was just 1.3x. This is well below the 3Q23 ratio of 2.5x and the 2Q23 ratio of 6.5x. The downward ratings migration activity was concentrated almost entirely in the month of December, while the upgrades within HG occurred throughout the quarter.

Upgrades from BBB to A along with higher quality issuance has reduced the BBB share of the index, with the BBB- share at an eight-year low. Of the $690bn of debt that was upgraded in HG, $169bn moved from the BBB to the A bucket, i.e., about 24% of the debt moved up a full rating bucket. Similarly, of the $200bn of downgrades only $33bn (or 16%) moved from A to the BBB bucket. Net net, $136bn of HG debt moved up in terms of rating bucket. To put it into context, this coupled with increased share of issuance from A or higher rated bucket has led to a decline in the BBB debt share of the HG market. The BBB rated bucket now makes up 46.8% of our HG corporate bond index, which is 4% off the peak in 2018 (51%). Furthermore, the share of the BBB- bucket at 10.7% is the lowest since YE2015. On the other hand, the share of A rated debt (44.5%) improved to its highest since YE2015.

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Downgrades were focussed in Non-Financials while upgrades were higher in Financials, as compared to their relative weights in the index. Financials make up 31% of the HG index while Non-Financials are 69%. Considering just HG debt, $441bn of Non-Financial HG bonds were upgraded while $155bn were downgraded. This compares to $249bn of Financial HG bonds that were upgraded while just $45bn were downgraded. This implies that 78% of the downgrades came from Non-Financials while 37% of upgrades came from Financials.

At the issuer level in 2023, the three largest issuers making up 34% of the upgrades were Bank of America ($178bn), ABIBB ($52bn), and General Motors ($44bn), while the three largest issuers making up 42% of the downgrades were Pfizer ($58bn), Intel ($36bn), and 3M Co ($33bn).

Rising stars continue to burn brighter than fallen angels, but this may reverse in 2024

Both Rising Stars and Fallen Angels activity rose in 2023,with Rising Stars 4x Fallen Angels. The 2023 sum of Rising Stars at $101bn is the largest ever as Ford Motor ($46bn; $40.7bn index eligible) was the largest Rising Star ever, making about 40% of the total followed by Occidental Petroleum Corp ($13bn) and Nissan Motor Acceptance Co ($10bn), which was upgraded by Fitch in April after being downgraded by S&P in March (Figure 5). On the other hand, the 2023 tally for Fallen Angels is $25.3bn, which is the index eligible portion of the $41bn total (Figure 4). The two major issuers that fell to HY were Nissan Motor Acceptance Co ($9.8bn) in March and Walgreens Boots Alliance Inc ($4.2bn) in December. 4Q23 saw an uptick in rising stars with $45bn migrating to HG while there were $8bn of fallen angels last quarter.

Looking to 2024, we expect this trend to reverse and forecast $30bn of Fallen Angels while forecasting $25bn of Rising Stars (of total $47bn). In conjunction with our JPM credit research team, we identify 11 issuers with ~$50bn of debt based on their ratings in the universe of potential Fallen Angels. We do not expect all of these to be downgraded to HY, and thus we estimate that ~$30bn of this debt will join the ranks of Fallen Angels next year. On the other hand, 19 issuers with $47bn of total debt (of which $25bn is index eligible) is likely to be upgraded from HY to HG through 2024. Furthermore, there are another six issuers that we expect to be upgraded to HG in 2025 totaling $2bn of index eligible debt. At the industry level the largest driver of our Rising Star forecast is Energy ($14bn), which is ~57% of our $25bn forecast, while Fallen Angels may come from Basic Industries ($19bn) in 2024. Also notable is that PARA in Diversified Media makes up ~$14bn of the debt on our radar for a downgrade.

Separately, we also review the potential Fallen Angel pipeline, i.e., debt in JULI at the most risk to further fall to HY, using the BBB- universe: At the end of 2023, there was $803bn of BBB- rated debt, down 10% since YE22 from $889bn (Figure 29). 23% of this BBB- debt is one rating notch away from falling to HY, i.e., $181bn of BBB- debt already has one HY rating. This figure was $148bn at YE22 and $111bn at YE21. On the other hand, BBB- debt with no HY rating but a negative rating outlook from at least one of the three rating agencies stands at $67bn (vs. $90bn at YE22). The biggest contributor to this decline is the stable outlook for Boeing (Capital Goods), which had a negative outlook for the last 14 quarters. In 3Q23, S&P changed its rating outlook for BA to Stable while Fitch put it on Positive outlook. Thus while the BBB- universe has declined, the portion of this debt most susceptible to fall to HY (i.e., has one HY rating already) is up 22% y/y.

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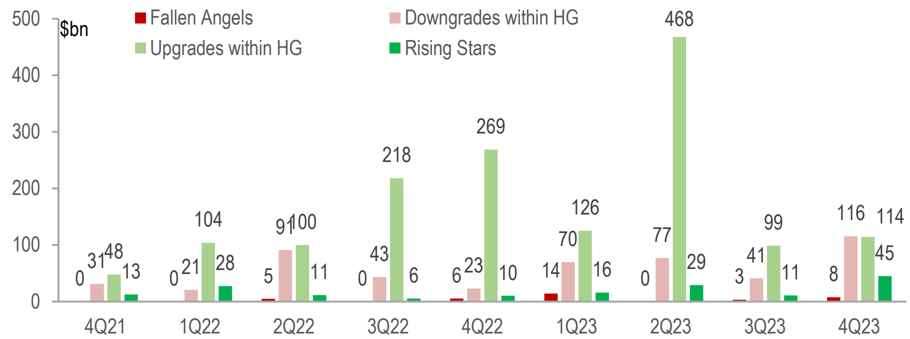
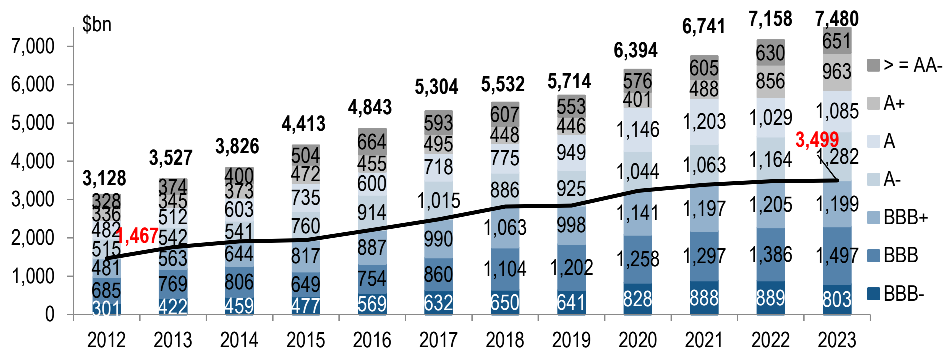
Figure 148: Upgrades exceeded downgrades every quarter over the past 2 years, but the 4Q23 gap was the smallest



Source: J.P. Morgan.

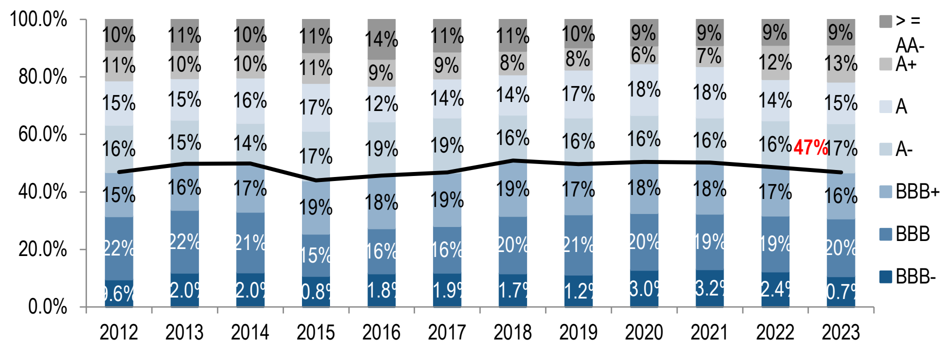
HG bond market rating distribution

Figure 149: IG credit market distribution by rating ex-EM, $bn



Source: J.P. Morgan, ex-EM issuers.

Figure 150: IG credit market distribution by rating ex-EM, %



Source: J.P. Morgan, ex-EM issuers.

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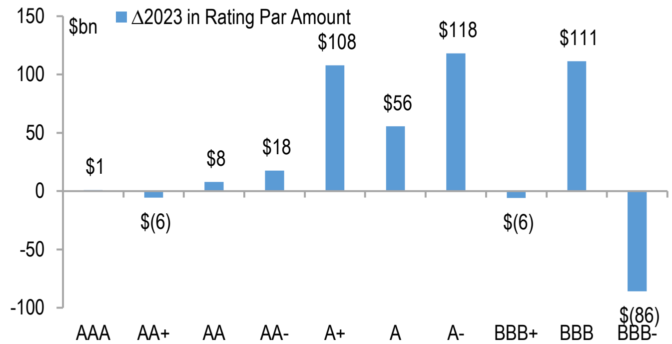
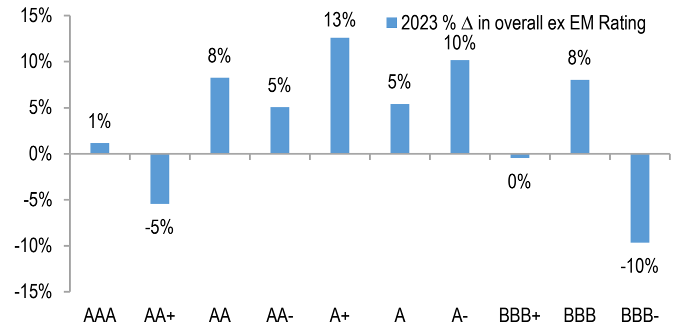
Figure 151: Y/Y change in overall HG market size by rating $bn



Source: J.P. Morgan.

Figure 152: Y/Y change in overall HG market size by rating %



Source: J.P. Morgan.

HG credit rating migration

Figure 153: Rating migration of HG index debt, $bn

Rating at the start of the year	Rating today										
2023	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	HY
AAA	75,147	0	0	0	0	0	0	0	0	0	0
AA+	0	89,750	0	0	0	0	0	0	0	0	0
AA	0	0	84,992	0	0	0	0	0	0	0	0
AA-	0	0	0	296,772	322	0	0	0	0	0	0
A+	0	0	0	10,786	600,580	98,432	0	10,230	0	0	0
A	0	0	0	0	170,168	716,775	17,501	0	0	0	0
A-	0	0	0	0	6,729	58,003	926,688	22,617	0	0	0
BBB+	0	0	0	0	0	0	146,413	879,873	24,150	8,750	0
BBB	0	0	0	0	0	0	22,250	103,594	1,069,249	17,931	0
BBB-	0	0	0	0	0	0	0	0	172,448	586,087	25,195
HY	0	0	0	0	0	0	0	0	0	100,732	-
NR	8,806	7,000	18,550	58,750	185,571	211,786	169,100	193,748	220,314	189,979	0

Source: J.P. Morgan.

Figure 154: Rating migration of HG index debt, %

Rating at the start of the year	Rating today										
2023	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	HY
AAA	1.0%	-	-	-	-	-	-	-	-	-	-
AA+	-	1.2%	-	-	-	-	-	-	-	-	-
AA	-	-	1.1%	-	-	-	-	-	-	-	-
AA-	-	-	-	4.0%	0.0%	-	-	-	-	-	-
A+	-	-	-	0.1%	8.0%	1.3%	-	0.1%	-	-	-
A	-	-	-	-	2.3%	9.6%	0.2%	-	-	-	-
A-	-	-	-	-	0.1%	0.8%	12.3%	0.3%	-	-	-
BBB+	-	-	-	-	-	-	2.0%	11.7%	0.3%	0.1%	-
BBB	-	-	-	-	-	-	0.3%	1.4%	14.2%	0.2%	-
BBB-	-	-	-	-	-	-	-	-	2.3%	7.8%	0.3%
HY	-	-	-	-	-	-	-	-	-	1.3%	-
NR	0.1%	0.1%	0.2%	0.8%	2.5%	2.8%	2.3%	2.6%	2.9%	2.5%	-

Source: J.P. Morgan.

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Figure 155: Rating migration of Non-Fins HG index debt, $bn

Rating at the start of the year	Rating today										
2023	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	HY
AAA	66,197	0	0	0	0	0	0	0	0	0	0
AA+	0	79,500	0	0	0	0	0	0	0	0	0
AA	0	0	53,846	0	0	0	0	0	0	0	0
AA-	0	0	0	199,572	0	0	0	0	0	0	0
A+	0	0	0	10,786	197,059	84,582	0	10,230	0	0	0
A	0	0	0	0	27,882	501,757	10,525	0	0	0	0
A-	0	0	0	0	0	40,728	460,212	9,413	0	0	0
BBB+	0	0	0	0	0	0	133,315	703,790	15,000	8,750	0
BBB	0	0	0	0	0	0	0	64,744	957,961	16,731	0
BBB-	0	0	0	0	0	0	0	0	164,038	514,187	21,095
HY	0	0	0	0	0	0	0	0	0	99,982	-
NR	3,401	4,250	10,600	13,600	65,451	160,761	75,857	126,167	187,614	176,289	0

Source: J.P. Morgan.

Figure 156: Net rating change across HG sectors since 2011

	Net Rating Change ($bn)												
Sectors	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Automotive	-2	6	2	23	-6	26	21	2	-41	-109	11	2	92
US Banks	-110	-313	-171	0	100	1	59	94	119	61	116	205	118
Yankee Banks	-27	-152	-19	-33	-79	2	-83	43	10	-30	-22	-7	83
Basic Industries	17	1	-14	8	-37	-41	26	16	16	-9	12	40	11
Capital Goods	6	-4	-4	2	-33	22	-50	-69	8	-24	5	16	12
Consumer	9	24	-2	39	-12	-10	29	-58	3	-44	2	24	84
Diversified	1	1	0	0	0	0	0	0	0	-2	0	0	1
Energy	-3	18	-2	2	-117	-186	10	59	37	-73	-66	39	68
Finance Companies	-1	-67	-7	4	7	0	10	5	41	-15	22	13	6
Healthcare/Pharma	10	-13	-35	-11	0	-28	-25	-45	43	2	31	123	66
Insurance	-13	6	13	2	9	14	1	5	9	-4	1	35	-7
Media Entertainment	23	1	24	-4	-14	-11	0	-4	9	-24	0	1	-12
Property/Real Estate	2	1	24	5	5	8	3	10	8	-25	-3	2	-2
Retail	7	-5	15	-2	-5	-7	-8	-19	-2	-6	-1	-1	-2
Technology	-1	8	7	5	-20	-11	-22	-14	2	-40	-25	-53	4
Telecoms	19	-14	-57	-21	-43	-1	-4	-83	-16	-11	0	11	44
Transportation	-1	1	-1	18	0	21	0	-3	-13	-21	15	11	17
Utilities	8	-32	12	25	7	5	15	-14	-29	-20	-55	2	-18
Overall US HG Market	-55	-532	-216	62	-238	-197	-20	-76	205	-394	43	461	566

Source: J.P. Morgan, Bloomberg Finance L.P., Moody's, S&P, and Fitch, as of Dec 29, 2023; Note: ex-EM issuers.

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Figure 157: Rating upgrades within HG across sectors, Par Amt ($bn)

Upgrades within HG	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Automotive	1	8	1	27	1	28	26	0	0	2	11	2	51
US Banks	1	0	4	4	140	7	65	94	128	64	117	204	151
Yankee Banks	1	3	1	19	5	40	12	63	18	17	57	37	83
Basic Industries	18	17	3	15	4	4	28	13	14	6	6	39	10
Capital Goods	6	3	0	2	1	39	1	0	24	0	14	15	23
Consumer	13	25	5	47	37	25	37	6	14	0	3	11	92
Diversified	1	1	0	0	0	0	0	0	0	0	0	0	1
Energy	5	20	21	20	9	4	14	53	60	25	5	37	50
Finance Companies	0	9	2	4	7	3	10	6	25	1	23	15	9
Healthcare/Pharmaceuticals	19	3	5	11	28	4	4	23	34	36	55	111	93
Insurance	6	6	16	5	9	12	4	10	8	1	1	36	6
Media/Entertainment	22	1	33	0	0	1	0	0	9	0	0	1	2
Property/Real Estate	2	1	24	5	4	15	3	9	9	0	1	5	10
Retail	11	1	16	6	4	3	1	1	1	3	2	0	6
Technology	0	28	7	5	0	1	4	16	1	8	61	15	35
Telecoms	19	0	2	0	2	5	0	0	1	1	0	15	40
Transportation	0	10	0	18	1	25	0	9	2	0	20	13	24
Utilities	15	6	20	26	23	31	31	16	21	4	5	14	4
Overall US HG Market	**140**	**140**	**162**	**214**	**273**	**246**	**238**	**318**	**370**	**166**	**379**	**567**	**690**

Source: J.P. Morgan, Bloomberg Finance L.P., Moody's, S&P, and Fitch, as of Dec 29, 2023; Note: ex-EM issuers.

Figure 158: Rating downgrades within HG across sectors, Par Amt ($bn)

Downgrades within HG	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Automotive	-3	0	-1	-3	-7	0	-7	0	-45	-73	-1	0	0
US Banks	-111	-313	-174	-4	-40	-6	-7	0	-10	-9	-1	0	-28
Yankee Banks	-27	-154	-15	-43	-51	-14	-93	-22	-4	-45	-79	-45	0
Basic Industries	0	-5	-21	-3	-31	-18	-5	-2	0	-17	-1	-4	-1
Capital Goods	0	-7	-4	0	-32	-15	-54	-69	-15	-18	-10	0	-14
Consumer	-2	-2	-5	-7	-42	-34	-8	-65	-8	-14	-1	0	-9
Diversified	0	0	0	0	0	0	0	0	0	-2	0	0	0
Energy	-9	-4	-24	-23	-51	-167	-18	0	-28	-31	-86	-5	-6
Finance Companies	-2	-75	-9	0	0	-3	0	-4	-2	-11	-1	-2	-4
Healthcare/Pharmaceuticals	-8	-16	-39	-23	-29	-33	-32	-49	-5	-46	-21	-6	-27
Insurance	-20	0	-3	-1	0	0	-3	-4	-1	-5	0	-1	-13
Media/Entertainment	0	0	-9	-4	-17	-12	0	-4	0	-24	0	0	-14
Property/Real Estate	0	-1	0	0	0	-7	0	0	-1	-17	-6	-1	-10
Retail	-4	-6	-2	-6	-9	-8	-9	-18	-2	-2	-3	0	-2
Technology	-2	-18	0	0	-17	-9	-25	-32	0	-45	-90	-68	-38
Telecoms	0	-13	-44	-15	-43	0	0	-74	-16	-11	0	-2	-7
Transportation	-1	-9	0	0	0	-4	0	-14	-15	-17	-5	-2	-6
Utilities	-5	-35	-9	0	-10	-25	-17	-31	-31	-23	-61	-14	-22
Overall US HG Market	**-194**	**-658**	**-358**	**-132**	**-378**	**-354**	**-279**	**-388**	**-183**	**-412**	**-364**	**-151**	**-200**

Source: J.P. Morgan, Bloomberg Finance L.P., Moody's, S&P, and Fitch, as of Dec 29, 2023; Note: ex-EM issuers.

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Figure 159: Rising Stars – rating upgrades from HY to IG across sectors, Par Amt ($bn)

Rising Stars	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Automotive	0	0	1	0	2	0	3	2	4	0	1	0	51
US Banks	0	0	0	0	0	0	1	0	0	7	0	2	0
Yankee Banks	0	0	0	0	0	0	0	8	0	0	0	2	0
Basic Industries	3	2	7	1	1	1	5	6	3	6	7	5	1
Capital Goods	0	1	0	0	0	0	3	1	0	1	1	1	4
Consumer	2	1	2	1	1	0	1	6	4	0	0	17	0
Diversified	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy	2	4	0	6	4	1	18	10	9	0	16	7	24
Finance Companies	0	0	0	0	0	0	0	3	18	0	0	0	1
Healthcare/Pharmaceuticals	0	0	0	1	0	0	3	0	14	13	0	18	0
Insurance	1	0	0	2	0	1	0	0	1	1	0	0	0
Media/Entertainment	1	0	0	0	2	0	0	0	0	0	0	0	0
Property/Real Estate	0	1	0	0	1	0	0	0	0	0	2	1	0
Retail	0	0	1	1	0	0	0	0	1	1	3	0	0
Technology	0	0	0	0	0	0	1	4	1	2	4	1	10
Telecoms	0	0	2	0	0	2	0	0	0	0	0	0	10
Transportation	0	0	0	0	0	0	0	2	0	0	0	0	0
Utilities	0	0	2	1	0	0	1	2	0	9	1	2	0
Overall US HG Market	**9**	**9**	**14**	**14**	**11**	**7**	**36**	**45**	**54**	**39**	**34**	**55**	**101**

Source: J.P. Morgan, Bloomberg Finance L.P., Moody's, S&P, and Fitch, as of Dec 29, 2023; Note: ex-EM issuers.

Figure 160: Fallen Angels – rating downgrades to HY from IG across sectors, Par Amt ($bn)

Fallen Angels	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Automotive	0	-1	0	0	-2	-2	-1	0	0	-37	0	0	-10
US Banks	0	0	-1	0	0	0	0	0	0	0	0	0	-4
Yankee Banks	-1	-1	-5	-9	-33	-24	-1	-5	-4	-2	0	0	0
Basic Industries	-4	-13	-3	-5	-11	-27	-1	0	-1	-5	0	0	0
Capital Goods	0	0	-1	0	-2	-3	0	-2	0	-7	-1	0	0
Consumer	-3	0	-3	-1	-8	-1	-1	-5	-6	-30	0	-4	0
Diversified	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy	0	-1	0	-2	-79	-24	-4	-4	-4	-67	0	0	0
Finance Companies	0	0	0	0	0	0	0	0	0	-5	0	0	0
Healthcare/Pharmaceuticals	0	0	-1	0	0	0	0	-19	0	0	-2	0	0
Insurance	0	0	0	-4	0	0	0	-1	0	0	0	0	0
Media/Entertainment	0	0	0	0	0	0	0	-1	0	0	0	0	0
Property/Real Estate	0	0	0	0	0	0	0	0	0	-7	0	-2	-2
Retail	0	0	0	-3	0	-2	0	-2	-2	-8	-3	-1	-6
Technology	0	-2	0	0	-3	-3	-2	-2	0	-5	-1	-1	-2
Telecoms	0	-2	-17	-6	-1	-8	-4	-9	0	0	0	-2	0
Transportation	0	0	-1	0	0	0	0	0	0	-4	0	0	0
Utilities	-2	-3	0	-2	-6	-1	0	0	-19	-9	0	0	0
Overall US HG Market	**-10**	**-22**	**-33**	**-33**	**-144**	**-95**	**-15**	**-50**	**-36**	**-186**	**-7**	**-10**	**-25**

Source: J.P. Morgan, Bloomberg Finance L.P., Moody's, S&P, and Fitch, as of Dec 29, 2023; Note: ex-EM issuers.

This report was excerpted from Credit Market Outlook & Strategy: The consensus short is working now , Eric Beinstein, January 5, 2023.

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High Yield

- **High-yield bond yields retraced approximately 20% of their significant decline in November and December over the past week, whereas leveraged loan prices rose modestly to a high since May 2022.** When we published our outlook in November, we established a forecast for moderately wider credit spreads and strong returns in 2024. While retaining our 475bp and 550bp YE24 HY bond and loan spread forecasts, the last 6 weeks of 2023's repricing pulled forward a portion of 2024's forecasted gains. **Our full-year 2024 high-yield bond and leveraged loan total return forecasts decline to 6% (from 11%) and 7% (from 9%), respectively.** We believe resilient growth, progress on disinflation, improving capital market conditions, and the upcoming earnings season will support current valuations through at least 1Q. The ingredients for wider spreads over the next twelve months include our baseline assumption for softer realized growth (JPM forecasting 1.25% 1Q, 0.5% 2Q, 0.5% 3Q, and 0.75% 4Q) and lower rates (5yr 3.35%).
- We published our Default Monitor for December. **Default activity totaling $1.0bn in December was the lightest since October 2022.** As well, the number of distressed transactions (2) outpaced actual defaults (1) for the seventh time in the last eight months. In full-year 2023, 41 companies defaulted totaling $58.3bn in bonds ($27.5bn) and loans ($30.7bn), and 47 companies completed a distressed exchange totaling $25.4bn in bonds ($10.1bn) and loans ($15.3bn). **Default/distressed volume slowed as 2023 progressed with $55.2bn of volume in 1H falling to only $28.4bn in 2H. Including distressed exchanges, the par-weighted US high-yield bond and loan default rates ended 2023 at 2.84% and 3.15%, respectively, up from 1.65% apiece at YE22.** We forecast high-yield bond and leveraged loan default rates in 2024 of 2.75% (HY) and 3.25% (LL), respectively, which we expect to rise in 2025 to 3.00% and 3.75%.
- We recently published 3Q23 Leveraged Loan Credit Fundamentals **which expanded to 716 US loan borrowers**, 428 of which are private companies. Balance sheets for most US leveraged loan issuers are in a good position heading into a more challenging fundamental landscape. That said, a review of 3Q23 credit metrics unveiled signs of further deterioration. As well, there is a stark difference when looking at the public cohort of loan borrowers versus private. The most notable observations include revenues and EBITDA expanding on a yoy basis by the slowest rate in 10 quarters. As well, **interest coverage for loan issuers is a 11-quarter low 3.20x, with coverage for the public cohort more than twice that for private companies (4.37x vs 2.08x).** And while only 9% of borrowers have a coverage ratio below 1x, a fresh high 37% of borrowers have a ratio between 1-2x. **Meanwhile, leverage for loan issuers decreased to 4.88x (versus 3.96x for HY companies), a post pandemic low** and versus as high as 7.71x in 1Q21. And with public company leverage 44% off the peak (vs -12% for private), **leverage for public loan borrowers of 4.48x is comfortably below 5.69x for privates.** Leverage for BB-rated borrowers is 4.35x, B1/B2 is 5.60x, B3 is 6.93x, and CCC is 6.46x.

Credit Strategy Weekly Update

High-yield bond yields retraced approximately 20% of their significant decline in November and December over the past week as investors began to question the extent of Fed easing, which was aggressively priced in into year-end. HY mutual funds also reported their first withdrawal in nine weeks following an eight-week stretch encompassing $15.2bn

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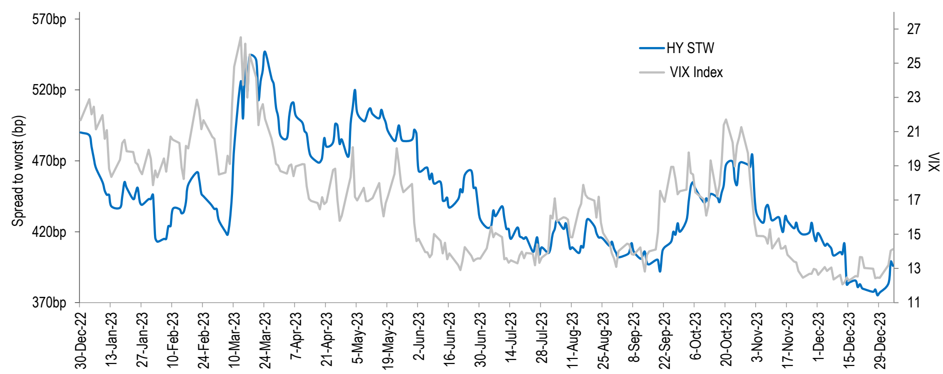
of inflows. The S&P 500 has started off 2024 down -2.2% after rallying 14.1% in 2023's final 2 months, whereas 10yr Treasury yields are 28bp off the late December low after sliding 120bp into year-end. **High-yield bond yields and spreads increased 30bp and 19bp in the first week of 2024 to 8.12% and 396bp, which followed declines of 122bp and 113bp in full-year 2023, respectively.** Notably, the 179bp decline in yields in November and December was the sharpest repricing lower of high-yield debt yields since May 2020. **Yields and spreads are now 32bp and 21bp off their late December lows since August 2022 and April 2022, respectively, with spreads comparable to a post pandemic low of 339bp in July 2021.** By rating, BB yields are now 6.66% (+26bp w/w, -80bp 2023), B yields are 8.04% (+32bp w/w, -159bp 2023), and CCC yields are 13.25% (+46bp w/w, -222bp 2023). And BB, B and CCC spreads of 253bp (+14bp w/w, -74bp 2023), 388bp (+21bp w/w, -154bp 2023), and 905bp (+33bp w/w, -216bp 2023) are 22%, 22% and 6% below their long-term non-recessionary averages. HY/IG spreads of 287bp (+15bp w/w, -81bp 2023) are 17bp above the recent low and are 27bp below their 12M average. Meanwhile, BBB/BB spreads of 120bp (+11bp w/w, -34bp 2023) are 11bp below the 12M average and are 14bp above their low since 10/28/22. **The HY index is providing a -0.99% loss in the first few days of January, which compares to a 3.63% gain in December and a 3.87% gain in January 2023. This has included mild decompression, with BBs (-0.95%) outperforming Bs (-0.99%) and CCCs (-1.30%).**

High-yield bond yields and spreads are now 32bp and 21bp off their late December lows since August 2022 and April 2022, respectively



Source: J.P. Morgan.

The HY index provided a +3.63% gain in Decemberm with CCCs (+5.50%) outperforming B (+3.57%) and BB bonds (+3.14%). Notably, CCCs outperformed by the most since February after underperforming the prior two months. And notable outperformers in December included Telecom (+6.93%) and Cable/Sat (+5.20%). HY bonds also posted their second strongest two-month returns since Apr-16. **The HY index provided gains totaling +13.51% in 2023, with CCCs (+19.86%) outperforming Single B rated bonds (+13.85%) and BB bonds (+11.82%).** These were the strongest gains for high-yield bonds since 2019's 14.1% gain and included outperformance down in credit quality following 2022's decompression. **HY bonds also narrowly outperformed loans by 35bp after underperforming by 1068bp in 2022.** The largest underperformers in 2023 were Metals/Mining (+9.64%), Telecom (+10.28%) and Media (+11.26%); the largest outperformers were Housing (+17.31%), Automotive (+17.07%), and Gaming/Leisure (+16.82%). Lastly, high-yield issuance totaled $13.4bn (or $2.4bn ex-refi) in December following $19.4bn in November. High-yield issuance totaled $176.1bn in 2023 (or $59.5bn ex-refinancing), which compares to $106.5bn (or $56.1bn ex-refi) in 2022. **Meanwhile, 2024 saw its first**

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two bonds price this week, bringing January's issuance to $750mn.

Spreads across the credit spectrum widened off a 52-week low this week

	HY	LL	IG	BBB	HY BB	HY B	HY CCC	LL BB	LL B1/B2	LL B3	LL CCC	HY/LL	HY/IG	BB/BBB	HY BB/LL BB	HY B/LL B1/B2	HY B/LL B3	HY CCC/LL CCC
Current	396bp	499bp	109bp	133bp	253bp	388bp	905bp	295bp	437bp	650bp	1364bp	-103bp	287bp	120bp	-42bp	-50bp	-262bp	-458bp
2023 High	547bp	590bp	166bp	199bp	375bp	577bp	1143bp	341bp	560bp	854bp	1690bp	-29bp	391bp	179bp	42bp	32bp	-234bp	-389bp
2023 Low	375bp	500bp	104bp	130bp	237bp	365bp	840bp	293bp	440bp	648bp	1280bp	-126bp	270bp	106bp	-63bp	-79bp	-358bp	-663bp
1 Yr Average	445bp	537bp	131bp	160bp	292bp	458bp	958bp	313bp	492bp	762bp	1446bp	-92bp	314bp	131bp	-21bp	-34bp	-304bp	-488bp
5 Yr Average	460bp	493bp	128bp	160bp	312bp	480bp	918bp	313bp	472bp	665bp	1269bp	-33bp	332bp	152bp	-1bp	8bp	-185bp	-351bp
10 Yr Average	464bp	466bp	128bp	161bp	308bp	466bp	886bp	316bp	457bp	678bp	1283bp	-2bp	336bp	146bp	-8bp	9bp	-212bp	-397bp
15 Yr Average	544bp	519bp	153bp	191bp	363bp	530bp	959bp	351bp	513bp	735bp	1286bp	25bp	391bp	171bp	12bp	17bp	-205bp	-327bp
US Recession Average	971bp	805bp	252bp	413bp	568bp	901bp	1977bp	554bp	859bp	1145bp	1605bp	234bp	697bp	258bp	116bp	94bp	-191bp	37bp
US Non Recession Average	501bp	474bp	117bp	172bp	322bp	499bp	965bp	325bp	466bp	658bp	1175bp	17bp	354bp	158bp	3bp	18bp	-173bp	-306bp

Source: J.P. Morgan.

Leveraged loan prices rose modestly over the past week to a high since May 2022 despite consolidation across other products. **For context, the Leveraged Loan index is providing a mild +0.21% gain in the first few days of January versus -1.04% and -0.99% declines for investment-grade and high-yield bonds, respectively. Leveraged loan prices increased +$0.05 in the first week of 2024 to $96.46**, with BB loan prices rising $0.06 to $99.76, Single B loans prices increasing by $0.10 to $98.41 and Split B/CCC loan prices decreasing $0.36 to $78.67. And the sub-$80, $80-$89.99, $90-$94.99, $95-$97.99, $98-$98.99, $99-$99.99, and $100+ buckets for Loans are now at 3.7%, 4.1%, 5.4%, 9.9%, 6.5%, 28.8%, 41.6%. **Notably, the percentage of loans trading above par is at a high since January 2022. And leveraged loan yields and spreads (to maturity) rose 15bp and declined 1bp in the first week of 2024 to 8.76% and 499bp, which followed declines of 66bp and 22bp in December, respectively.** BB, B and CCC loan spreads of 295bp (-2bp w/w, -37bp 2023), 452bp (-3bp w/w, -149bp 2023), and 1364bp (+27bp w/w, -357bp 2023) are now 9% below, 9% below, and 16% above their long-term non-recessionary averages. The Leveraged Loan index provided a +1.61% gain in December, with CCCs (+3.35%) outperforming Single Bs (+1.67%) and BBs (+1.20%). And the yield-to-maturity for leveraged loan index of 8.76% is now 64bp above the HY bond index (8.12%), which is comparable to an average 69bp above over the past year. **The Leveraged Loan index provided a +13.17% gain in 2023, with BB (+10.23%) and B loans (+14.61%) underperforming CCC loans (+16.96). These were the second strongest returns for loans on record.** For context, this compares to 2023 gains for HY (+13.51%), IG (+8.47%), and the S&P 500 (+26.26%). Meanwhile, CLO primary priced $4.9bn in December following $15.1bn of ex-refi/resets in November; 2023 activity of $115.6bn was down -11% versus a year ago. Lastly, December's institutional loan issuance totaled $52.5bn ($6.0bn ex-refi/repricing). For context, $46.5bn of loans repriced/refinanced in December is the most since March 2021. **As such, 2023's institutional loan volume totaled $370.1bn ($81.8bn ex-refi/repricing), which was up +47% over $252.5bn ($163.1bn ex-refi/repricing, -50% y/y) in 2022.** Note Tuesday we published December High-Yield Bond and Leveraged Loan Market Monitor.

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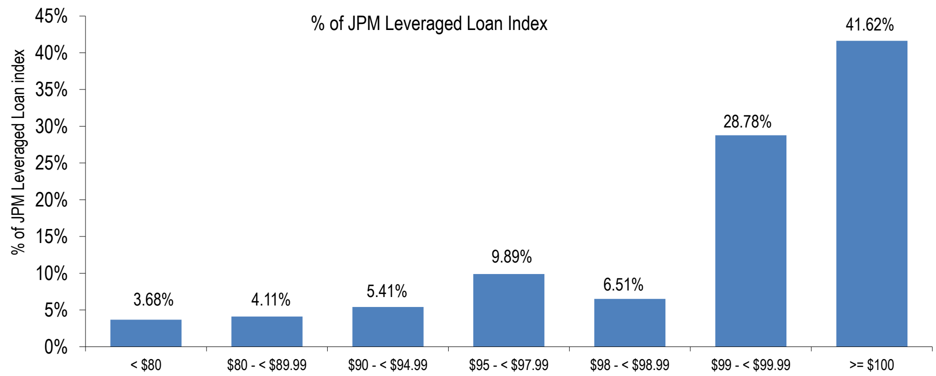
The percentage of loans trading above par is at high since January 2022 and is expected to ignite a repricing wave



Source: J.P. Morgan.

Lowering our 2024 high-yield bond and loan return forecasts following late 2023's rally

When we published our outlook in November (2024 High-Yield Bond and Leveraged Loan Outlook), we established a forecast for moderately wider credit spreads and strong returns in 2024 amid a baseline assumption for weaker growth and lower rates. Fast forward, and a great deal of our colleagues' forecasts for declining Treasury yields was realized in the ensuing six weeks. In addition, our economists now look for a first rate cut in June 2024 and for a target range 125bp lower by YE24. Conversely, market pricing is even more aggressive now, with two cuts priced in for 1H24 and almost 150bp cumulatively over the course of 2024. As well, our rates colleagues lowered their 2yr, 5yr, and 10yr Treasury yield YE24 forecasts by 25bp, 20bp and 10bp to 3.25%, 3.35%, and 3.65%, respectively. With high-yield bond yields down approximately 100bp since the release of the publication, we believe that a portion of 2024's forecasted gains were pulled forward. **While retaining our 475bp YE24 high-yield bond spread forecast, mark-to-market conditions and a fresh rate forecast imply a 20bp rise in the YTW (to 8.35%) and a full-year total return for high-yield bonds of about 6% (from 11%). This compares to our more modest downwardly revised total return forecast for leveraged loans of 7% (from 9%). In our view, high-yield bond and leveraged loan spreads, which currently reside nearly 75bp and 50bp inside our year-end 2024 targets (475bp/550bp), appropriately reflect a resilient US economy with significant progress on disinflation at the turn of year. We believe these conditions, coupled with improving capital market conditions and the upcoming earnings period, will support these valuations through at least 1Q. The assumed ingredients for wider spreads over the next twelve months include our baseline assumption for weaker growth and lower rates**, or alternatively, resilient growth coupled with higher-than-forecasted inflation that disrupts the currently benign Fed narrative. Should economic conditions (and earnings) remain resilient into 2H24, it is likely our spread and return targets will prove too conservative. With spreads underpricing our 2024/25 default forecasts, the expected widening yoy is due to our belief that an additional premium will need to be baked into spreads as growth slows, rates remain restrictive, the cycle matures, and uncertainty around 2025's landscape builds. We expect greater performance dispersion around earnings to materialize as 2024 progresses and for decompression among ratings to settle in alongside softer realized growth (JPM forecasting 1.25% 1Q, 0.5% 2Q, 0.5% 3Q, and 0.75% 4Q).

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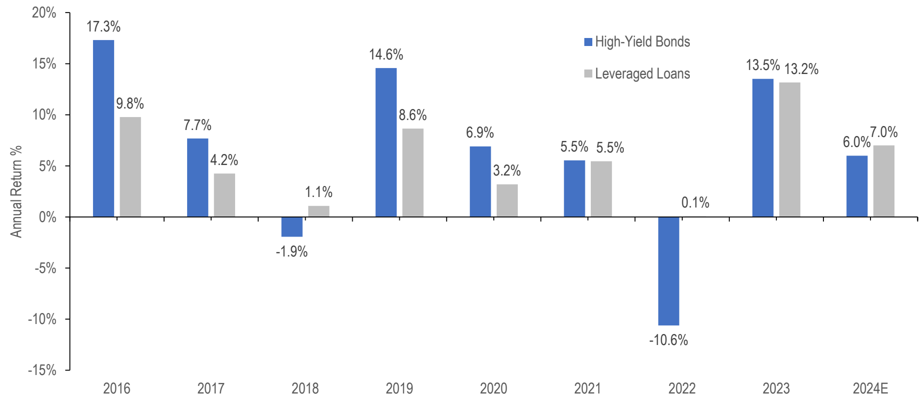
High-yield bonds and leveraged loans are forecasted to return 6% and 7% in 2024, respectively, following gains totaling 13.5% and 13.2% in 2023



Source: J.P. Morgan.

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CLO

J.P. Morgan 2024 Client Survey Results

- Our 150bp YE24 target for CLO T1 AAA new issue implies ~10bp tightening from here, while a potentially slower pace of QT at some point this year also helps less-liquid products (link). Even so, we expect near-term resistance to this CLO spread, which is 60bp tighter (or nearly 30%) from late 2022, including 15bp from the time of our very recent 11/26 Outlook. Spreads aren't far from early 2022 levels and, while inflation is cooling, the labor market remains strong, and markets are re-appraising the Goldilocks scenario of rapid easing. Geopolitical risks also create an overhang for markets. On balance, even if the CLO AAA rally stalls out, what with HG Corporates to Treasuries still yielding mid-single digits, CLO Mezz to Equity can attract demand. US HY bond YTW has dropped to 8% (from recent highs of 10%) and CLOIE BB yielding 12.5% to CLO Equity in mid teens looks appealing.
- We're very grateful to our readers for supporting our client survey as it enters its 15th year. This edition ran December 11-15, 2023, and comprises 50 respondents. Please see the detailed results in this publication.
- We asked clients for their MY24 CLO T1 AAA new issue spread forecast, which is important in a broader sense for Leveraged Finance to Private Credit markets. The responses ranged from 145-185bp with an average 161bp for US BSL CLO AAA, 185-265bp with an average of 216bp for Private Credit CLO AAA, and 140-180bp with an average of 159bp for Euro CLO AAA.
- Across the AAA spread curve, more than one-third of respondents (35.1%) indicated that T1 2-3 AAA new issue spreads are attractive compared to other areas of the AAA market, followed by Private Credit AAA, with 30% of responses. Away from AAA, respondents indicated buying interest in Mezz, especially in secondary bonds.
- On cash balances, the percentage of investors with low cash (0-5%) dropped to 61%, long-term average of 45%. Those with moderate cash (5-10%) rose to 29% from 18% last quarter. Those with high cash positions (10%+) slightly dropped to 10%. Keep in mind the respondents change each survey.

J.P. Morgan CLO Investor Survey Results

This survey ran December 11-15 and comprises 50 respondents. We have been running the J.P. Morgan CLO survey since 2009 and thank everyone for supporting it over the years. Please see the detailed results.

AAA Financing Outlook

Over the past 6 months, Tier 1 Primary US CLO AAA spreads have tightened 10bps to 160bp. We expect spreads to tighten another 10bps to 150bp by MY24 and see spreads in the 140-150bp range by YE24. We asked clients for their MY24 spread forecast, and responses ranged from 145-185bps, with an average response of 161bp. For Tier 1 Private Credit/Middle Market US CLO AAAs, responses ranged from 185-265bp, with an average response of 216bp (currently around 230-235bps). In the European market, where T1 AAA spreads are currently 171bps, responses ranged from 140-180bps, with an average response of 159bp.

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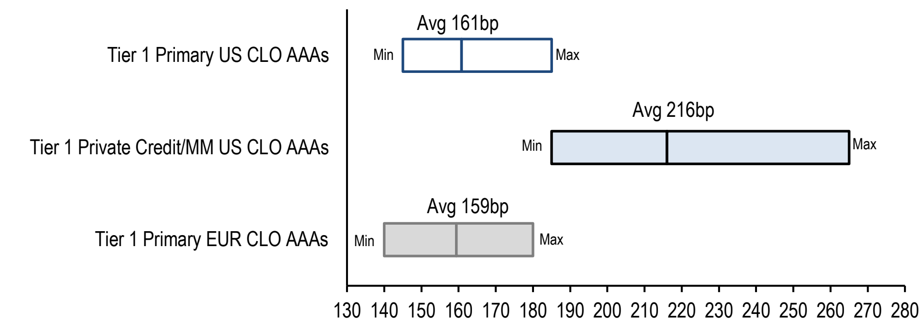
Figure 161: What spread level do you anticipate as of Mid-Year (June 30th, 2024) for each of the below?

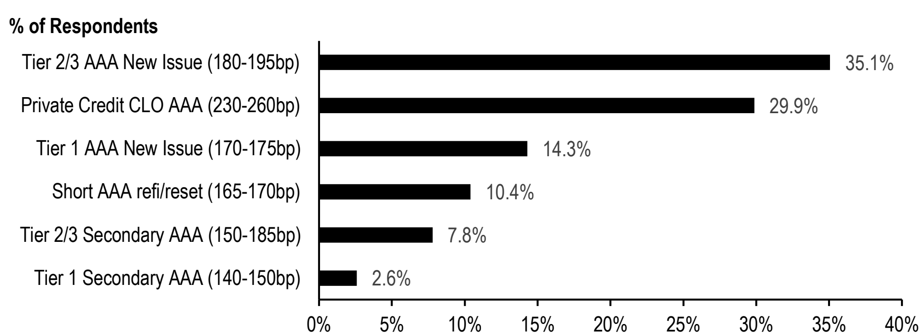


Source: J.P. Morgan.

Relative Value

Over one-third of respondents (35.1%) indicated that Tier 2-3 AAA New Issue spreads, which were around 180-195bps at the time of the survey, looked attractive compared to other areas of the AAA market. This is ~10% lower than in September, when 44% of respondents indicated that Tier 2-3 New Issue spreads had the best relative value. This is keeping in mind that the respondent base varies over time. Currently, close to one-third of respondents (29.9%) see value in Private Credit CLO AAAs at 230-260bp. Around 14% of respondents indicated that Tier 1 AAA New Issue spreads had the best relative value compared to only 8% in our September survey. There was minimal interest in the Secondary AAA market, with 8% of clients seeing value in Tier 2-3 and 3% seeing value in Tier 1.

Figure 162: Where do you see the best relative value across the US AAA term curve?



Source: J.P. Morgan.

Investment Plans and Cash Balances

As we enter the new year, we asked clients what they're planning to buy this quarter. The US Secondary BSL market received the greatest interest with 78 votes, followed by the US Primary BSL market at 67 votes. Across all CLO markets,clients voted especially for AAAs (51 combined votes) and BBBs (42 combined votes), with minimal interest in Single-Bs (combined 7 votes) and Equity tranches (combined 15 votes). By tranche, US Primary BSL AAAs and US Secondary BBBs received the most votes (17 and 16, respectively). In the Private Credit/Middle Market CLO space, interest was heavily skewed towards AAAs (15 votes) with few votes for Mezz tranches. In the European market, BBB and BB received the most interest, bearing in mind this analysis may be skewed by the overall size of each market.

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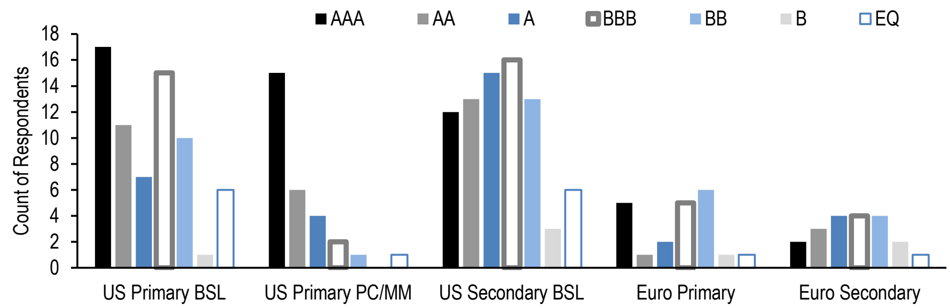
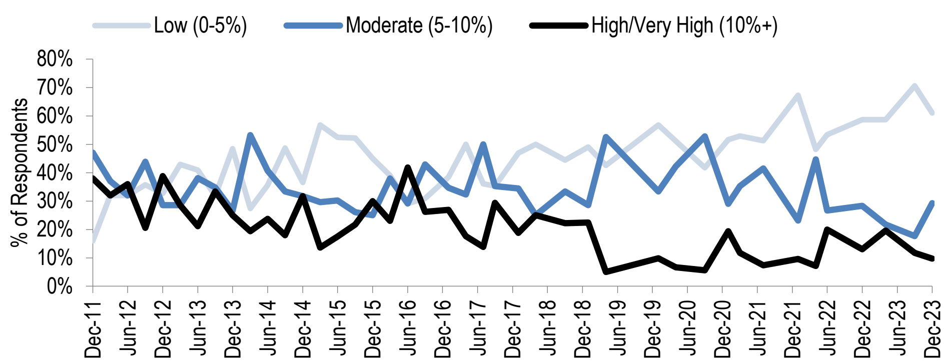
On cash balances, the percentage of investors with low cash positions (0-5%) is 61%, which is a 10% drop from last quarter, but is still above the long-term average of 45%. Those with moderate cash positions (5-10%) rose to 29% from 18% last quarter. Those with high cash positions (10%+) dropped slightly, to 10%. The add-to-reduce ratio fell to 5.0x compared to 9.0x last quarter. This is keeping in mind that the respondent base varies over time.

Figure 163: What are you planning to buy this quarter in your CLO investment portfolio?



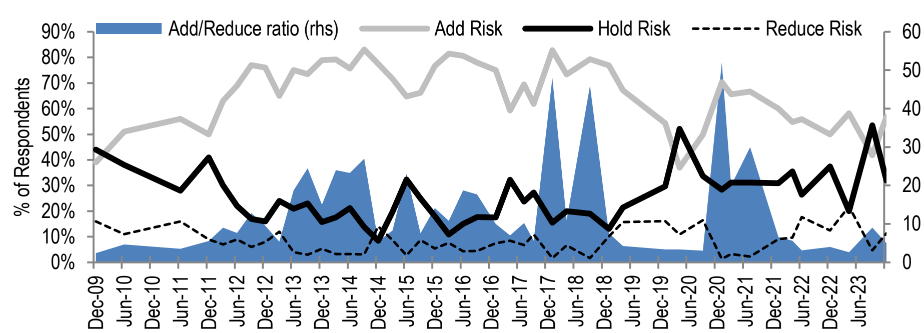
Source: J.P. Morgan.

Figure 164: How would you describe your current cash position for CLO investment funds you manage?



Source: J.P. Morgan.

Figure 165: How would you describe your anticipated CLO investment plans for the next 6 months?



Source: J.P. Morgan.

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Municipal Markets Weekly

Supply to increase, Munis rich, Volatile returns expected in 2024, Default review

- Please join our webinar on Thursday, January 11th at 3pm ET, as we share our thoughts on the performance of the US economy, rates, and municipals since the release of our 2024 outlook. In addition, we will be joined by Michael Feroli, Chief U.S. Economist, and Jay Barry, Co-Head of U.S. Rates Strategy. Registration details will follow next week.
- AAA HG rates bested the UST market by 19-21-18-17bps in 2-5-10-30yrs this week, on the heels of extremely thin tax-exempt supply ($3.3bn) over the past 3 weeks, and sizable cash in the system given healthy Dec/Jan reinvestment capital ($68bn).
- We expect a challenging environment in the tax-exempt muni market next week, given this week's outperformance and resulting rich valuations, along with expected sizable tax-exempt supply ($8.9bn). Municipal market headwinds include: 1) rich muni market valuations (particularly in 5-10yrs), 2) sizable tax-exempt supply (largest comparable week since 2017), 3) volatile UST rates market, and 4) recent municipal ETF outflows. On the other hand, supportive factors include: 1) Still high after-tax yields based on a 10yr look back, 2) highly supportive Dec net-negative supply (-$15bn) and expected Jan net supply (-$8bn), and 3) increasing financial media focus on higher rates. We caveat that performance is still highly subject to the direction and magnitude of rate change in the UST market.
- Our rates team covered tactical shorts this week and stay neutral duration on dovish Fed path, fair valuations, and neutral positioning, but look to add duration in the 3- to 5yr sectors in a selloff. They also hold 5s/30s steepeners.
- This week's economic calendar was headlined by today's above consensus December jobs report, and other strong labor market data, including initial claims, the Challenger report and ADP data, save for the November JOLTS report.
- Next week's tax-exempt supply is expected to total $8.9bn, or 1.5x the 5yr avg for the equivalent week. Gross supply of $9.1bn would be 1.2x the 5yr equivalent average, as taxable/corp cusip supply is expected to be just $236mn (13%).
- In 2023, the price performance of the IG muni index was extremely mixed, posting positive price return over 6 months and negative returns over the remainder. Investors needed to maintain strong conviction in the Fed and their ability to slow inflation or have timed the market well to outperform in benchmark and peer based comparisons.
- While we believe that the 8.6% return in the IG muni index in Nov and Dec 2023 pulled some of this year's performance forward, we still expect positive returns in risky assets in 2024. Moreover, as was the case last year, we believe investors will be rewarded by adhering to a buy the dip mentality, and maintaining conviction that the Fed will ultimately bring inflation back to their comfort range some time in 2024.
- LSEG Lipper reported weekly municipal fund outflows of $558mn for the period ending January 3rd, on open-end fund and ETF outflows of $355mn and $203mn, respectively. A still evolving read of full-year 2023 data shows all term muni fund outflows totaled $16.1bn, marking a 2nd consecutive year of outflows, driven entirely by open-end funds (-$28.5bn) as ETFs saw inflows (+$12.4bn).
- Municipal default/distressed volume totaled $4.0bn in 2023, up 6% y/y but down 7% from the trailing 5yr average. Activity was less concentrated by sector in 2023, but nursing homes remained under pressure relative to other industries.

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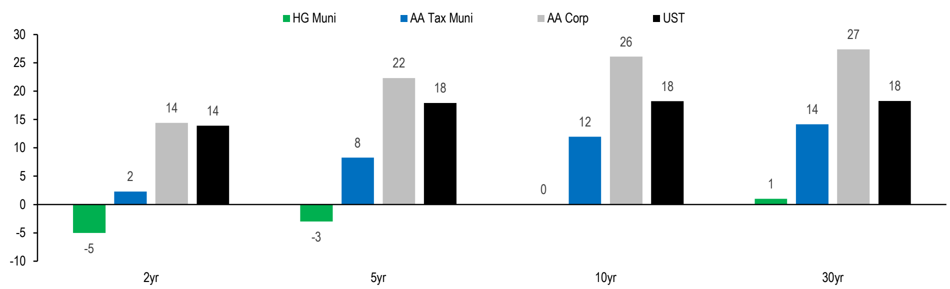
We expect next week's heavy tax-exempt calendar will test valuations after the three-week supply hiatus and sizable reinvestment capital, have municipals largely at their richest levels since April of last year

Benchmark municipal rates were unchanged on Friday, despite higher UST rates in reaction to the better-than-expected December employment report. **This furthered municipals' significant outperformance versus taxable fixed-income over the week, with AAA HG rates besting the UST market by 19-21-18-17bps in 2-5-10-30yrs, respectively.** We note that this week's considerable outperformance comes on the heels of extremely thin tax-exempt supply ($3.3bn) over the past 3 weeks and sizable cash in the system given healthy December/January reinvestment capital ($68bn).

Figure 166: Over the week, municipals' significantly outperformed taxable fixed-income, with AAA HG rates besting the UST market by 19-21-18-17bps in 2-5-10-30yrs, respectively

WTD yield change, bps



Source: Refinitiv, ICE, J.P. Morgan.
Note: as of 01/05/2024, 3pm read

Given this week's outperformance and resulting rich valuations, along with expected sizable municipal tax-exempt supply ($8.7bn), we expect a challenging environment in the tax-exempt municipal market next week. We again caveat that market conditions are highly subject to the direction and magnitude of rate change in the UST market and expect continued volatility around the release of non-consensus data. Municipal market headwinds include: 1) rich municipal market valuations, particularly in the 5-10yr area of the curve (see Figure 167), 2) sizable tax-exempt supply of $8.9bn (largest comparable week since 2017), 3) volatile UST rates market, and 4) recent municipal ETF outflows. Supportive factors include: 1) Still high after-tax yields based on a ten-year look back, 2) highly supportive December net-negative supply of -$13bn and expected January net supply of -$8bn, and 3) increasing financial media focus on higher rates.

After a slow start in the tax-exempt municipal secondary market on Tuesday, customer purchases did pick up this week to about-average levels on Wednesday and Thursday. Thursday's tax-exempt customer purchases continued to reflect more typical levels of activity, with purchases up 4% from the trailing 5-week Thursday average, showing a 20% increase in 5-10yrs, while buying was within 5% of average over the balance of the curve. Bidwanteds were down by a considerable 27%, however, with declines of 31-40% in 0-20yrs, but showed a 15% increase in 20yrs and longer on the curve.

We believe that this week's solid secondary market performance was largely a function of the aforementioned dearth of new issue volume and sizable cash in the system, but expect that valuations will be challenged when supply hits next week, given the generally richer valuations throughout the curve and in 0-10yrs in particular.

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The 2-5-10yr Muni/UST ratios of 56%-56%- 56%are rich relative to historical comparisons. The 30yr ratio of 82%continues to be by far the cheapest portion of the tax-exempt market relative to taxable fixed income, but is still somewhat rich to historical comparisons.

Figure 167: 2-5-10yr muni/UST ratios are rich relative to historical comparisons

Horizon	2Yr Muni/UST Ratio	5Yr Muni/UST Ratio	10Yr Muni/UST Ratio	20Yr Muni/UST Ratio	30Yr Muni/UST Ratio
1Yr	62.6%	64.7%	66.8%	80.2%	89.1%
3Yr	64.2%	63.3%	72.6%	77.9%	86.8%
5Yr	85.2%	76.5%	83.8%	88.5%	93.1%
10Yr	82.2%	76.9%	87.3%	96.2%	96.6%
20Yr	89.6%	82.3%	89.6%	97.3%	98.9%
30Yr	83.9%	80.2%	86.7%	93.5%	95.8%
LAST	56.3%	56.2%	56.4%	72.9%	81.7%

Source: Refinitiv, ICE, J.P. Morgan.
Note: as of 01/05/2024.

The 2-5-10yr AA Muni/Corp ratios of56% - 55% -**52% suggest that tax-exempts are overvalued and that investors may find higher TEY in like structure corporates.** The 30yr spot continues to represent the most value, with the 77% ratio now 0.6 standard deviations cheap to the trailing 5-year average.

Figure 168: Current 2-5-10yr AA Muni/Corp ratios suggest that tax-exempts are overvalued

Horizon	2Yr AA Muni/AA Corp Ratio	5Yr AA Muni/AA Corp Ratio	10Yr AA Muni/AA Corp Ratio	20Yr AA Muni/AA Corp Ratio	30Yr AA Muni/AA Corp Ratio
1Yr	60.8%	61.3%	61.0%	73.6%	82.7%
3Yr	57.9%	57.4%	62.9%	66.2%	72.7%
5Yr	60.7%	58.8%	64.5%	67.6%	71.8%
10Yr	62.1%	62.1%	70.1%	74.6%	75.6%
LAST	56.1%	54.8%	52.4%	66.7%	77.2%

Source: ICE, J.P. Morgan.
Note: as of 01/05/2024

The 2yr AA tax-exempt/taxable muni ratio of 55%is near the historical averages over the periods indicated, while the 5-10yr ratios of 53% **--51%**are overvalued, suggesting that investors may find higher TEY in like structure taxable municipal bonds. The 30yr ratio represents the most value, with a ratio of 76%..

Figure 169: 5-10yr tax-exempt/taxable muni ratios are overvalued, suggesting that investors may find higher TEY in like structure taxable municipal bonds

Horizon	2Yr AA TE/Tax Muni Ratio	5Yr AA TE/Tax Muni Ratio	10Yr AA TE/Tax Muni Ratio	20Yr AA TE/Tax Muni Ratio	30Yr AA TE/Tax Muni Ratio
1Yr	59.6%	58.2%	57.1%	69.4%	76.8%
3Yr	53.0%	56.1%	62.0%	64.0%	70.1%
5Yr	52.4%	55.3%	62.5%	64.7%	70.3%
10Yr	56.9%	60.3%	67.3%	69.2%	73.7%
LAST	55.4%	53.1%	50.8%	64.4%	76.4%

Source: ICE, J.P. Morgan.
Note: As of 01/04/24

Based on a 21% tax rate, the taxable equivalent yield for 30yr AA 4% tax-exempts provides 28bps of spread pick-up over similar structure corporates. Meanwhile, 30yr AA taxable munis also have a 12bps spread over AA 30yr corporates.

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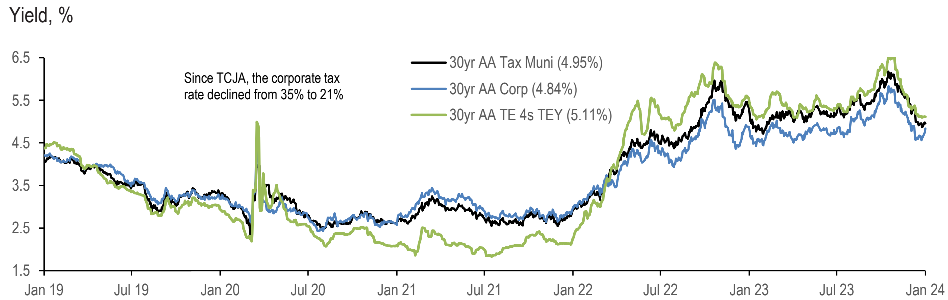
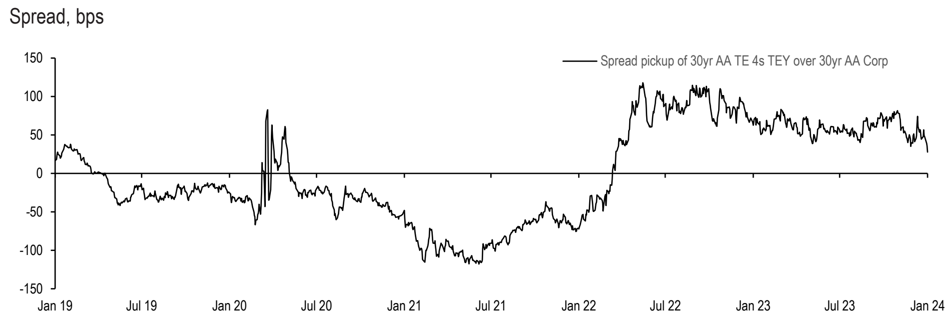
Figure 170: Based on a 21% tax rate, the taxable equivalent yield for 30yr AA 4% tax-exempts provides 28bps of spread pick-up over similar structure corporates





Source: ICE, J.P. Morgan
Note: As of 01/04/2024

The taxable municipal market continues to trade at attractive yields and spreads relative to corporates. The yield on 30yr AA taxable municipals (4.95%)has rallied since October, but remains high relative to most periods over the past ten years. **Further, spreads on 30yr AA taxable (12bps) and A-rated taxable (31bps) munis, offer wide spread versus similar structure US Corporates.**

Figure 171: The yield on 30yr AA taxable municipals has rallied since October, but remains high relative to most periods over the past ten years

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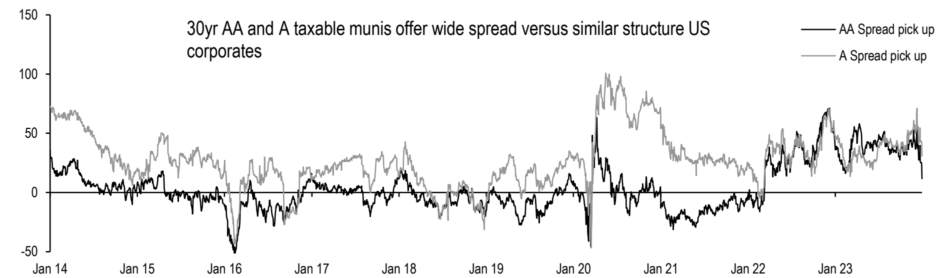

Source: ICE, J.P. Morgan
Note: As of 01/04/2024

As of Friday afternoon, Treasury yields for the week were higher by 14-18-18-18bps in the 2-5-10-30yr spots on the curve. Benchmark munis outperformed, with yields down by 5-3bps in 2-5yrs, unchanged in 10yrs and higher by 1bp in 30yrs.

Figure 172: Benchmark muni yields outperformed Treasuries by 17-21bps across the curve this week

	HG Municipal Yields		Treasury Yields		Relative	HG Muni/Tsy Ratio	
Sector	Current (%)	1wk chg (bps)	Current (%)	1wk chg (bps)	Change	Ratio (%)	change (% pts)
2yr	2.47	-5	4.39	14	19	56	-3
5yr	2.25	-3	4.01	18	21	56	-3
10yr	2.28	0	4.04	18	18	56	-3
30yr	3.43	1	4.20	18	17	82	-3

Source: Refinitiv, J.P. Morgan
Note: As of 01/05/2024, 3pm

This week's employment related data releases surprised to the upside

This week's economic calendar was headlined by today's December jobs report, which contained mixed details but overall continued to point to strength in the labor market. Specifically, the December employment report showed job creation of 216k (cons: 175k). The unemployment rate dropped 0.1% to 3.7% (cons: 3.8%), while average hourly earnings also beat, rising 0.4% (cons: 0.3%). The mitigating details included a downward revision to payrolls netting to -71k and a tick down in the workweek to 34.3 hours (Solid job growth, but with less rosy details, Feroli).

Labor market data released earlier in the week also largely suggested strength, including initial claims, the Challenger report, and ADP data, but save for the November JOLTS report. Specifically, initial claims surprised favorably, with a decline from 220k to 202k for the week ending December 30, and continuing claims declined from 1.886mn to 1.855mn during the week ending December 23. While weekly figures can be noisy (particularly during the holidays), **the low levels of filings suggests that layoffs remain very low**. Additionally, the 35k of announced job cuts in **the December Challenger report was down 20% from the comparable figure reported for December 2022,** and is a fairly tame level of job cuts by broad historic standards. Furthermore, **the December ADP report beat expectations**, with a private employment gain of 164k (cons: 125k) (A solid morning for labor market indicators, Silver). In contrast, **the November JOLTS report pointed to some cooling in the labor market**, with job openings, hires, quits, and layoffs all declining from the month prior (Job openings continue to trend lower, Silver).

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Away from the labor market, the ISM manufacturing survey beat expectations, although the print was still a weak reading (ISM manufacturing survey moves up but stays soft, Silver). Later, the December print for the ISM services survey disappointed expectations and marked the lowest level reported since May (ISM services survey dragged down by employment index, Silver).

On Wednesday, the minutes from the December FOMC meeting echoed some of the dovish lean in Chair Powell's earlier press conference, repeatedly noting "clear progress" on inflation and a "better balance" emerging in the labor market (recap). That said, the Committee repeated that labor markets were "still tight" and inflation was "still elevated." Risks were also seen as becoming more balanced, although inflation risks were still mostly to the upside—indeed, they noted that further rate hikes could become appropriate, which appeared to motivate the tweak to the December statement language to leave open that possibility (Takin' my time, I'm just movin' on, Hanson).

Our rates team covered tactical shorts this week and stay neutral duration on dovish Fed path, fair valuations, and neutral positioning, but look to add duration in the 3- to 5yr sectors in a selloff. They also hold 5s/30s steepeners, as the long end should steepen approaching the first ease and this curve remains too flat to its drivers (Treasuries, Barry).

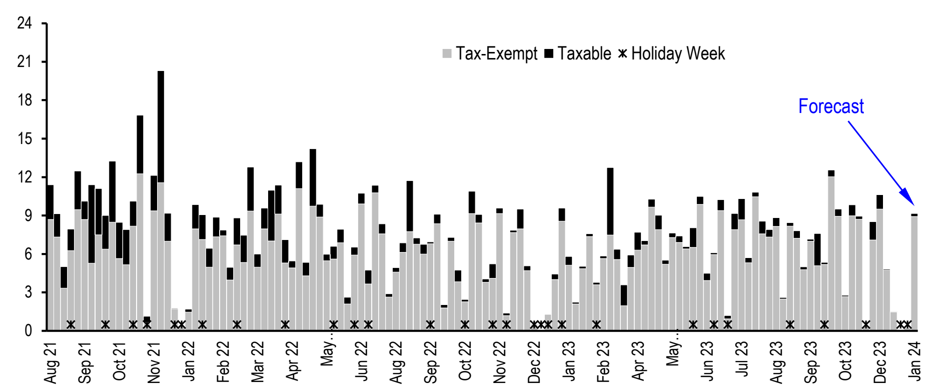
Next week's tax-exempt supply ($8.9bn) is the highest since 2017, based on an equivalent week comparison

Next week's tax-exempt supply is expected to reach $8.9bn, or 1.5x the 5yr average and the largest volume for the comparable week since 2017 ($10bn). Taxable/corp cusip supply is expected to be just $244mn (13% of the 5yr avg). Gross supply of $9.1bn would be 118% of the 5yr equivalent average.

Next week's negotiated calendar will be headlined by a $2.3bn sale for Jefferson County, AL and a $1.4bn GO deal for the Commonwealth of Massachusetts.

Figure 173: We anticipate tax-exempt supply of $8.9bn (1.5x the 5yr avg) and muted taxable/corp cusip supply

Weekly Issuance, $bn's



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

For the period ending 01/03/2024, LSEG Lipper reported weekly outflows of $558mn. A still evolving read shows weekly and monthly outflows totaled $16.1bn in 2023.

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LSEG Lipper reported weekly municipal fund outflows of $558mn for the period ending January 3rd, on open-end fund and ETF outflows of $355mn and $203mn, respectively. In terms of flows by duration, Long Term, Short/Intermediate and Short Term funds saw outflows of $529mn, $82mn and $78mn, respectively, while Intermediate funds posted inflows (+$131mn). By credit quality, Investment Grade and High Yield funds both saw outflows of $393mn and $165mn, respectively.

Please note that these figures represent weekly reporting funds only.

Weekly Only Reporters	Combined Fund Flows					Open End Mutual Fund Flows					ETF Fund Flows				
Week ended Jan 3, 2024	Actual $mn	Fund Assets	Flow as % of Assets	Market Valuation	Mkt Val. as % of Asset	Actual $mn	Fund Assets	Flow as % of Assets	Market Valuation	Mkt Val. as % of Asset	Actual $mn	Fund Assets	Flow as % of Assets	Market Valuation	Mkt Val. as % of Asset
All term muni	(558)	433,305	-0.13%	604	0.14%	(355)	343,260	-0.10%	580	0.17%	(203)	90,045	-0.23%	24	0.03%
Investment Grade	(393)	350,063	-0.11%	474	0.14%	(185)	266,873	-0.07%	445	0.17%	(208)	83,190	-0.25%	28	0.03%
High Yield	(165)	83,242	-0.20%	130	0.16%	(169)	76,386	-0.22%	134	0.18%	5	6,855	0.07%	-4	-0.06%
Long Term (10yr+)	(529)	279,320	-0.19%	402	0.14%	(281)	218,481	-0.13%	392	0.18%	(248)	60,839	-0.41%	10	0.02%
Intermediate (5-10yr)	131	87,337	0.15%	109	0.12%	53	76,848	0.07%	104	0.14%	78	10,489	0.74%	5	0.04%
Short / Intermediate (3-5yr)	(82)	33,915	-0.24%	38	0.11%	(126)	23,899	-0.53%	33	0.14%	44	10,016	0.44%	6	0.06%
Short (1-3yr)	(78)	32,733	-0.24%	55	0.17%	(1)	24,032	-0.00%	51	0.21%	(77)	8,701	-0.88%	4	0.05%
National funds	(411)	366,391	-0.11%	505	0.14%	(245)	281,037	-0.09%	482	0.17%	(166)	85,354	-0.19%	24	0.03%
New York	(12)	15,768	-0.08%	21	0.13%	(15)	14,998	-0.10%	21	0.14%	3	770	0.35%	0	0.01%
California	(57)	26,903	-0.21%	36	0.13%	(17)	23,000	-0.07%	36	0.16%	(40)	3,903	-1.03%	0	0.01%
Tax-exempt money market	3,114	101,217	3.08%	183	0.18%										
Taxable money market	53,900	5,218,126	1.03%	18,784	0.36%										
Taxable Fixed Income	5,699	2,585,513	0.22%	-12,068	-0.47%	(1)	1,582,625	-0.00%	-6,080	-0.38%	5,700	1,002,888	0.57%	-5,988	-0.60%
US & Global Equity	(3,890)	8,670,505	-0.04%	-192,949	-2.23%	(10,316)	4,285,136	-0.24%	-97,307	-2.27%	6,426	4,385,369	0.15%	-95,642	-2.18%

Source: LSEG Lipper Global Fund Flows, J.P. Morgan. Note: Figures shown on this table are weekly reporters only. Data refreshed on 01/04/24, 2pm read.

Due to a methodology change, Lipper's new data platform now reports comprehensive monthly fund flow numbers, aggregating both monthly and weekly reporters' flows in the prior month. According to LSEG Lipper, most monthly reporters deliver their data by the 7th business day of the month. **Thursday's read of December's monthly outflows was $1.7bn.**

We expect that full-year 2023 data will evolve over the next two weeks, given the methodology described above. **Thursday's read of full-year 2023 data shows all term muni fund outflows totaled $16.1bn, marking a second consecutive year of outflows. Outflows in 2023 were driven by open-end funds (-$28.5bn) while ETFs saw inflows of $12.4bn.**

By duration, Long Term funds showed inflows of $9.3bn in 2023, while Intermediate, Short/Intermediate and Short Term funds reported outflows of $1.5bn, $10.9bn and $13.0bn, respectively.

High Yield funds posted $454mn of inflows in 2023, driven almost entirely by inflows into HY open-end funds.

Weekly and Monthly Reporters	December Monthly Flow $mn			2023 Flow $mn			2023 Flow as % Start AUM		
	Combined	Open End Mutual Fund	ETF	Combined	Open End Mutual	ETF	Combined	Open End Mutual	ETF
All term muni	(1,737)	(2,939)	1,202	(16,100)	(28,505)	12,405	-1.93%	-3.90%	11.93%
Investment Grade	(690)	(1,663)	974	(16,554)	(28,938)	12,384	-2.31%	-4.67%	12.67%
High Yield	(1,047)	(1,276)	228	454	432	22	0.39%	0.39%	0.34%
Long Term (10yr+)	(353)	(1,378)	1,025	9,275	(3,700)	12,976	1.89%	-0.89%	17.20%
Intermediate (5-10yr)	(99)	(235)	137	(1,487)	(3,591)	2,104	-0.78%	-1.96%	27.21%
Short / Intermediate (3-5yr)	(656)	(623)	(33)	(10,887)	(8,946)	(1,941)	-12.48%	-11.83%	-16.67%
Short (1-3yr)	(629)	(703)	74	(13,001)	(12,268)	(733)	-19.47%	-21.31%	-7.95%
National funds	(1,443)	(2,639)	1,196	(9,289)	(20,596)	11,307	-1.37%	-3.57%	11.24%
New York	(50)	(26)	(23)	(1,200)	(1,279)	79	-4.49%	-4.90%	12.27%
California	35	6	29	(1,485)	(2,504)	1,019	-2.07%	-3.62%	37.52%

Source: LSEG Lipper Global Fund Flows, J.P. Morgan. Note: Figures shown on this table are combination of weekly and monthly reporters. Reporting period is on monthly basis. Data refreshed on 01/04/24 at 2pm. Monthly and annual flow numbers may be updated in future business days of the month.

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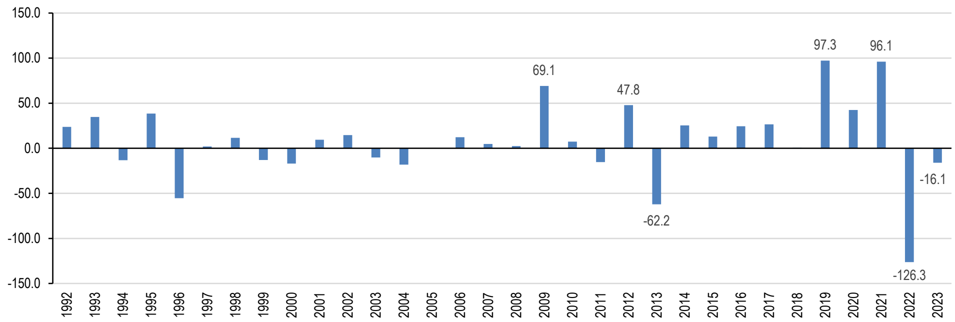
Annual all term muni fund flow, $bn



Source: LSEG Lipper Global Fund Flows, J.P. Morgan. Note: Figures shown on this table are a combination of weekly and monthly reporters. Data refreshed on 01/04/24 at 2pm.

Similar to 2023, we expect that investors will be rewarded by adhering to a buy the dip mentality, and maintaining conviction that the Fed will ultimately bring inflation back to their comfort range some time in 2024

In 2023, Bloomberg IG/HY/Taxable muni indices posted annual returns of 6.4%, 9.2%, and 8.8%, respectively. IG tax-exempt munis outperformed the US Treasury index, but lagged US IG Corps (8.5%), although taxable munis (8.8%) outperformed the latter. **Risky assets outperformed amidst the sizable fixed income markets rally in November and December, with the HY muni index posting a significant return of 9.2% in 2023, which lagged the US Corp HY index return of 13.4%.**

While full-year 2023 returns reflect a strong market environment, volatility ruled the day amidst market responses to the evolving data and the broader implications for the Fed. Looking at the cumulative return trendline throughout the year, we see that investment performance was largely a function of when bonds were purchased.

In 2023, hopes for a bounce back year in fixed-income drove a January rally, sparking a near 3% total return in the IG municipal index and nearly 4.5% in HY municipals. **Rising UST rates on above consensus economic data in February then drove the cumulative return on the IG municipal market to nearly zero.** It took until the end of March before the municipal market recaptured January's performance, on the regional banking crisis-driven flight-to-quality rally.

Despite significant municipal market outperformance, cumulative market returns were flat in July. In September and October 2023, 10yr Treasury yields rose by ~90bps coinciding with seasonal pressures in the municipal bond market, resulting in considerable buying opportunities. **By the end of October, YTD total return for the IG muni index had dropped to -2.3%, the lowest point of the year.**

In November, the municipal market produced its largest monthly return in over 40 years (+6.3%). The rally was triggered by a smaller-than-expected Treasury bond auction following a series of poor performances, along with a litany of thesis-shifting inflation/job data. The strong fixed income market performance sustained through December (+2.3%) as markets priced in early (and in our view, aggressive) easing by the Fed in 2024.

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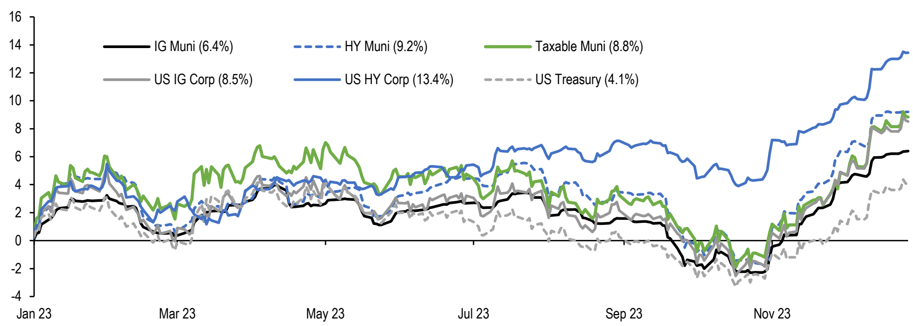
In 2023, the price performance of the municipal index was extremely mixed, posting positive price return over six months of the year and negative returns over the other months. Investors needed to maintain strong conviction in the Fed and their ability to ultimately slow inflation or have timed the market well, to outperform in benchmark and peer based comparisons. We believe that this manic market performance is a function of shifting Fed policy and the market's anticipation of such. **We also believe that there is a high probability that these large market swings will persist, at least through 1Q24, while the Fed remains cagey around the timing of their transition to an easing cycle.**

While we believe that the 8.6% return in the IG municipal index in November and December 2023 pulled some of this year's performance forward, we are still looking for positive returns in risky assets in 2024. **Moreover, as was the case last year, we believe investors will be rewarded by adhering to a buy the dip mentality, and maintaining conviction that the Fed will ultimately bring inflation back to their comfort range some time in 2024.**

Figure 174: Sizable 2023 returns were largely a result of performance over the last two months of the year. In Nov 2023, we experienced the largest monthly return in over 40 years (6.3%) and market continued the rally of another 2.3% return in December, lifting the YTD return from the negative territory

2023 return, %

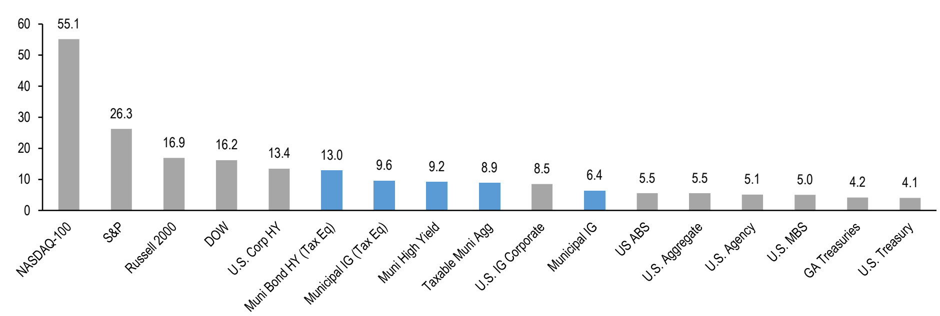


Source: Bloomberg Finance L.P., J.P. Morgan

In 2023, total return after tax adjustment (using 40.8% tax rate) of HY muni and IG munis topped all fixed income products in , save for the one exception of US HY Corp (+13.4%). Return on tax-exempt IG munis (+6.4%) lagged major stock indices and IG corporates (+8.5%), but outperformed Treasuries (+4.1%).

Figure 175: Total return after tax adjustment (using 40.8% tax rate) of HY muni and IG munis topped all of the fixed income products, save one exception of US HY Corp (13.4%)

2023 total return, %



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

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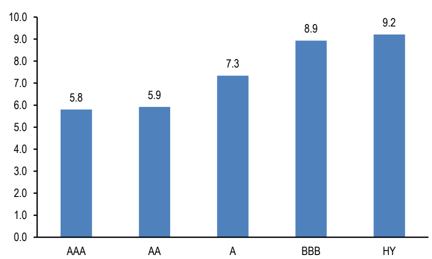
Higher allocations to both credit and curve risk ultimately paid off in 2023. For example, HY muni bonds (+9.2%) substantially outperformed IG munis (+6.4%) on the year. Within the IG muni index, the BBB sub-index (+8.9%) also outperformed higher rated AA sub-indices (+5.9%). By duration, the IG long municipal index generated considerably better returns (+9.3%) than the broader index (+6.4%) for the year.

In terms of total return by IG sectors, leasing (7.8%), hospitals (7.5%) and transportation (7.2%) were the top three sectors in 2023, while conservative sectors such as PreRe (3.0%), GO (5.6%), and water & sewer (5.8%) were the worst performers over the year.

Figure 176: BBB and HY outperformed in 2023

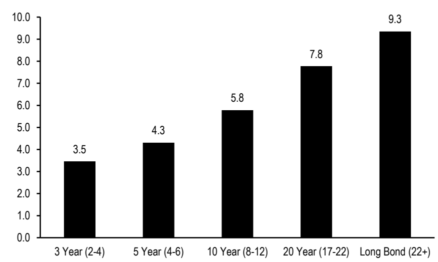
2023 total return, %



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

Figure 177: Long duration also outperformed

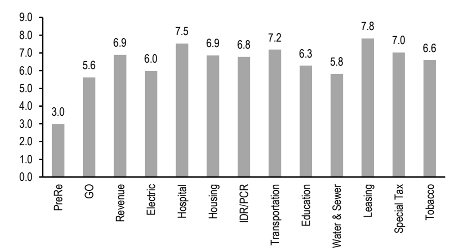
2023 total return, %



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

Figure 178: Leasing, hospital and transportation are the top three sectors in 2023

2023 total return, %

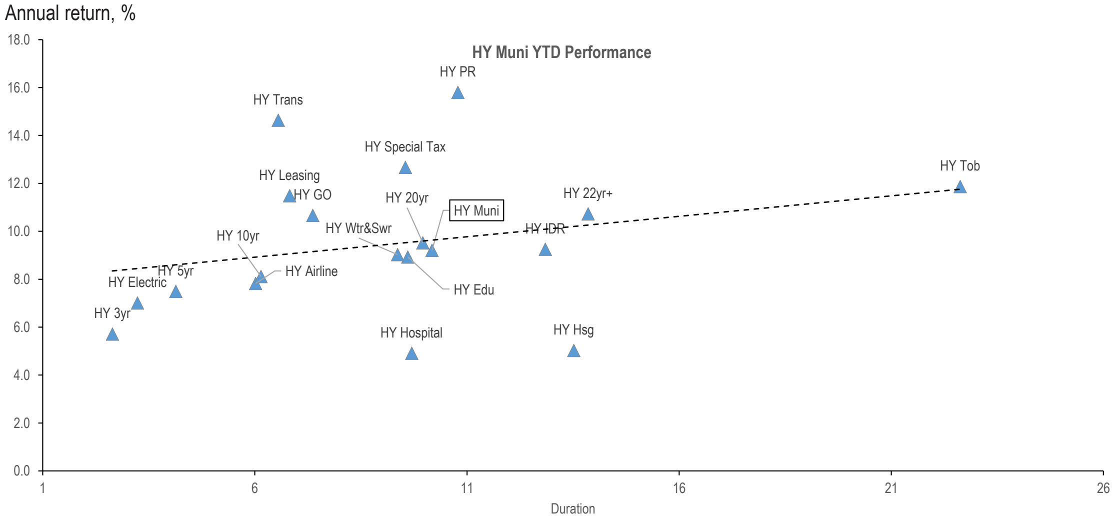


Source: Bloomberg Finance L.P., J.P. Morgan

Within HY muni sectors, Puerto Rico (15.8%) and transportation (14.6%) outperformed, while hospitals (4.9%) and housing (5.0%) lagged.

Figure 179: In the HY universe, Puerto Rico and transportation outperformed, while hospitals and housing lagged

Annual return, %



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

Municipal defaults/distressed activity ticked up modestly in 2023, but remains well below the historical average and very low in the context of the overall market

Default data referenced herein is based on monetary defaults only. Distressed data refers to technical defaults and other distressed activity, such as a reserve fund reserve withdrawal

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or a bankruptcy filing.

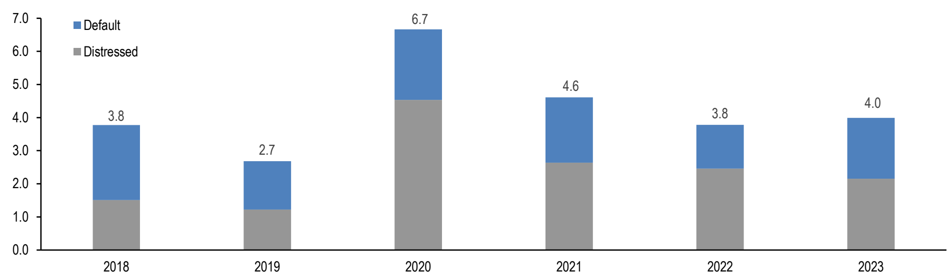
Municipal default/distressed activity in 2023 remained very low in the context of the overall market. On the year, out of a total of ~36k active borrowers in the municipal bond market, 49 issuers defaulted. **The total par value of defaulted bonds was $1.8bn of the $3.98tn in debt outstanding.**

Over the year, 48 borrowers saw distressed activity on a total of $2.2bn of bonds, based on data compiled by Bloomberg. **The year's combined total of $4.0bn of defaults/distressed volume is up 6% y/y, but down 7% from the trailing 5yr average (Figure 180).** Note that the substantial increase in default/distressed volume in 2017 from Puerto Rico credits has now fallen out of the 5yr average calculation. **Distressed volume accounted for 54% of total default/distressed activity in 2023, which compares with 65% last year but is consistent with the 5yr average of 55%.**

Overall, the average size of the defaults in 2023 was $37mn per credit, which compares with $27mn in 2022 , and an average of $42mn over the last 5 years.

Figure 180: Municipal defaults/distressed volume totaling $4.0bn are up 6% y/y, but down 7% from the trailing 5yr average

Volume, $bn



Source: Bloomberg Finance L.P., J.P. Morgan.
Note: As of 12/05/23

By sector, Nursing Homes were the most affected, with $936mn in debt affected by either defaults or distressed activity (23% of total default/distressed volume), followed by Economic/Industrial Development bonds ($916mn, 23%), and Healthcare ($813mn, 20%) (Figure 181).On a y/y basis, this represents a step down in sector concentration. For context, in 2022, activity was led by "General" credits (including the American Dream mall, the largest affected credit that year) which accounted for 34% of total default/distressed volume, followed by Nursing Homes ($1.1bn, 29%) and Development bonds ($653mn, 17%).

Senior living volumes remained elevated relative to other sectors after experiencing acute credit pressures during the pandemic. **On the revenue side, retirement communities faced increasing mortalities and struggled to attract new residents due to state-mandated lockdowns. At the same time, costs incurred to protect employees and residents surged, according to Moody's.**

Distressed activity was highest in the Development sector ($782mn, 36% of total distressed activity), which includes economic and industrial development bonds. Three separate $100mn+ biofuel refining/recycling credits accounted for 72% of this activity.

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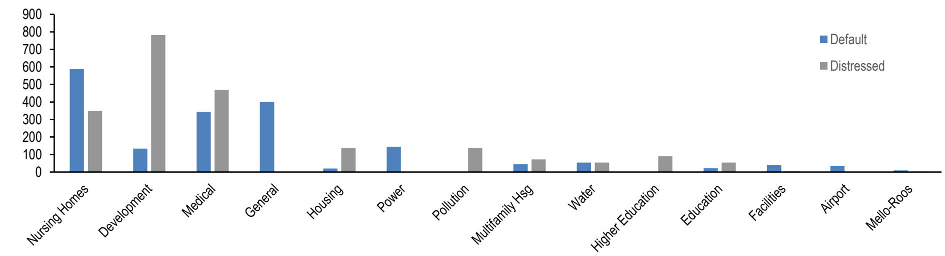
Figure 181: Default/distressed activity in 2023, in order of most affected sector

Volume, $mn

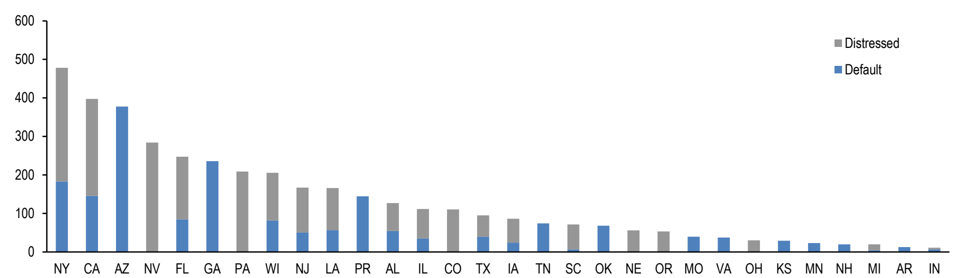


Source: Bloomberg Finance L.P., J.P. Morgan
Note: As of 12/05/23

While New York borrowers saw the highest level of default/distressed volume, totaling $478mn, this accounted for just 12% of total volume, followed by California ($397mn, 10%), Arizona ($377mn, 9%), Nevada ($284mn, 7%) and Florida ($247mn, 6%). **Notably, the largest distressed credit in 2023 - a healthcare system - accounted for over half ($285mn) of the volume in New York.** On average, New York has only accounted for 3% of combined default/distressed volume over the past five years.

Figure 182: By state, New York saw the highest level of default/distressed volume in 2023, driven by one distressed healthcare system

Volume, $mn



Source: Bloomberg Finance L.P., J.P. Morgan
Note: As of 12/05/23

In contrast, the high yield corporate bond market recorded $83.7bn of defaults/distressed exchange volume in 2023, a 75% increase y/y and the fourth largest annual total on record. **Notably, the $25.4bn of distressed exchange volume is the highest total in a calendar year since 2008 ($36.4bn) (Default Monitor, Jantzen).**

Our corporate high yield/leveraged loan research colleagues cite **heightened rate volatility**, **restrictive capital markets**, and an **uncertain growth outlook**, coupled with **large credit-specific defaults in the Healthcare sector** as the main catalysts for **rising corporate default rates in 2023**. They expect default rates to remain around their long-term averages over the next two years due to **rising corporate fundamental headwinds**, **restrictive rates**, **elevated distressed exchange activity**, **a contracting denominator for loans**, and a few **idiosyncratic issues**. On the other hand, they think that a **manageable near-term maturity schedule**, **improving capital markets**, a **smaller distressed universe**, and the **absence of a forecasted bond market contraction** should mitigate the extent to which default rates rise (Default Monitor, Jantzen).

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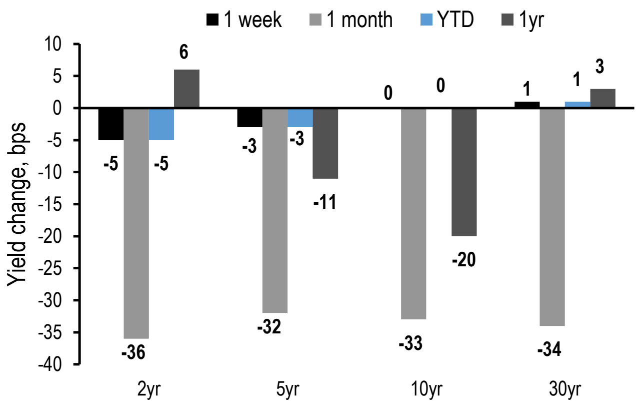
Markets at a glance

Figure 183: YTD, muni yields across the HG curve are down by 5-3-0bps in 2-5-10yrs and up 1bp in 30yrs



Source: Refinitiv, J.P. Morgan

Figure 184: Our updated forecast projects a 10yr municipal high-grade yield of 2.20% by year-end 2024

Yield, %

Treasury	1/5/2024	1mo Ahead Forecast	1Q24 Forecast	2Q24 Forecast	3Q24 Forecast	4Q24 Forecast
2yr	4.39	4.40	4.20	3.90	3.50	3.25
5yr	4.01	4.00	3.80	3.65	3.45	3.35
10yr	4.04	4.05	3.95	3.80	3.75	3.65
30yr	4.20	4.20	4.20	4.15	4.15	4.15
AAA Tax-exempt						
2yr	2.47	2.50	2.50	2.30	2.10	1.85
5yr	2.25	2.30	2.30	2.20	2.10	1.95
10yr	2.28	2.35	2.50	2.30	2.40	2.20
30yr	3.43	3.50	3.80	3.65	3.80	3.55
AAA / TSY Ratios						
2yr	56%	57%	60%	59%	60%	57%
5yr	56%	58%	61%	60%	61%	58%
10yr	56%	58%	63%	61%	64%	60%
30yr	82%	83%	90%	88%	92%	86%

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

Figure 185: The 10yr AA Muni/Corp ratio remains rich to historical averages

AAA tax-exempt yield / Treasury yield (%)						Z-score	
	Last	Min	Max	Mean	St. Dev.	3yr	5yr
2yr	56.4	56.4	73.5	64.8	5.7	-0.5	-0.4
5yr	56.6	56.6	74.2	65.7	5.7	-0.6	-0.4
10yr	57.1	57.1	74.8	66.7	6.2	*-1.6*	-0.9
30yr	83.0	83.0	92.3	88.1	2.2	-0.4	-0.6

AA corporate yield - AA tax-exempt yield (bp)						Z-score	
	Last	Min	Max	Mean	St. Dev.	3yr	5yr
3-5yr	213	169	217	193	11	*1.5*	*2.0*
5-7yr	219	181	221	200	9	*1.6*	*2.0*
7-10yr	223	184	224	203	10	*1.8*	*2.2*
25yr	141	96	141	115	8	*1.9*	*2.0*

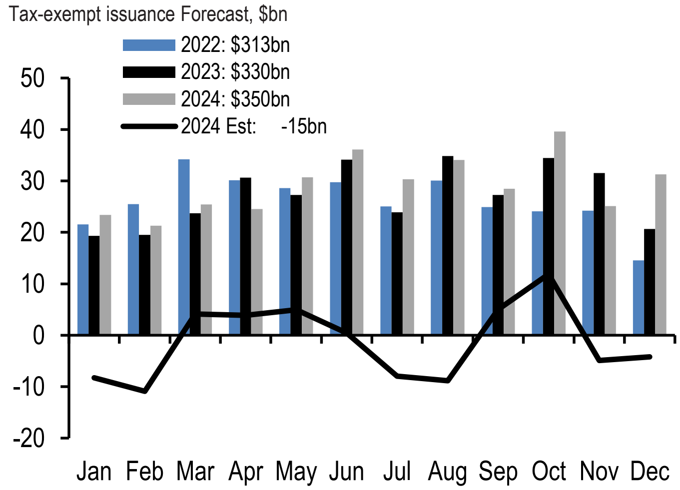
values over last 3 months displayed, as of , Z-Score +/- 1.5 Rich / Cheap

yy indicates rich   yy indicates cheap

Source: Refinitiv, J.P. Morgan. Note: As of 01/04/24

Figure 186: We project 2024 tax-exempt gross supply of $350bn with net supply of -$15bn

Tax-exempt issuance Forecast, $bn



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

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YTD Issuance and Trading Trends

Figure 187: 15-20yr maturities are about 30% of YTD issuance

Proportion of issuance, %

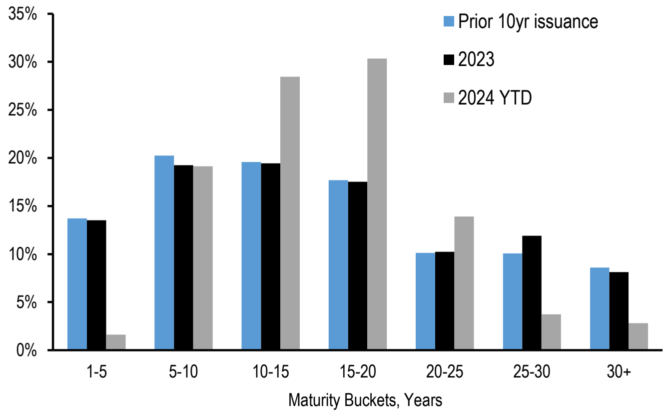


Figure 188: 48% of YTD issuance has been in 5-5.25% coupon bonds

Proportion of issuance, %

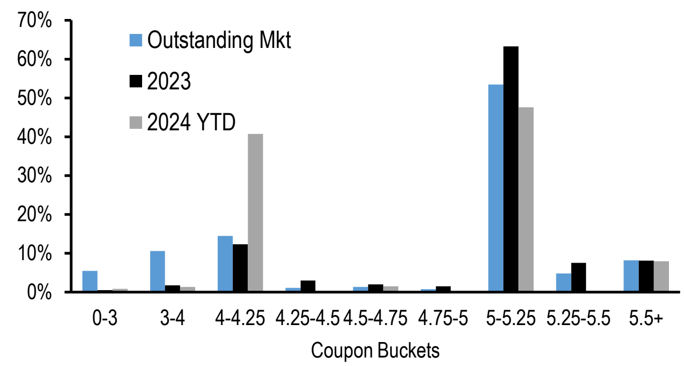


Figure 189: New money deals accounted for a larger proportion of issuance in 2023

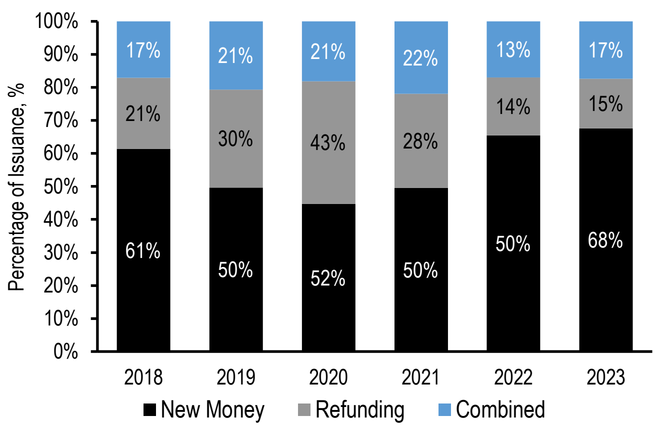
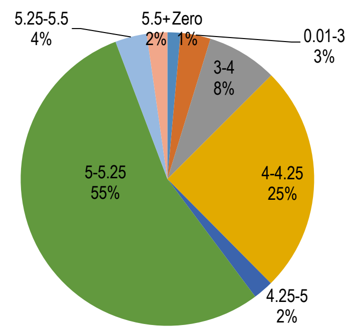


Figure 190: 5%-5.25% coupon bonds have accounted for the majority of YTD trading volume



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

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

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YTD total return and curve spreads

Figure 191: YTD total returns

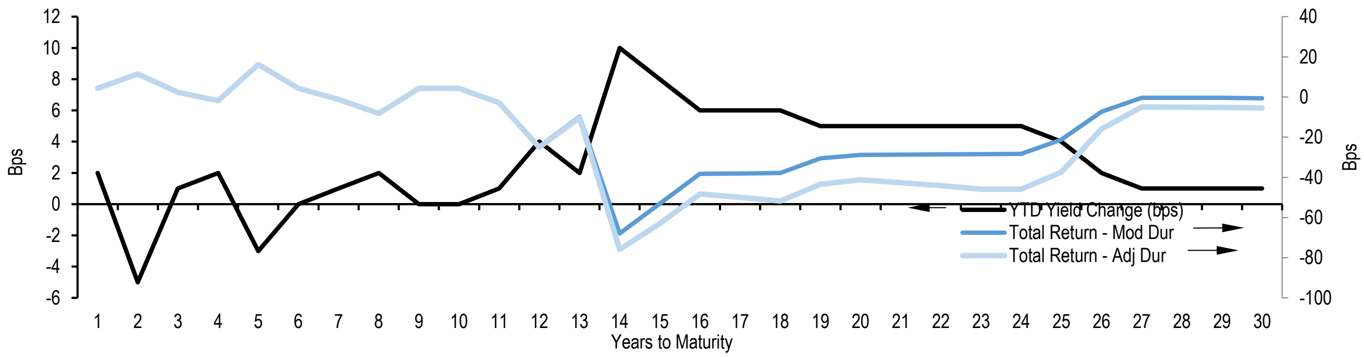


Figure 192: The 2s/30s at 96bps is 1.1 sigma above its one year average

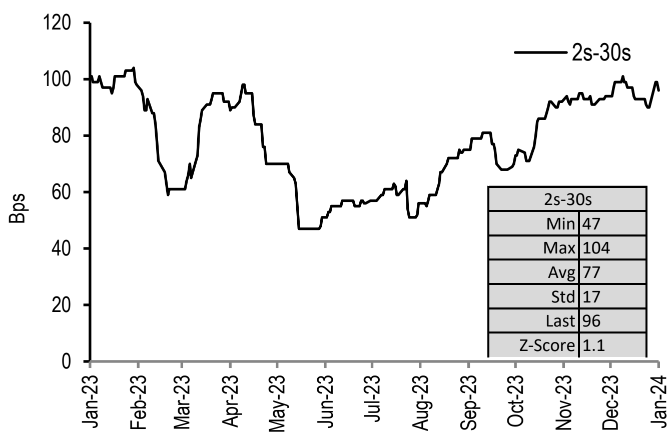


Figure 193: At 115bps, the 10s/30s curve is 1.9 sigma above its one year average

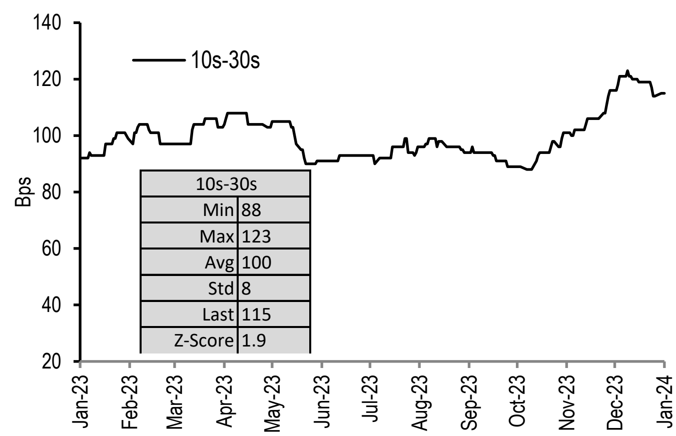


Figure 194: The 5s/10s curve is 0.1 sigma above its one year average

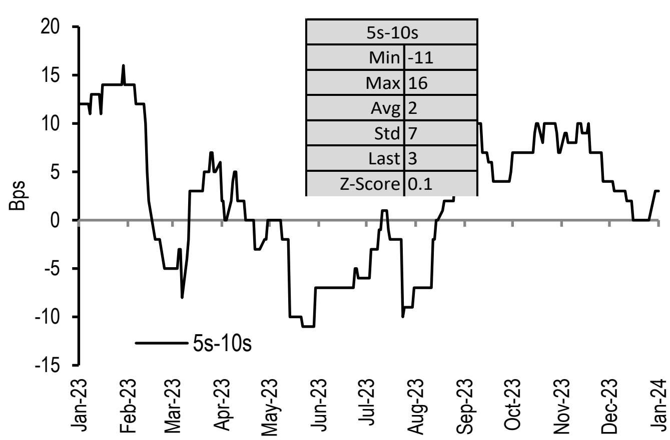
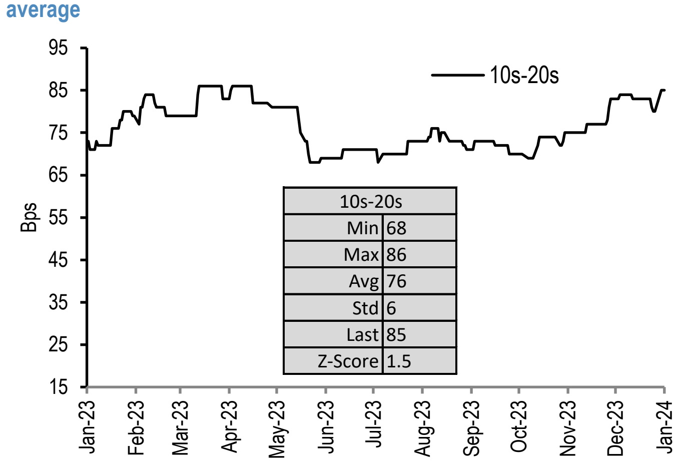


Figure 195: At 85bps, the 10s/20s curve is 1.5 sigma above its one year average



Source: Refinitiv Lipper, Bloomberg Finance L.P., J.P. Morgan. Note: As of 01/04/24

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Total return by state and sector

Figure 196: The average YTD total return for Bloomberg municipal bond indices by state is -0.13%

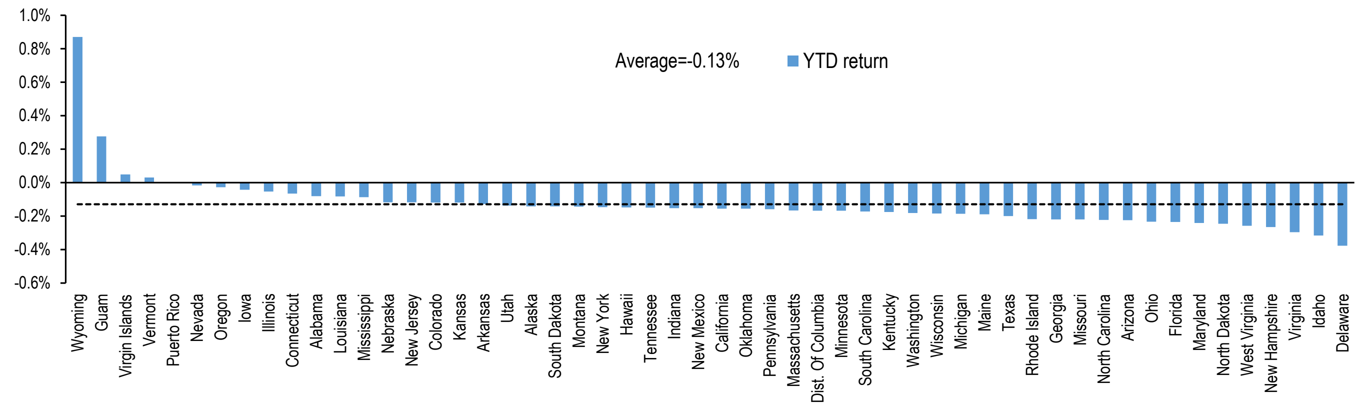


Figure 197: The broader municipal market has returned -0.16% YTD

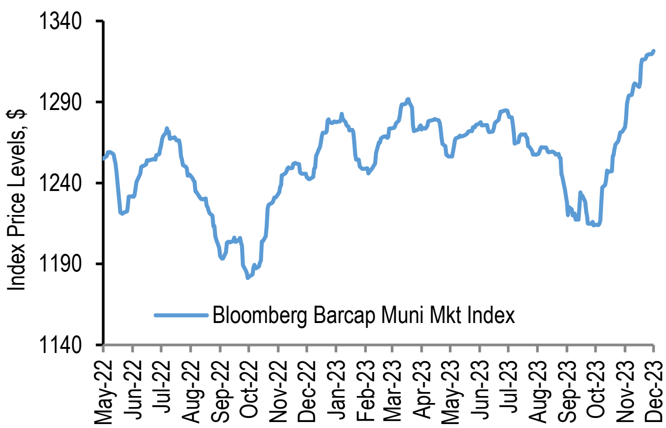


Figure 198: The Bloomberg muni index has returned 8.08% in the last three months

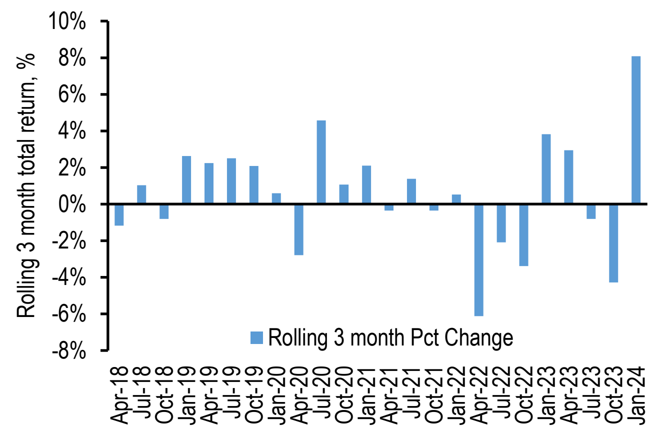


Figure 199: By category, HY munis have posted the worst YTD returns

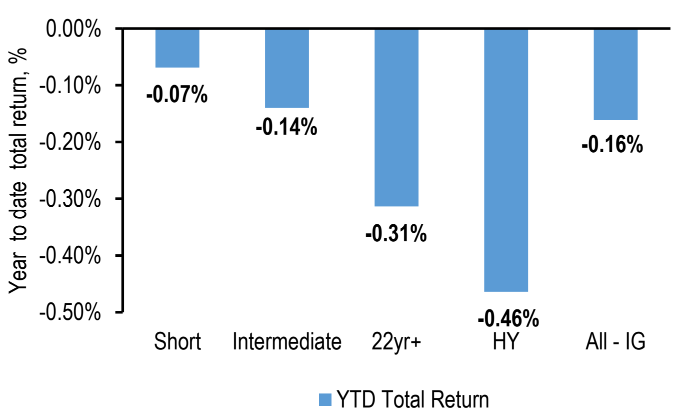
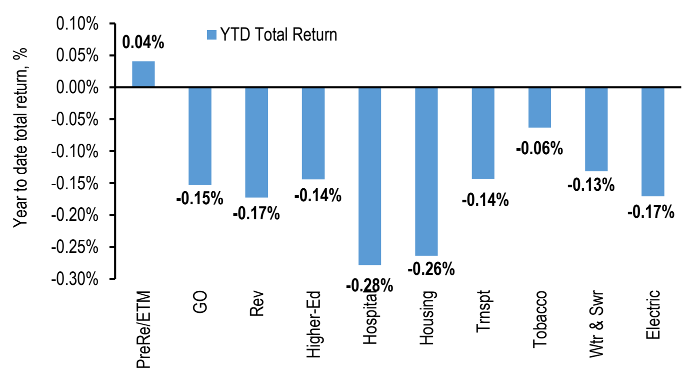


Figure 200: By sector, hospitals have exhibited the worst YTD returns



Source: Bloomberg Finance L.P., J.P. Morgan, as of 01/04/24.
Note: Total return calculated as the percentage change in index levels.
Bloomberg Municipal bond total return indices used.

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Glossary of Publication Topics

Sector Overviews

- Airports: 04/13/2018, 04/20/2018, 09/06/2019, 05/15/2020,06/11/2021, 01/10/2022, 02/11/2022, 08/19/2022, 07/28/2023
- Bond Insurance: 03/18/2016, 6/23/2017, 10/27/2017
- Double-Barreled Bonds: 05/13/2016, 6/24/2016, 05/13/2022
- Energy: 01/29/2016, 02/05/2016, 02/19/2016, 04/23/2021, 02/11/2022
- Environmental, Social, Governance (ESG) Bonds:06/01/2018, 10/22/2021
- Gas prepay: 3/10/2017, 06/07/2019, 3/10/2023, 3/24/2023
- Housing: 1/20/2017, 10/20/2017, 07/26/2019, 08/02/2019, 12/10/2021
- 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, 08/27/2021, 06/03/2022, 06/10/2022, 9/28/22, 4/28/23
- Higher-Education: 5/19/2017, 9/14/2018, 07/24/2020, 07/16/2021, 08/05/2022
- 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: 4/07/2017, 11/10/2017, 06/18/2021, 10/29/2021, 11/04/2022
- Low beta/defensive: 08/25/2017
- Office: 04/14/2023, 05/12/2023, 07/07/23
- Pensions: 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, 07/30/2021, 11/05/2021, 10/28/2022, 09/29/23
- Pre-refunded bonds: 1/29/2018
- Primary and secondary (K-12) education: 11/02/2018
- Public Power/Electric: 2/09/2018, 02/19/2021, 07/09/2021, 03/18/2022
- U.S. Ports: 04/15/2016, 05/20/2016, 11/18/2016, 04/06/2018, 10/15/2021
- 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, 05/20/2022
- States: 11/13/2020, 2/5/2021, 09/24/2021, 02/25/2022, 03/04/2022, 07/08/2022
- 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: 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, 08/06/2021, 10/22/2021, 11/12/2021, 04/08/2022, 06/03/2022, 07/29/2022, 08/05/2022
- Toll Roads: 9/16/2016, 5/12/2017, 09/15/2017, 07/10/2020, 07/15/2022
- Tobacco: 11/20/2015, 12/15/2017, 7/27/2018, 03/29/2019, 05/07/2021, 08/19/2022, 08/26/2022
- Water & Sewer: 05/06/2016, 6/24/2016, 02/02/2018, 12/17/2021

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: 9/23/2016, 2/10/2017, 04/13/2018, 10/25/2019, 02/07/2020, 06/12/2020, 10/23/2020, 02/19/2021, 10/01/2021, 05/13/2022, 10/14/22
- Detroit: 05/14/2021
- Dallas/Fort Worth & related credits: 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, 04/08/2022, 04/22/2022, 05/20/2022, 01/20/2023
- Puerto Rico: 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, 01/28/2022, 02/04/2022, 03/11/2022, 03/18/2022, 03/31/2023, 07/28/2023
- Santee Cooper / MEAG / Westinghouse Bankruptcy: 3/17/2017, 3/24/2017, 3/31/2017, 9/21/2018, 9/28/2018
- State of Alaska: 07/28/2017, 06/15/2018
- State of California & locals: 03/02/2018, 03/09/2018, 06/08/2018, 02/05/2021, 04/29/2022, 05/06/2022, 01/27/2023
- State of Connecticut & locals: 8/18/2017, 5/18/2018, 10/4/2019, 05/01/2020
- State of Illinois & related credits: 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, 05/20/2022

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- State of New York: 5/16/2014, 09/29/2017, 2/8/2019, 02/10/2023
- 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: 08/04/2017, 08/16/2019, 03/12/2021, 03/19/2021, 02/03/2023
- 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: 11/20/2015, 06/24/2016, 07/08/2016, 08/26/2016, 8/24/2018, 04/23/2020, 07/24/2020, 09/24/2021, 02/11/2022, 03/11/2022, 07/29/2022, 01/6/2023
- GO Security/Statutory Lien: 10/2/2015, 11/4/2016

Tax Policy

- AMT: 03/16/2018, 5/18/2018, 10/19/2018, 06/14/2019, 04/01/2022, 05/20/2022, 12/9/2022, 07/28/2023
- De minimis: 03/02/2018, 06/14/2019, 03/25/2022, 05/06/2022, 05/13/2022
- State and local tax (SALT) deduction cap: 1/26/2018, 7/6/2018,4/16/2021, 10/22/2021
- 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, 10/272017, 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, 09/17/2021
- CARES Act: 04/03/2020, 01/21/2022
- American Rescue Plan: 03/26/2021, 04/09/2021, 05/21/2021, 01/21/2022
- Inflation Reduction Act: 08/05/2022, 08/19/2022, 08/26/2022
- Infrastructure spending: 04/09/2021, 05/14/2021, 07/16/2021, 08/06/2021, 09/17/2021, 01/21/2022
- 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: 04/08/2016, 9/21/2018, 03/15/2019, 06/14/2019, 06/28/2019, 10/18/2019, 08/20/2021, 04/01/2022, 08/26/2022, 09/09/2022
- Federal Reserve Flow of Funds: 01/10/2020, 03/27/2020, 06/26/2020, 09/25/2020, 12/11/2020, 06/18/2021, 09/24/2021, 12/17/2021, 03/18/2022, 06/10/2022, 09/16/2022, 12/16/2022 , 12/15/2023
- Make-Whole Call: 04/22/2016, 07/12/2019
- Outflow cycle: 10/29/2021, 11/05/2021, 03/11/2022, 04/01/2022, 04/29/2022, 05/06/2022, 05/13/2022, 09/16/2022
- Short call bonds: 08/28/2015, 12/11/2015, 03/04/2016, 3/3/2017, 3/10/2017, 08/04/2017, 03/26/2021, 10/01/2021, 06/10/2022
- Taxable advance refunding: 09/13/2019, 10/25/2019, 10/16/2020, 10/01/2021
- Total Return & Performance: 05/13/2016, 06/10/2016, 5/19/2017, 07/07/2017, 11/10/2017, 02/23/2018, 1/4/2019, 01/10/2022, 04/08/2022
- Sovereign Government Relative Value: 09/09/2016, 01/19/2018, 8/17/2018
- State and Local revenues: 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, 01/29/2921, 06/18/2021, 11/12/2021, 03/25/2022, 09/09/2022, 11/10/22, 2/24/2023
- Appropriation debt: 8/19/2016

Municipal Market Outlook

- 2H23 Outlook
- 2024 Outlook

Weekly Updates

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

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Emerging Markets

- In EM fixed income, we are OW GBI-EM local rates, and are MW CEMBI and EMBIGD.
- EM bond flows were -\$568mn (-0.15% of weekly AUM, ↓ from -\$116mn).

EM credit spreads widened materially this week amid a surge in issuance. EMBIGD at 404bp rose by 18bp while CEMBI tightened on the margin by 2bp (286bp). At 6.29%, GBI-EM yields increased by 9bp. In terms of flows, outflows from EM bond funds re-accelerated this week, led by hard currency funds (-\$512mn, from -\$47mn). Outflows slowed on the margin in local currency funds (-\$56mn, from -\$69mn). ETFs saw outflows of -\$481mn (from -\$105mn), and non-ETF outflows increased as well (-\$87mn, from -\$11mn). Within local currency, EM ex-China bond fund saw small outflows (-\$18mn, from +\$142mn), while China-focused fund outflows continued (at -\$38mn) for the 51st consecutive week. Within hard currency, AsiaXJ funds' outflows continued (-\$99mn, from -\$119mn), while 'broad' EM funds tipped to large outflows (-\$414mn, from +\$72mn).

Asia Credit Outlook and Strategy 2024: The Year of an Awakening Dragon

We believe that 2024 will be the Year of an Awakening Dragon under the China Lunar calendar. Fundamentals could still come under pressure due to a challenging macro backdrop. But ratings pressure will be highly concentrated in select well-demarcated areas, while other sectors should remain on an even keel. Asia HY is also starting from a cleaner slate with much lower concentration in the problematic China property sector and a higher weighting in sectors with favorable or stable outlooks. While spreads are hovering close to the historical mean, yields are still near post-GFC highs and should remain appealing to Asia investors. Moreover, we estimate ~US\$120 billion of capital (or 13% of the JACI's market cap) will be returned to investors, setting up a rather favorable supply/demand dynamic. We expect the JACI to deliver ~8.5% total return on the assumptions of relatively flat spreads at SOT+239bp, and a 51bp drop in 7-yr yields. We turn agnostic between IG and HY, and within IG prefer corporates over financials, and long duration.

2023 ended up being a decent year. The year had a promising start on hopes of a Fed pivot and China reopening. This led to a strong start in 1Q23, but this quickly fizzled out as Fed fund rates were ratcheted up another 100bp in 2023. Fundamentals are less of a concern despite China macro headlines. Most financials and corporates remain resilient except for some well-telegraphed weak spots in China (e.g., China property and LGFVs) and idiosyncratic stories outside of China. Such fundamental resiliency and strong technical support set the stage for a strong recovery in 4Q23 with better visibility of Fed fund rates in 4Q23.The JACI ended the year 7.0% higher on a 38bp tightening in credit spreads and an 8bp drop in the 7-year UST yield.

Fundamentals remain largely intact. We expect credit trends to remain the same in 2024. Fundamentals for financials will likely remain stable despite different drivers across the region. Also, there is significant dichotomy between a country's largest banks – and the main issuers of USD bonds – and the rest of the financial system. As it has been the case thus far this year, IG corporate rating pressure remains benign outside of well-demarcated trouble areas If sovereign ratings are anchored, final ratings for two-thirds of Asia issuers benefit from uplift due to government ownership, providing another buffer against pressure on

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standalone ratings. We believe that HY is starting from a cleaner slate in 2024 as China HY real estate now only accounts for 12% of the JACI HY (or 0.9% of the JACI composite). HY corporate composition has also improved.The two largest HY corporate sectors are India renewables and Macau gaming, which are on our favorites list.

Valuations are attractive in yield terms. Current spreads at SOT+235 are 17bp tighter than the post-GFC average but can be justified by positive changes in composition; IG now makes up 86% of the index, up from the post-GFC average at 75%. Moreover, the current yield at 6.2% is still near the post-GFC high and should appeal to Asia investors that are more yield- rather than spread-focused. Such yields also look attractive relative to those of the local bond market, e.g., China IG bonds are yielding 350bp higher than onshore AAA-rated 5-year bonds.

Technicals are supportive. The wide yield differential between USD and local bond markets (such as CNY and INR) has also kept supply rather muted. This will likely remain the case in 2024 as we only expect ~US$120 billion of new supply, well below the US$300 billion raised in 2019-21. Such a level of supply would not even cover next year's maturities totaling US$199 billion. Including coupon payments, this means US$120 billion (~13% of the JACI's market capitalization) of capital being returned to investors in 2024, the third consecutive year of >US$100 billion of negative net financing. While we recognize that HY demand is still vulnerable to fund outflows, we believe that better market performance should eventually stem such outflows.

We expect spreads to move largely sideways and that will still translate into high double-digit returns with lower rates. We forecast the JACI's credit spread to end 2024 at SOT+239bp, almost flat to the current level. But the JACI should still turn in 8.5% total return as we expect 7-year UST yields to ease by 51bp to 3.35%, after factoring in 125bp of cuts in the Fed funds rate in 2024 (starting with a 25bp cut in June) and another 50bp in 1Q25. Obviously, our forecasts are sensitive to the UST yield forecast as every 25bp change could translate into a 1% swing in total return.

Key strategy and investment themes. We are turning agnostic between IG and HY, and within IG, prefer corporates over financials, and like the long-end of the credit curve. Our key investment themes are: 1) structural growth stories; 2) defensive sectors; 3) the lower part of the capital structure; 4) some credit curve plays; and 5) select distressed names.

For further detail, see *EM Asia Credit Outlook and Strategy 2024*, Soo Chong Lim et. al, January 4, 2024

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Forecast & Analytics

Interest rate forecast

	Actual 5-Jan	1m ahead 5-Feb	1Q24 31-Mar	2Q24 30-Jun	3Q24 30-Sep	4Q24 31-Dec
Rates (%)						
Effective funds rate	5.33	5.35	5.35	5.10	4.60	4.10
SOFR	5.32	5.35	5.35	5.10	4.65	4.15
2-yr Treasury	4.39	4.35	4.20	3.90	3.50	3.25
3-yr Treasury	4.17	4.15	3.95	3.70	3.40	3.20
5-yr Treasury	4.01	3.95	3.80	3.65	3.45	3.35
7-yr Treasury	4.03	4.00	3.80	3.65	3.45	3.35
10-yr Treasury	4.04	4.05	3.95	3.80	3.75	3.65
20-yr Treasury	4.35	4.35	4.30	4.25	4.20	4.15
30-yr Treasury	4.20	4.20	4.20	4.15	4.15	4.15
Spreads (bp)						
Fed funds/2yr	-94	-100	-115	-120	-110	-85
2s/10s	-35	-30	-25	-10	25	40
2s/5s	-38	-40	-40	-25	-5	10
5s/10s	3	10	15	15	30	30
5s/30s	19	25	40	50	70	80
10s/30s	16	15	25	35	40	50

Source: J.P. Morgan

Swap spread forecast*

* Forecast uses matched-maturity spreads
Source: J.P. Morgan

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TIPS real yield & breakeven forecast

	Actual 5-Jan-24	1Q24 31-Mar-24	2Q24 30-Jun-24	3Q24 30-Sep-24	4Q24 31-Dec-24
Breakevens (bp)					
5Y	221	215	210	210	220
10Y	223	220	215	215	220
30Y	222	220	220	220	220
Real yields (%)					
5Y	1.82	1.65	1.55	1.35	1.15
10Y	1.81	1.75	1.65	1.60	1.45
30Y	2.01	2.00	1.95	1.95	1.95
Curves (bp)					
5s/10s BE	2	5	5	5	0
10s/30s BE	-1	0	5	5	0
5s/10s yld	0	10	10	25	30
10s/30s yld	20	25	30	35	50

Source: J.P. Morgan

Economic forecast

%ch q/q, saar, unless otherwise noted

	23Q2	23Q3	23Q4	24Q1	24Q2	24Q3	24Q4	2022*	2023*	2024*
Gross Domestic Product										
Real GDP	2.1	4.9	2.0	1.3	0.5	0.5	0.8	0.7	2.8	0.7
Final Sales	2.1	3.6	2.9	1.4	0.3	0.3	1.0	1.0	3.3	0.7
Domestic Final Sales	2.0	3.5	2.9	1.4	0.6	0.6	1.4	0.8	3.0	1.0
Business Investment	7.4	1.4	5.3	2.0	1.9	1.8	2.9	5.6	5.0	2.1
Net Trade (% contribution to GDP)	0.0	0.0	-0.1	-0.1	-0.4	-0.4	-0.4	0.2	0.2	-0.3
Inventories (% contribution to GDP)	0.0	1.3	-0.9	-0.1	0.2	0.2	-0.3	-0.3	-0.5	0.0
Prices and Labor Cost										
Consumer Price Index	2.7	3.6	2.7	2.1	1.9	2.7	2.4	7.1	3.2	2.3
Core	4.7	2.8	3.3	3.1	2.8	2.6	2.6	6.0	4.0	2.8
Employment Cost Index	4.1	4.3	3.5	3.2	3.0	2.7	2.5	5.1	4.2	2.8
Unemployment Rate (%, sa)	3.6	3.7	3.8	3.9	4.0	4.2	4.3	-	-	-

* Q4/Q4 change

Source: J.P. Morgan

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Financial markets forecast

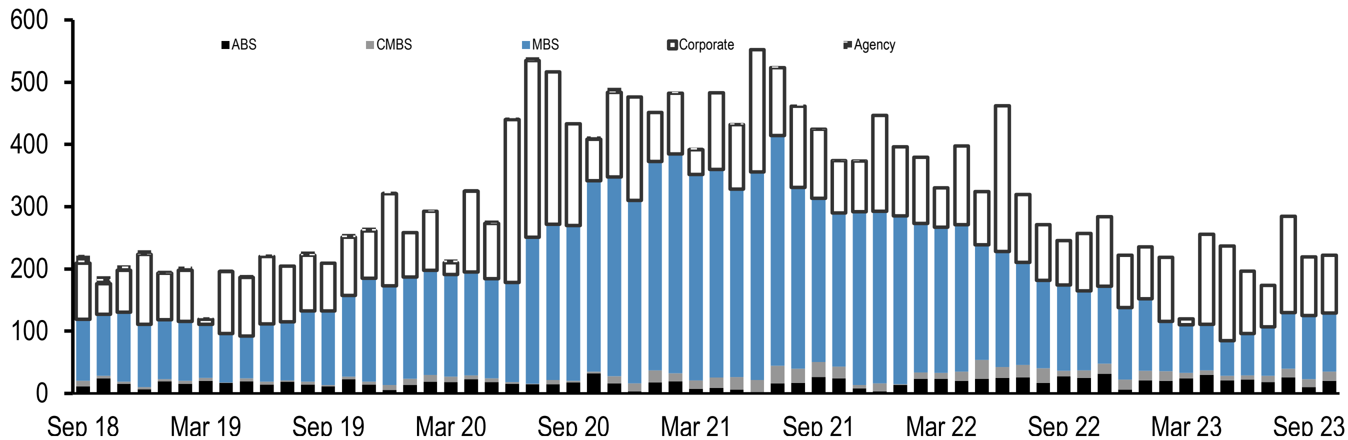
Credit Spread	Current	YE24
10-year SOFR swap spread (bp) †	-40	-32
FNMA 30yr 6% Front Tsy OAS (bp)	28	35
10yr conduit CMBS LCF AAA †	120	125
3-year AAA card ABS to Treasuries (bp)	55	45
JULI spread to Treasuries (bp)	118	125
High Yield Index	400	475
Emerging Market Index	404	475
Local currency: GBI-EM yield (%)	6.29%	5.76%

† Mid-year forecasts only
Source: J.P. Morgan

cont.

	Current	YE24
S&P 500 (level)†	4697	4200
Brent ($/bbl)	79	83
Gold ($/oz)	2045	2300
EUR/USD	1.09	1.05
USD/JPY	145	146

Gross fixed-rate product supply*

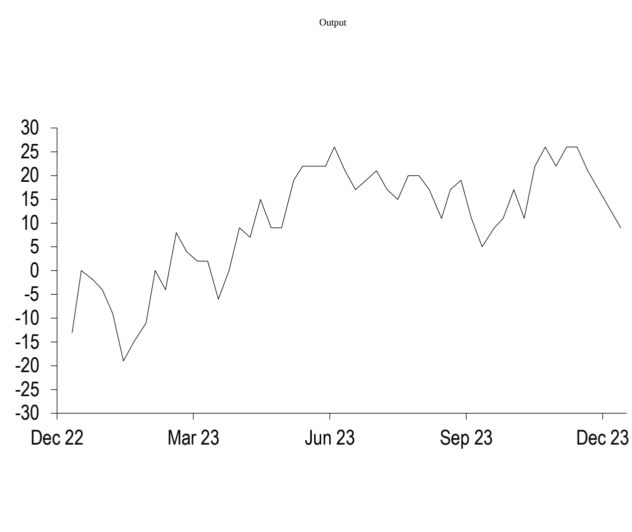


Treasury client survey

All Clients

	Long	Neutral	Short	Changes	Net longs
Jan 2, 2024	**22**	**65**	**13**	**19**	**9**
Dec 11, 2023	28	65	7	21	21
Dec 4, 2023	37	52	11	22	26
4-week avg	31	58	11		
52-week avg	23	63	14		

Source: J.P. Morgan



Source: J.P. Morgan

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Treasury net issuance forecast

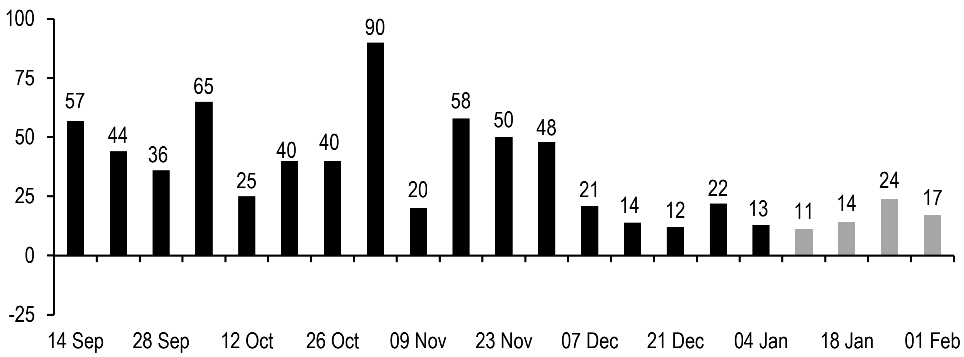
J.P. Morgan projection of net Treasury issuance to private investors, Federal Reserve purchases of Treasuries, and expected change in Treasuries held by private investors; $bn

Year	Net privately-held borrowing		Fed secondary market purchases		Net change in privately-held debt	
	Bills	Coupons	Bills	Coupons	Bills	Coupons
CY 2019	77	1133	169	77	-92	1056
CY 2020	2547	1752	160	2180	2387	-428
CY 2021	-1195	2898	0	957	-1195	1942
CY 2022	-35	1638	0	75	-35	1563
CY 2023	1935	1094	0	0	1935	1094
CY 2024	675	1905	0	0	675	1905

Source: J.P. Morgan, US Treasury, Federal Reserve Bank of New York

T-bill weekly net issuance

Weekly net issuance of T-bills, historical and JPM projections; $bn



Source: J.P. Morgan

Dealer inventories

Primary dealer positions in Treasuries*, with 5-year statistics; $bn

Maturity	Last	1w chg	5y avg	5y min	5y max	5y z-score
T-bills	65	14	46	-4	116	0.8
<2y	19	1	39	-17	97	-0.7
2-3y	7	3	5	-14	21	0.4
3-6y	56	4	27	-2	56	2.2
6-7y	15	0	12	-4	27	0.4
7-11y	18	-1	3	-10	22	2.4
>11y	48	0	45	27	62	0.5
11-21y	21	2				
>21y	25	0				
TIPS	18	1	12	1	22	1.2
FRNS	11	10	7	-14	28	0.6
Total	256	32	196	76	295	1.2

Source: Federal Reserve Board of New York
*Latest data as of 12/2023

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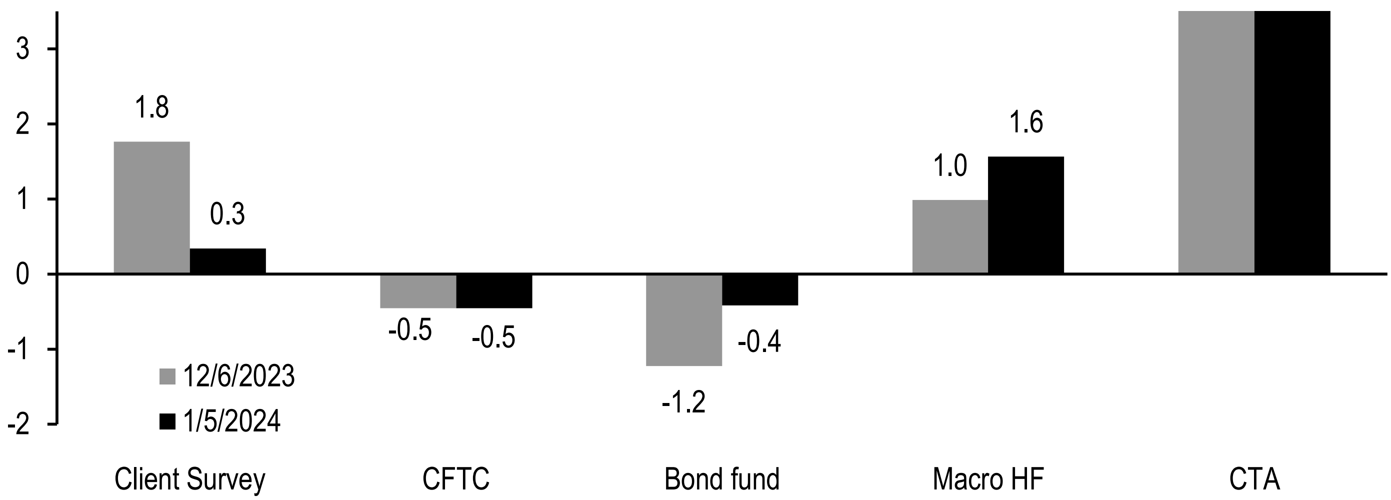
Investor position technical indicators

Current value of various position indicators* versus 1 month ago; 1-year z-score



Source: CFTC, Bloomberg Finance L.P, SG, HFR, J.P. Morgan
* JPM Client Survey refers to a 4-week moving average of our Treasury Client Survey Index; (Longs+Neutrals)/(Shorts+Neutrals), see *Survey Says: Using the Treasury Client Survey to predict rates moves*, 7/21/23for more details. CFTC refers to the non-commercial net longs in UST and ED futures contracts reported by the CFTC. CTA beta is the four-week partial beta of SG CTA Index to 10-year UST yields. Real money beta is the eight-week partial beta of excess returns of the 20 largest actively managed US core bond funds to 10-year UST yields. Macro HF beta is the six-week partial beta of HFRX Macro/CTA Index to 10-year UST yields

Treasury market functioning metrics

Various metrics of Treasury market functioning; units as indicated

Indicator	Today	1w chg	1y avg	1y min	1y max	1y z-score
Duration weighted mkt depth*; $mn	134	-59.1	161	52	225	-0.8
10y price impact**; 32nds	0.6	-0.2	0.9	0.4	1.3	-1.6
1m GC/OIS; bp	8.3	-6.3	4	-7.2	14.6	1.2
UST curve RMSE***; bp	3.4	0.2	3.1	2.3	4.1	1.0
10s/3x old 10s ASW; bp	-0.8	0.3	-0.8	-3.1	3.8	0.1
30s/3x old 30s ASW; bp	-1.7	0.1	-0.4	-2.2	1.2	-1.8

Source: J.P. Morgan
* Market depth is the sum of the three bids and offers by queue position, averaged between 8:30 and 10:30am daily
** Price impact defined as the average move in order book mid-price against a $100mn flow in traded notional. See *Drivers of price impact and the role of hidden liquidity*, J. Younger et al., 1/13/17 for more details.
*** Root Mean Square Error of J.P. Morgan par fitted Treasury curve (see *The new and improved Treasury par curve model*, 7/16/18)

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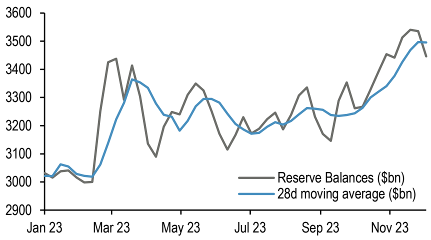
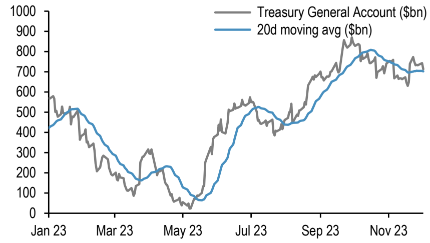
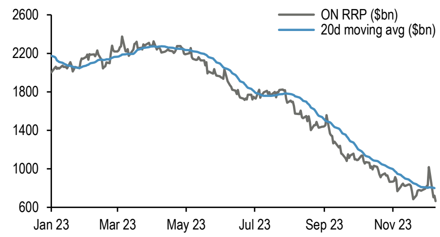
Select Federal Reserve balance sheet items







Select FRB Balance Sheet Items ($bn)	1/3/24	12/27/23	12/6/23	1/4/23	1wk Δ	1m Δ	1y Δ	1y avg	1y min	1y max	Percentile	Status**
Assets												
SOMA Holdings	7074	7111	7148	7999	-37	-75	-925	7546	7074	7999	0%	Narrow
T-bills	217	222	230	289	-6	-14	-73	263	217	289	0%	Narrow
Treasury Notes and Bonds	4045	4077	4091	4661	-32	-46	-616	4354	4045	4661	37%	Normal
Treasury FRNs	12	12	12	27	0	0	-16	19	12	27	0%	Narrow
TIPS	366	366	366	377	0	0	-12	369	365	377	49%	Normal
Federal Agency Debt	2	2	2	2	0	0	0	2	2	2	0%	Narrow
Agency MBS	2424	2424	2439	2633	0	-15	-209	2530	2424	2633	0%	Narrow
Agency CMBS	8	8	8	8	0	0	0	8	8	8	0%	Narrow
Total Assets	7681	7713	7737	8507	-32	-56	-826	8230	7681	8734	0%	Narrow
Discount Window Borrowings	2	2	2	4	0	0	-2	15	2	153	9%	Narrow
Liabilities												
Reserves	3263	3446	3513	2830	-184	-250	433	3239	2830	3541	60%	Normal
Treasury General Account	743	713	665	386	30	79	357	459	23	870	88%	Wide
Overnight RRP*	694	819	846	2230	-124	-152	-1535	1739	683	2375	1%	Narrow
Foreign RRP	366	347	338	332	19	28	34	339	289	385	75%	Wide
Other Deposits	161	165	160	214	-4	1	-53	182	151	227	19%	Narrow

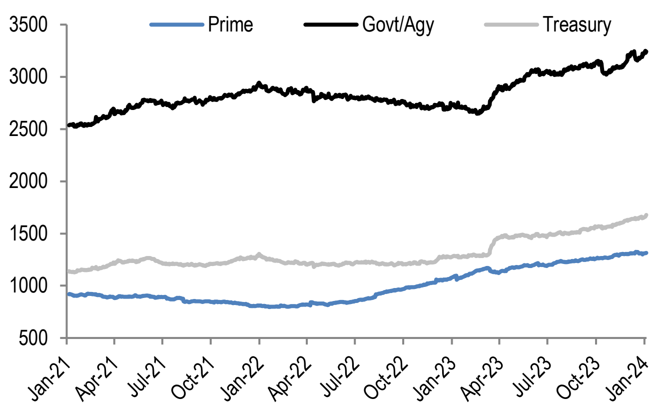
Source: Federal Reserve Bank, Bloomberg Finance L.P., J.P.Morgan

* Overnight RRP as of 01/5/24

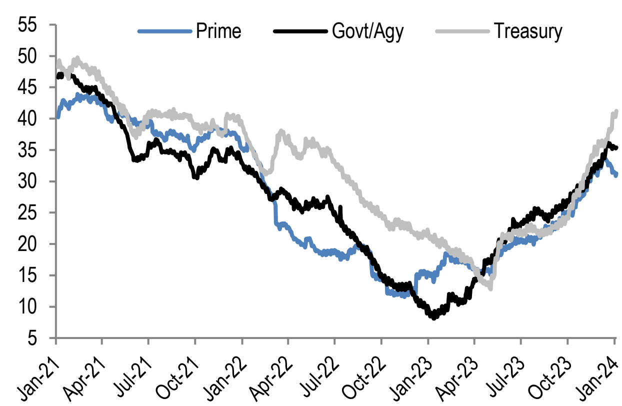
** Status: "Normal" means the current value is within 30-70% percentile over the past year. "Narrow" means the current value is within 10-30% percentile over the past year. "Wide" means the current value is within 70-90% percentile over the past year. A orange highlighted "Narrow" means the current value is less than 10% percentile over the past year. A orange highlighted "Wide" means the current value is greater than 90% percentile over the past year.

Money market funds

Assets under management ($bn)



Weighted average maturity (days)



Source: Crane Data, J.P. Morgan

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US funds flows

US Fund Flows ($mn)	Monthly					Weekly				
	Nov	Oct	Sep	Aug	Jul	1/3/2024	12/27/2023	12/20/2023	12/13/2023	12/6/2023
UST	348	25,395	11,746	14,783	12,517	3,475	546	(1,036)	(2,890)	(3,800)
Mutual	730	54	898	1,642	2,047	36	(164)	(119)	(334)	(399)
ETF	(382)	25,341	10,848	13,142	10,470	3,440	711	(917)	(2,556)	(3,400)
IG	8,430	(3,616)	187	15,439	16,902	2,876	3,406	(672)	3,979	1,429
Mutual	(2,580)	(6,006)	(1,132)	11,645	11,168	675	96	331	(304)	1,066
ETF	11,010	2,389	1,319	3,794	5,734	2,780	3,525	(204)	4,760	822
HY	13,205	(8,790)	(2,821)	(1,162)	2,106	(883)	419	(42)	1,981	1,483
Mutual	2,563	(4,211)	(1,804)	94	868	68	226	(509)	22	209
ETF	10,643	(4,579)	(1,017)	(1,256)	1,238	(951)	193	467	1,958	1,274
LL	1,490	(70)	1,309	1,136	797	(59)	350	53	250	254
Mutual	474	(45)	769	1,065	722	(283)	29	(433)	10	181
ETF	1,016	(25)	540	71	75	224	321	486	240	73
Municipal	702	(8,450)	(5,855)	(299)	2,657	(821)	(77)	541	(109)	(1,060)
Mutual	(3,738)	(10,777)	(7,446)	(1,564)	919	(388)	(417)	(211)	(298)	(652)
ETF	4,440	2,327	1,592	1,265	1,738	(433)	340	752	188	(409)
Inflation Protected	(3,761)	(2,667)	(1,466)	(3,154)	(258)	119	(943)	(1,723)	(435)	(1,256)
Mutual	(1,222)	(2,060)	(640)	(1,268)	(356)	42	(157)	(149)	(163)	(17)
ETF	(2,539)	(607)	(825)	(1,885)	98	77	(786)	(1,574)	(273)	(1,239)
MBS	1,371	1,759	820	1,472	2,495	111	(274)	(336)	141	(187)
Mutual	(720)	(737)	12	824	882	(77)	(108)	(247)	(267)	(857)
ETF	2,091	2,495	808	648	1,614	188	(166)	(89)	408	670
Agg	1,697	6,787	1,849	10,353	8,839	3,189	945	1,181	(171)	1,657
Mutual	(1,971)	1,406	(2,346)	7,300	7,416	876	88	(2,018)	(2,078)	(181)
ETF	1,055	581	669	880	(12)	2,314	857	3,199	1,908	1,838
Equities	23,487	(10,816)	11,366	(31,761)	8,652	3,917	17,491	(10,451)	25,921	5,509
Mutual	(49,332)	(33,891)	(21,579)	(39,918)	(33,362)	(4,000)	(1,276)	(2,785)	(20,430)	(9,191)
ETF	72,819	23,075	32,946	8,157	42,014	7,917	18,766	(7,666)	46,351	14,700
MMFs	226,280	(38,829)	92,992	94,692	37,669	67,565	12,193	(15,459)	(16,079)	67,902
Prime	31,475	18,070	15,984	11,766	37,040	4,433	(11,901)	10,059	(3,078)	10,310
Government	194,805	(56,899)	77,008	82,926	629	63,132	24,094	(25,518)	(13,001)	57,592

Source: EPFR, Crane Data, J.P. Morgan

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Market Movers Calendar

Monday	Tuesday	Wednesday	Thursday	Friday
8 Jan **Consumer credit**(3:00pm) Nov Atlanta Fed President Bostic speaks(12:00pm)	**9 Jan** **NFIB survey**(6:00am) Dec **International trade**(8:30am) Nov -$64.5bn Auction 3-year note $52bn Fed Vice Chair for Supervision Barr speaks(12:00pm)	**10 Jan** **Wholesale trade**(10:00am) Nov Auction 10-year note (r) $37bn New York Fed President Williams speaks(3:15pm)	**11 Jan** **CPI**(8:30am) Dec 0.2% Core 0.26% **Initial claims**(8:30am) w/e Jan 6 205,000 **Federal budget**(2:00pm) Dec Auction 30-year bond (r) $21bn Announce 20-year bond (r) $13bn Announce 10-year TIPS $18bn	**12 Jan** **PPI**(8:30am) Dec 0.3% Core 0.2% Minneapolis Fed President Kashkari speaks(10:00am)
15 Jan **Martin Luther King, Jr. Day, markets closed**	**16 Jan** **Empire State survey**(8:30am) Jan	**17 Jan** **Retail sales**(8:30am) Dec **Import prices**(8:30am) Dec **Business leaders survey**(8:30am) Jan **Industrial production**(9:15am) Dec **Business inventories**(10:00am) Nov **NAHB survey**(10:00am) Jan **Business inventories**(10:00am) Nov **Beige book**(2:00pm) Auction 20-year bond (r) $13bn	**18 Jan** **Housing starts**(8:30am) Dec **Initial claims**(8:30am) w/e Jan 13 **Philadelphia Fed survey**(8:30am) Jan Auction 10-year TIPS $18bn Announce 2-year note $60bn Announce 2-year FRN $28bn Announce 7-year note $41bn Announce 5-year note $61bn	**19 Jan** **Philadelphia Fed manufacturing**(8:30am) Jan **Consumer sentiment**(10:00am) Jan prelim **Existing home sales**(10:00am) Dec **TIC data**(4:00pm) Nov
22 Jan **Leading indicators**(10:00am) Dec	**23 Jan** **Richmond Fed survey**(10:00am) Jan Auction 2-year note $60bn	**24 Jan** **Philadelphia Fed nonmanufacturing**(8:30am) Jan **Manufacturing PMI**(9:45am) Jan flash **Services PMI**(9:45am) Jan flash Auction 2-year FRN $28bn Auction 5-year note $61bn	**25 Jan** **Real GDP**(8:30am) 4Q advance **Durable goods**(8:30am) Dec **Advance economic indicators**(8:30am) Dec **Initial claims**(8:30am) w/e Jan 20 **New home sales**(10:00am) Dec **KC Fed survey**(11:00am) Jan Auction 7-year note $41bn	**26 Jan** **Personal income**(8:30am) Dec **Pending home sales**(10:00am) Dec
29 Jan **Dallas Fed manufacturing**(9:30am) Jan	**30 Jan** **S&P/Case-Shiller HPI**(9:00am) Nov **FHFA HPI**(9:00am) Nov **Dallas Fed services**(9:30am) Jan **JOLTS**(10:00am) Nov **Consumer confidence**(10:00am) Jan **FOMC meeting**	**31 Jan** **ADP employment**(8:15am) Dec **Employment cost index**(8:30am) 4Q Announce 30-year bond $25bn Announce 20-year note $42bn Announce 3-year note $54bn **FOMC statement (2:00pm) and press conference (2:30pm)**	**1 Feb** **Productivity and costs**(8:30am) 4Q pre **Initial claims**(8:30am) w/e Jan 27 **Manufacturing PMI**(9:45am) Jan final **ISM manufacturing**(10:00am) Jan **Construction spending**(10:00am) Dec **Light vehicle sales** Jan	**2 Feb** **Employment**(8:30am) Jan **Factory orders**(10:00am) Dec **Consumer sentiment**(10:00am) Jan final

Source: Private and public agencies and J.P. Morgan. Further details available upon request.

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