J.P.Morgan

Post-FOMC rates update

To and fro the pendulum throws

- Yields fell 2-5bp and the broad curve steepened by 3bp end-to-end, with much of the move coming during Powell's post-meeting press conference, as he continued to strike a relatively dovish tone in describing his outlook for the economy. The 2pm developments were largely in line with expectations
- Given this outcome, and the rise in yields in recent days, we think there is limited scope over the near term for yields to move higher, as markets are pricing in a Fed path over the medium term that is more consistent with our own forecast. Accordingly, we recommend taking profits on 2s/5s/10s belly-cheapening butterflies
- Away from monetary policy, the FOMC announced it would start reserve management purchases on Friday, December 12th, in the form of T-bills, in order to maintain an ample level of reserves. We project purchases at a pace of \$40bn/month from mid-December through mid-April before stepping down to a pace of \$20bn/month
- We update our projection for the evolution of the Fed's balance sheet to reflect our updated forecasts for reserve management purchases, and expect reserves to increase to ~\$3.2tn by YE26, and for bank deposits to grow to above ~ \$19.5tn...
- … In light of our updated Fed balance sheet projections, we revise our midyear swap spread targets, but we still look for a modest narrowing from current levels and we still look for a modest flattening of the spread curve
- Front-loaded RMPs are expected to offset the typical reserve declines during the tax season and should maintain sufficient liquidity to stabilize repo markets through mid-April
- With RMPs starting immediately and funding markets remaining orderly, there is no longer a need for TOMOs or adjustments to administered rates (IORB or SRF) as year-end approaches
- The 2s/5s curve steepens into our 18-23bp favored target zone for the December-January period. We believe the curve has further upside to objectives near 30bp and 40bp in 1H26 but suspect the curve will likely consolidate into the early weeks of the year before resuming the longer-term steepening cycle
- Treasury will auction \$22bn reopened 30-year bonds at 1pm, unchanged in size from the last reopening auction in October. Given higher outright yields, fair valuations, and somewhat more supportive technicals, we think tomorrow's auction will likely be digested smoothly

Fixed Income Strategy

Jay Barry AC
(1-212) 834-4951
john.f.barry@jpmorgan.com

Jason Hunter AC
(1-212) 270-0034
jason.x.hunter@jpmorgan.com

Teresa Ho AC
(1-212) 834-5087
teresa.c.ho@jpmorgan.com

Phoebe White AC
(1-212) 834-3092
phoebe.a.white@jpmorgan.com

Ipek Ozil AC
(1-212) 834-2305
ipek.ozil@jpmorgan.com

Pankaj Vohra
(1-212) 834 5292
pankaj.x.vohra@jpmchase.com

Chris Hayward
(1-212) 622-6152
chris.hayward@jpmchase.com

Liam L Wash
(1-212) 834-5230
liam.wash@jpmchase.com

Amanda Berke
(1-212) 834-5739
amanda.berke@jpmorgan.com

Arjun Parikh
(1-212) 834-4436
arjun.parikh@jpmchase.com

Molly Herckis
(1-212) 622-0899
molly.herckis@jpmchase.com

Emre Alptuna
(1-212) 270-4843
emre.alptuna@jpmorgan.com
J.P. Morgan Securities LLC

Jay Barry AC (1-212) 834-4951
john.f.barry@jpmorgan.com
J.P. Morgan Securities LLC
Jason Hunter AC (1-212) 270-0034
jason.x.hunter@jpmorgan.com

Teresa Ho AC (1-212) 834-5087
teresa.c.ho@jpmorgan.com

Phoebe White AC (1-212) 834-3092
phoebe.a.white@jpmorgan.com

Market views

Yields fell 1-5bp and the broad curve steepened by 4bp end-to-end, with much of the move coming during Powell's post-meeting press conference. The 2pm developments were largely in line with expectations, as the Fed cut rates by 25bp, with two hawkish dissents to keep rates unchanged and one dovish dissent for a larger 50bp cut. The statement was also revised hawkishly, as expected, as the forward guidance was updated to include the phrase "the extent and timing" of additional adjustments, the same phrase that was added last December, just before the Committee went on an extended pause. In the SEP, the GDP growth forecast for next year was revised up by 0.5%-pt, while the inflation forecast was revised down modestly (**Figure 1**). The median dot continues to show one additional ease in each of the next two years, as we expected. Interestingly, the distribution of the 2025 dots suggests 4 additional soft hawkish dissents from non-voting participants, and the distribution of dots for 2026 shows a committee that remains fairly split around the median forecast (**Figure 2**).

Figure 1: The GDP growth forecast for next year was revised up by 0.5%-pt, while the inflation forecast was revised down modestly

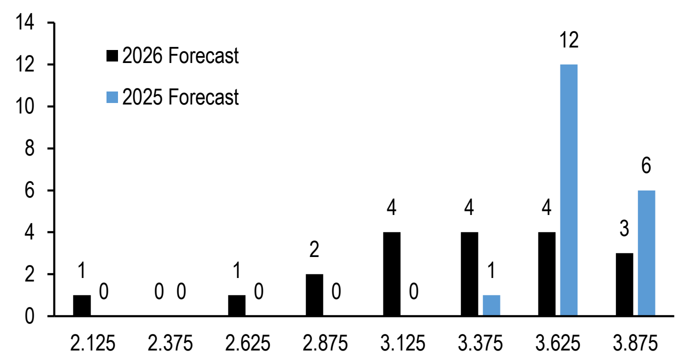
Federal Reserve Summary of Economic Projections, September 2025 vs December 2025

		2025	2026	2027	2028	Longer run
Real GDP	Dec 25	1.7	2.3	2	1.9	1.8
	Sep 25	1.6	1.8	1.9	1.8	1.8
Unemployment Rate	Dec 25	4.5	4.4	4.2	4.2	4.2
	Sep 25	4.5	4.4	4.3	4.2	4.2
Core PCE	Dec 25	3	2.5	2.1	2	
	Sep 25	3.1	2.6	2.1	2	
Fed funds rate	Dec 25	3.6	3.4	3.1	3.1	3
	Sep 25	3.6	3.4	3.1	3.1	3

Source: Federal Reserve

Figure 2: The SEP showed four additional soft hawkish dissents from non-voting participants

Distribution of projected midpoint of Fed funds target range for 2025 and 2026; number of participants



Source: Federal Reserve

In the post-meeting press conference, Powell noted that disagreement is what you would expect to see when the dual mandate goals are in tension, and explained that there was a "thoughtful and respectful" discussion at this week's meeting. Meanwhile, he continued to strike a relatively dovish tone in describing his outlook for the economy. Specifically, he reiterated that his base case is that the effects of tariffs on inflation will be relatively short-lived, while downside risks to the labor market has grown. He noted that payroll job growth has averaged 40K per month since April, but that a systematic overcount in these numbers by as much as 60K per month suggests job growth has likely been *contracting* by 20K per month. Against this backdrop, we believe that the likelihood of some soft numbers in the coming weeks should leave the Fed on track for an additional cut in January (see *The last of the insurance cuts*, Michael Feroli, 12/10/25).

Given this outcome, and the rise in yields in recent days, we think there is limited scope over the near term for yields to move higher, as markets are pricing in a Fed path over the medium term that is more consistent with our own forecast. 1y1y OIS has risen close to 3.20%, the highest levels since the weak July employment report led to a more dovish repricing of Fed expectations in midsummer (**Figure 3**). Our Fed forecast implies the Fed funds effective rate will trough closer to 3.35% over that period, suggesting the front end could cheapen another 15-20bp from current levels. However, given the

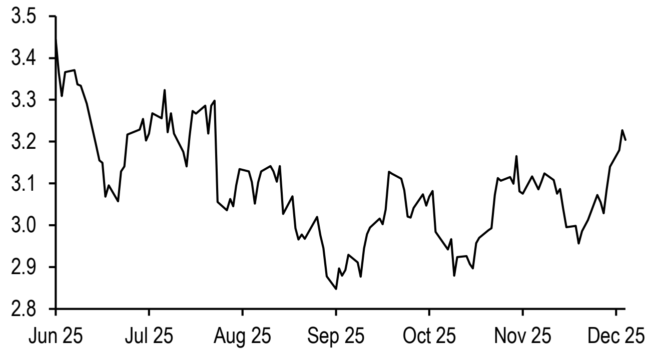
Jay Barry AC (1-212) 834-4951
john.f.barry@jpmorgan.com
J.P. Morgan Securities LLC
Jason Hunter AC (1-212) 270-0034
jason.x.hunter@jpmorgan.com

Teresa Ho AC (1-212) 834-5087
teresa.c.ho@jpmorgan.com
Phoebe White AC (1-212) 834-3092
phoebe.a.white@jpmorgan.com

downside risks to the labor market over the near term, we would not expect full convergence to our forecast locally. Accordingly, with intermediate yields 10-15bp higher than at the time of our *2026 Outlook*, we no longer recommend holding soft bearish trades, particularly because our *Treasury Client Survey* has retreated from historically long levels two weeks ago (**Figure 13**). Indeed, the 2s/5s/10s butterfly has cheapened 6bp over the period as the OIS curve has steepened and is now at its cheapest levels since late-April (**Figure 4**). **Accordingly, we recommend taking profits on 2s/5s/10s belly-cheapening butterflies (see Trade recommendations).**

Figure 3: Medium-term Fed expectations have risen to their highest levels since the weak July employment report...

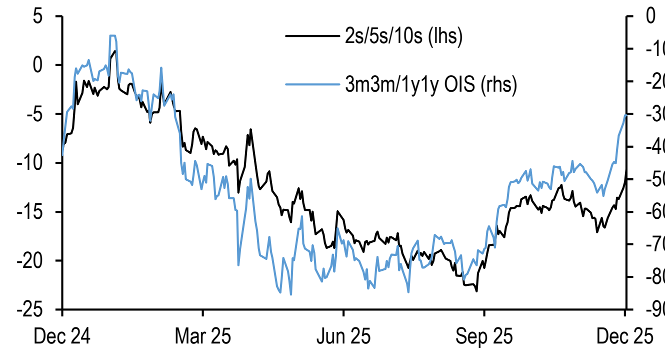
1y1y OIS; %



Source: J.P. Morgan

Figure 4: ...and the 5-year sector has moved to its cheapest levels since April as the OIS curve has steepened

2s/5s/10s Treasury butterfly (lhs, bp) versus 3m3m/1y1y OIS curve (rhs; bp)



Source: J.P. Morgan

Away from monetary policy, the FOMC announced it would start reserve management purchases (RMPs) via T-bills on Friday, December 12th in order to maintain an ample level of reserves. The Open Market Trading Desk plans to purchase $40bn of T-bills in the first month and “anticipates that the pace of RMPs will remain elevated for a few months to offset expected large increases in non-reserve liabilities in April. After that, the pace of total purchases will likely be significantly reduced in line with expected seasonal patterns in Federal Reserve liabilities.” In the press conference, Powell clarified that the growth in securities holdings is necessary “because the growth of the economy leads to rising demand over time for our liabilities, including currency and reserves... We have to keep reserves, call it constant, as it relates to the banking system, or to the whole economy. That alone calls for us to increase [holdings] about $20 billion to $25 billion per month.” **Given this guidance, we expect the Fed will purchase $40bn T-bills per month from mid-December through mid-April, to offset the sharp temporary drop in reserves around tax day, before stepping down to a pace of $20bn per month thereafter.** In addition, the Fed will reinvest roughly $15bn of MBS paydowns per month into T-bills via secondary market purchases. **Thus, we now project the Fed will purchase a total of $490bn T-bills in the secondary market in 2026, compared to a prior forecast of $280bn, and we now forecast just $274bn of net T-bill issuance net of Fed purchases.**

The New York Fed’s statement that if needed, these purchases could extend to “Treasury securities with remaining maturities of 3 years or less,” has led to some questions on whether the Fed is engaging in QE. We feel strongly that this subtle shift should not be construed as such. During the QE era, the Fed purchased Treasuries and MBS in order to drive longer-term interest rates and term premia lower, and reserve balances naturally grew to accommodate a larger asset base. Meanwhile, these purchases will be made at the front end to maintain an ample reserve regime. More practically, this pre-emptive

Jay Barry AC (1-212) 834-4951
john.f.barry@jpmorgan.com
J.P. Morgan Securities LLC
Jason Hunter AC (1-212) 270-0034
jason.x.hunter@jpmorgan.com

Teresa Ho AC (1-212) 834-5087
teresa.c.ho@jpmorgan.com

Phoebe White AC (1-212) 834-3092
phoebe.a.white@jpmorgan.com

announcement underscores that the Fed is attentive to disrupting the T-bill market over the near term, as we expect T-bill net issuance to total -$113bn over the next four weeks before turning positive in mid-January. Having the flexibility to buy short coupons will reduce the likelihood of short-term dislocations in T-bills.

Interest rate derivatives

Figure 5 shows our updated forecast for the Fed's balance sheet that reflects our revised outlook for RMPs discussed above. As the figure shows, we expect the Fed's balance sheet to increase to over $6.9tn in 2026 and reserves to increase to ~$3.2tn. As we noted in our 2026 Outlook (*Interest Rate Derivatives 2026 Outlook*, 11/25/2025), commercial deposits exhibit a strong correlation with reserves, and we now look for deposits to grow to above $19.5tn over the next year.

Figure 5: Our projection for the evolution of the Fed's balance sheet through YE26

Current* and projected total Fed balance sheet assets, RRP†, TGA, reserves, currency in circulation, and commercial bank deposits** through YE 2026, $bn

End-of-the-month	Fed Assets	RRP			TGA	Reserves	CIC	Commercial Bank Deposits
		O/N RRP	Foreign RRP	Total RRP				
Current	6,606	5	336	341	937	2,858	2,428	18,562
Dec-25	6,626	5	335	340	860	2,948	2,436	18,694
Jan-26	6,666	5	335	340	850	2,990	2,444	18,788
Feb-26	6,706	5	335	340	850	3,022	2,452	18,873
Mar-26	6,746	5	335	340	750	3,154	2,460	19,039
Apr-26	6,776	5	335	340	950	2,976	2,468	18,956
May-26	6,796	5	335	340	850	3,088	2,476	19,106
Jun-26	6,816	5	335	340	850	3,100	2,484	19,176
Jul-26	6,836	5	335	340	850	3,112	2,492	19,245
Aug-26	6,856	5	335	340	850	3,124	2,500	19,315
Sep-26	6,876	5	335	340	850	3,136	2,508	19,384
Oct-26	6,896	5	335	340	850	3,148	2,516	19,454
Nov-26	6,916	5	335	340	850	3,160	2,524	19,524
Dec-26	6,936	5	335	340	850	3,172	2,532	19,593

* Current as of 12/4/2025 Fed H.4 release
** Deposits as of 12/5/2025 Fed H.8 release
† Both ON and Foreign RRP are assumed to remain near current levels. O/N RRP is calculated as the difference between total RRP and foreign RRP
Source: J.P. Morgan, FRED, Federal Reserve H.4.1, Federal Reserve H.8

This is positive for swap spreads, and spreads have reacted as such, with the front end and long end widening by 2bp and 1bp, respectively. As a reminder, we view swap spreads through a term structure lens (for details, see *Term Funding Premium and the Term Structure of SOFR Swap Spreads*, 4/29/2024). One of the biggest drivers of this term structure is the cost of leverage, which we define as net marketable debt versus the amount of liquidity in the system to absorb this supply. An increase in this factor can pressure the swap spread curve to be more inverted and spreads to be narrower across the curve. With the announcement of RMPs (the size and and the timing) and with the Fed's balance sheet projected to grow by over $200bn in the first half of next year, we now expect this factor to only modestly increase from current levels (relative to our prior forecast). As a result, **we expect TFP to remain near current levels through 1H26** (**Figure 6**). For the reasons we outlined in our 2026 Outlook (*Interest Rate*

Jay Barry AC (1-212) 834-4951
john.f.barry@jpmorgan.com
J.P. Morgan Securities LLC
Jason Hunter AC (1-212) 270-0034
jason.x.hunter@jpmorgan.com

Teresa Ho AC (1-212) 834-5087
teresa.c.ho@jpmorgan.com

Phoebe White AC (1-212) 834-3092
phoebe.a.white@jpmorgan.com

Derivatives 2026 Outlook, 11/25/2025), we continue to expect spreads to trade slightly wider than fundamentals would indicate, and we incorporate this in our model by assuming that some of the current residual will persist through next year. Our updated projections for swap spreads are shown in **Figure 7**. **We continue to expect spreads to narrow slightly from current levels and still look for a modest flattening of the curve. Finally, we expect the 10-year sector to underperform the rest of the curve**.

Figure 6: We expect term funding premium to remain near current levels on a 1H26 horizon

Statistics from regressing* TFP (bp/year)** versus its drivers*** (units as indicated), current (12/10) and YE26 projected values for drivers of TFP, projected fair value (bp/year)†, and impact‡ of each driver on our projected value

	Model Info		Value of drivers		
Factor	Coeff	T-stat	Cur.	1H26	Impact
Marketable debt ex Fed / Fed assets	1.5	41.7	3.9	4.0	0.2
WAM (months)	0.2	21.0	70.2	70.1	0.0
Commercial bank deposits ($tn)	-0.7	-16.1	18.5	19	-0.3
5Yx5Y implied vol (bp/day)	0.2	8.7	5.4	5.9	0.1
Top 25 bond fund AUM ($tn)	-3.6	-8.6	0.96	1	-0.1
Intercept	-0.4	-0.9			
R-sq	89%				
Std. error	0.3				
Term funding premium - fair value			4.2	4.0	
Term funding premium - actual			4.0		

* Regression period from Nov 2020 to Nov 2025
** Term funding premium (TFP) is defined as the negative of the slope of a regression of maturity-matched swap spreads versus modified duration in benchmark sectors (2Y, 3Y, 5Y, 7Y, 10Y, 20Y, and 30Y) on any given day
*** Top 25 bond fund AUM ($tn) is defined as the AUM of the top 25 actively managed US core bond funds
† Projected fair value assumes 50% residual convergence
‡ Impact is defined as the projected change in each variable times the variable's partial beta in the above model
Source: J.P. Morgan, Bloomberg Finance L.P., Federal Reserve H.8, Federal Reserve H.4.1

Figure 7: We continue to look for modest narrowing in swap spreads and flatter swap spread curves

Current (12/10/2025) maturity-matched swap spreads (bp), term funding premium (bp/year)*, and zero-duration spreads (bp)* as well as our 1H26 projection** of maturity-matched swap spreads in various sectors; bp

	Mat. Matched Swap Spread	
Maturity	Current	1H26 (proj.)
2Y	-17.4	-20
3Y	-21.6	-26
5Y	-28.0	-33
7Y	-35.5	-41
10Y	-40.2	-47
20Y	-65.9	-70
30Y	-70.3	-75
TFP	4.0	4.0
ZDS	-10.3	-15

* Term funding premium (TFP) is defined in the footnote of the previous figure. Zero-duration spread (ZDS) is defined as the intercept from a regression of maturity-matched swap spreads versus modified duration in benchmark sectors (2Y, 3Y, 5Y, 7Y, 10Y, 20Y, and 30Y) on any given day. Final projections assume 50% residual convergence on TFP and ZDS
** Forecasts for maturity-matched swap spreads are calculated by adding the forecasts for the baseline term structure and forecasts for the deviations from this term structure
Source: J.P. Morgan

Short-term fixed income

With respect to the funding markets, the earlier and higher than expected RMPs led to a sharp rally in SOFR/FF across the IMM curve, particularly in the coming months through May 2026 (**Figure 8**). As noted during the press conference, the RMPs are front-loaded to accommodate the upcoming tax season which usually sees a sharp, but temporary drop of reserves in and around the April tax date of about $191bn based on the average over the past three years. The upcoming pace of purchases at $40bn/mo through mid-April amounts to $160bn of additional liquidity and keeps reserves at around $3tn—likely sufficient to prevent a material flare-up in the repo markets around that time, considering the SRF is also available to inject any additional liquidity as needed.

To that end, given the recent rise in EFFR, pulled higher by funding pressures seen in the repo markets, the immediate start to RMPs should provide relief to funding pressures seen over year-end. ON GC indications for funding over the turn has tightened from 4.25% to closer to 4.00% post-FOMC. While elevated at SRF + 25bp, it's not too far off from where GC was on October month-end (**Figure 9**). Funding markets have also behaved very well so far in December, with SOFR and TGCR trading above IORB but still inside of the upper end of the fed funds target range. More

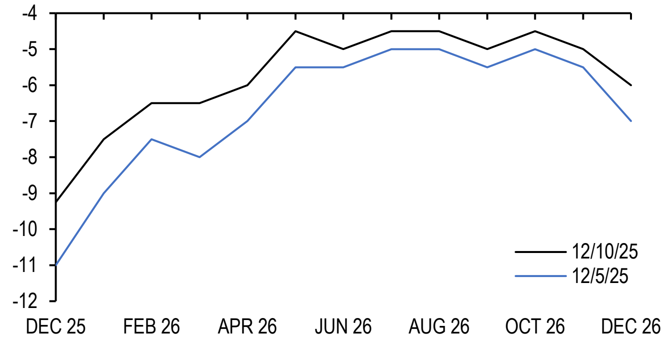
Jay Barry [AC] (1-212) 834-4951
john.f.barry@jpmorgan.com
J.P. Morgan Securities LLC
Jason Hunter [AC] (1-212) 270-0034
jason.x.hunter@jpmorgan.com

Teresa Ho [AC] (1-212) 834-5087
teresa.c.ho@jpmorgan.com
Phoebe White [AC] (1-212) 834-3092
phoebe.a.white@jpmorgan.com

importantly, EFFR has also continued to trade below IORB and 11bp below the upper end of the fed funds target range. All of this would suggest there is likely no need for TOMOs around year-end or any adjustments to administered rates (IORB or SRF).

Figure 8: An earlier and higher than expected RMPs led to a sharp rally in SOFR/FF across the IMM curve, particularly in the coming months through May 2026

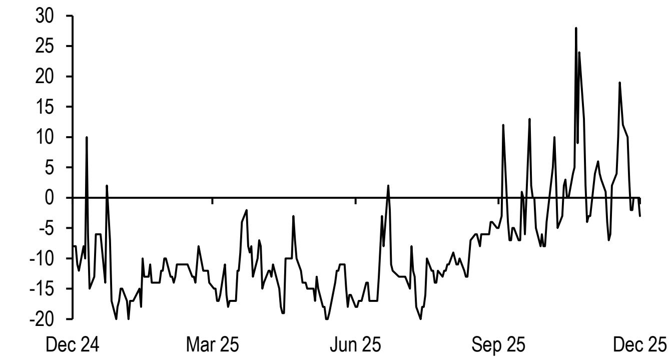
SOFR/FF basis, spot and forwards on 12/10/25 and 12/5/25; bp



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

Figure 9: ON GC indications for funding over the turn has tightened post-FOMC, but is not too far off from where GC was trading on October month-end

Overnight GC spread to the upper end of the fed funds target range; bp



Source: J.P. Morgan

Technical Analysis

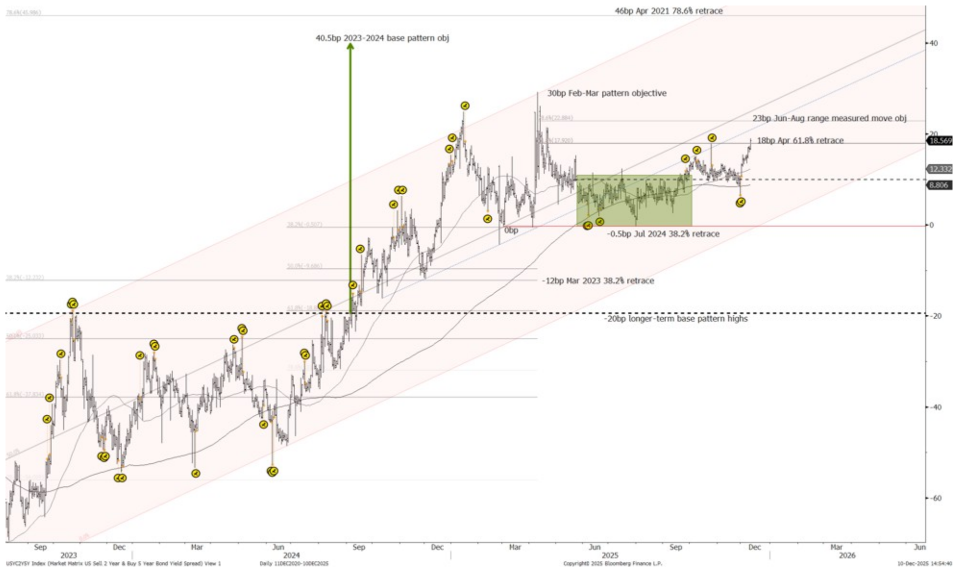
The **2s/5s curve** extends the steepening trend into our 18-23bp favored target zone for the December-January period. This area includes the April 61.8% retracement and the June-August range measured move objective (**Figure 10**). This most recent leg steeper followed a period of consolidation in October-November following the late-September breakout from the summertime range. The resulting stair-step pattern bolsters our outlook for further steepening in the first half of next year, but we suspect the curve may need to take another breather into the early weeks of the quarter within that process. To that end, we will look for pullbacks from the upper end of our near-term target zone to find support at the 15bp early-December breakout level going forward. Given the mix of our short- and medium-term outlook, we are suggesting scaling out of the steepening trade we've been holding since the summer at a tiny profit. We will look to re-enter that trade in the weeks ahead at lower levels and/or after a period of consolidation looks to have matured. We ultimately think the curve has upside potential to retest the 30bp Feb-Mar pattern objective and 40.5bp 2023-2024 base pattern measured move objective into the middle of the year. Alternatively, a sustained break below the 8-10bp support zone would derail the trend and leave the curve vulnerable to a setback to the next support near 0bp.

Jay Barry AC (1-212) 834-4951
john.f.barry@jpmorgan.com
J.P. Morgan Securities LLC
Jason Hunter AC (1-212) 270-0034
jason.x.hunter@jpmorgan.com

Teresa Ho AC (1-212) 834-5087
teresa.c.ho@jpmorgan.com
Phoebe White AC (1-212) 834-3092
phoebe.a.white@jpmorgan.com

Figure 10: The 2s/5s curve steepens into our 18-23bp favored target zone for the December-January period. We believe the curve has further upside to objectives near 30bp and 40bp in 1H26 but suspect the curve will likely consolidate into the early weeks of the year before resuming the longer-term steepening cycle.

2s/5s curve, daily bars with momentum divergence signals



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

30-year auction preview

Looking ahead to tomorrow, Treasury will auction $22bn reopened 30-year bonds at 1pm, unchanged in size from the last reopening auction in October. The last auction cleared 1.1bp cheap to pre-auction levels, as end-user demand fell by 5.8%-pts to 85.5% (**Figure 11**). Auction allotment data show this decline was concentrated among investment managers, whose takedown declined by 8.4%-pts to 67.0%, the lowest since September 2024, while foreign investor demand ticked up by 1.5%-pts to 15.7%, the highest since March 2024.

Thirty-year yields have increased 10bp since the last auction, and are now 15bp higher than local lows seen at the end of November. Meanwhile, the 5s/30s curve has steepened 4bp since the last auction, and now appears roughly 5bp too steep to our fair value framework, though this is well within the standard error of the model. Turning to position technicals, our *Treasury Client Survey* has receded from stretched levels, though it still suggests investors are net long, whereas our core bond fund index suggests money managers remain significantly underweight. **Given higher outright yields, fair valuations, and somewhat more supportive technicals, we think tomorrow's auction will likely be digested smoothly.**

Jay Barry AC (1-212) 834-4951
john.f.barry@jpmorgan.com
J.P. Morgan Securities LLC
Jason Hunter AC (1-212) 270-0034
jason.x.hunter@jpmorgan.com

Teresa Ho AC (1-212) 834-5087
teresa.c.ho@jpmorgan.com

Phoebe White AC (1-212) 834-3092
phoebe.a.white@jpmorgan.com

Figure 11: The November 30-year auction cleared 1.1bp cheap to pre-auction levels as end-user demand decreased by 5.8%-pts to 85.5%

Statistics for 30-year Treasury auctions; units as indicated

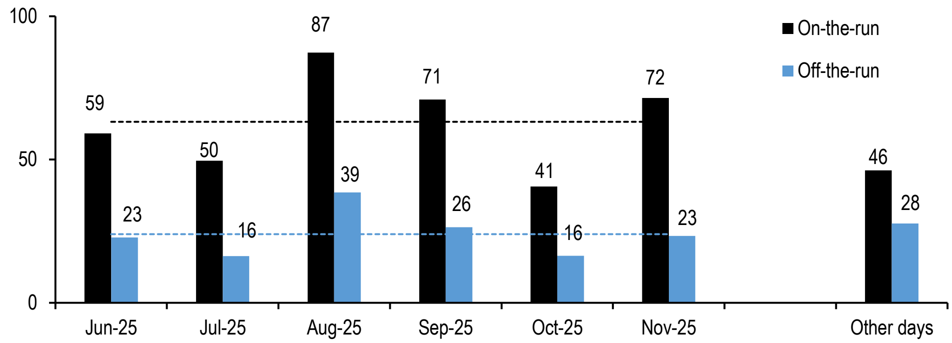
Date	Yield (%)	Size ($bn)	Tail (bp)	Bid/ cover	Direct (%)	Indirect (%)	End user (%)	Foreign (%)	Inv. mgr (%)
12-Jun	4.844	22	-1.3	2.43	23.4	65.2	88.6	11.4	74.1
10-Jul	4.889	22	0.1	2.38	27.4	59.8	87.2	9.3	75.3
07-Aug	4.813	25	2.1	2.27	23.0	59.5	82.5	12.3	67.1
11-Sep	4.651	22	0.2	2.38	28.0	62.0	90.0	14.1	73.1
09-Oct	4.734	22	0.5	2.38	26.9	64.5	91.3	13.2	75.4
13-Nov	4.694	25	1.1	2.29	14.5	71.0	85.5	15.7	67.0
3-aucn avg	4.693	23	0.6	2.35	23.1	65.8	89.0	14.4	71.8
6-aucn avg	4.771	23	0.5	2.36	23.9	63.7	87.5	12.7	72.0

Source: US Treasury, J.P. Morgan

As discussed in the past, daily trading volumes tend to spike on auction days. On average, 30-year on-the-run volumes were approximately 40% higher on auction days than non-auction days, whereas off-the-run volumes were 10% lower (**Figure 12**). That said, new issue auctions see a more pronounced spike in trading volumes, as over the past year on-the-run volumes were approximately 50% higher compared to non-auction days.

Figure 12: On-the-run volumes in the 30-year sector usually see a large spike on auction day

Daily Treasury volumes of 30-year on-the-run Treasuries versus 20- to 30-year off-the-runs on auction days versus other days*; $bn



*Six-month average; dashed lines represent auction day averages
Source: TRACE

Trade recommendations

- Unwind 2s/5s/10s belly-cheapening butterflies

- Unwind long 50% risk, or $67.4mn notional of T 3.5% Oct-27s
- Unwind short 100% risk, or $55.8mn notional of T 3.625% Oct-30s
- Unwind long 50% risk, or $15.4mn notional of T 4% Nov-35s
- (*US Fixed Income Markets 2026 Outlook*, 11/25/25: P/L since inception: 4.9bp)

For a list of closed Treasuries trades, please see Treasuries, *US Fixed Income Markets Weekly*, 11/14/25.

- 2s/5s curve: Exit 25% of 100% curve steepening trade at MKT, from 7.5bp roll adjusted average entry level. Exit another 25% near 20bp, and another 25% near 23bp. Trail the stop to 15bp for the balance.

For a list of closed Technicals trades, please see *Global Fixed Income Technicals Chartbook*, 11/14/25.

Jay Barry AC (1-212) 834-4951
john.f.barry@jpmorgan.com
J.P. Morgan Securities LLC
Jason Hunter AC (1-212) 270-0034
jason.x.hunter@jpmorgan.com

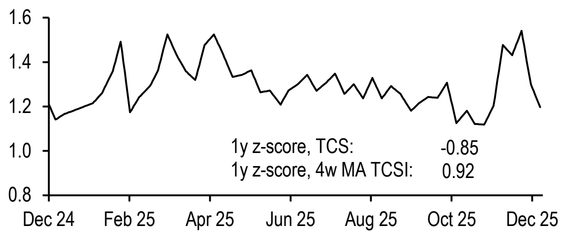
Teresa Ho AC (1-212) 834-5087
teresa.c.ho@jpmorgan.com

Phoebe White AC (1-212) 834-3092
phoebe.a.white@jpmorgan.com

Appendix: Position technicals overview

Figure 13: J.P. Morgan Treasury Client Survey

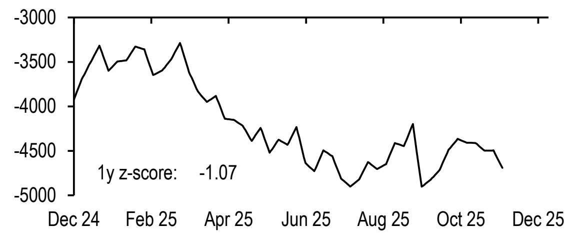
Treasury Client Survey Index*; %



Source: J.P. Morgan
*1yr z-score shown for both the Treasury Client Survey Net Longs as well as the 4 week moving average of the Treasury Client Survey Index. See *Survey Says: Using the Treasury Client Survey to predict rates moves*, 7/21/23

Figure 14: CFTC non-commercial positions

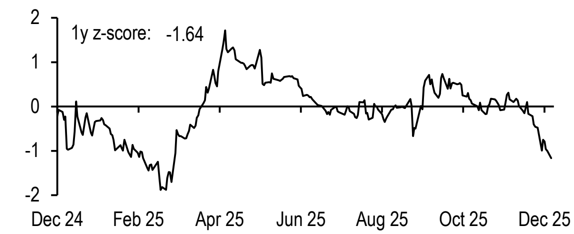
Net longs in SOFR and Treasury futures; 000s of TY equivalents



Source: CFTC, J.P. Morgan

Figure 15: CTA exposure to 10-year Treasuries

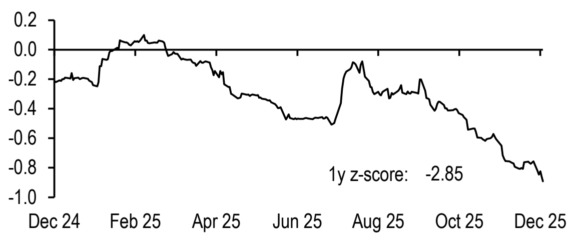
Partial beta with respect to the J.P. Morgan US 7-10Y bond index in our model for CTA returns*



Source: Bloomberg Finance L.P., SG, J.P. Morgan
* Model is a 1-month regression of daily excess returns on the CTA index versus daily excess returns on 1) J.P. Morgan US 7-10Y bond index, 2) J.P. Morgan ex-US Global Bond Index, 3) S&P 500 index, 4) J.P. Morgan global cash index, and 5) Goldman Sachs Commodities Index

Figure 16: Active Core Bond Fund* Managers' exposure to 10-year Treasuries

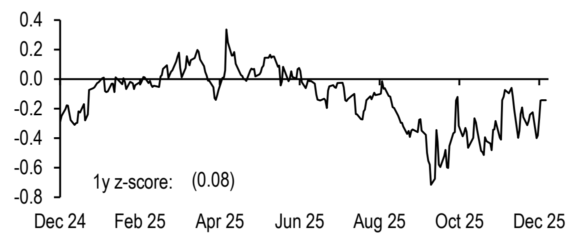
Partial beta with respect to 10-year US Treasury yields in our model for active bond fund excess returns**



Source: Bloomberg Finance L.P., J.P. Morgan
* The core bond fund index is comprised of the 25 largest (by assets under management) actively-managed US core bond funds ** Model is a 3-month regression of daily excess returns on the bond fund index versus daily changes in 1) 10-year US Treasury yields, 2) 5s/30s Treasury curve, 3) JULI spread to Treasury, 4) MBS current coupon Treasury OAS, and 5) 3Mx10Y swaption volatility

Figure 17: Macro Hedge Fund exposure to 10-year Treasuries

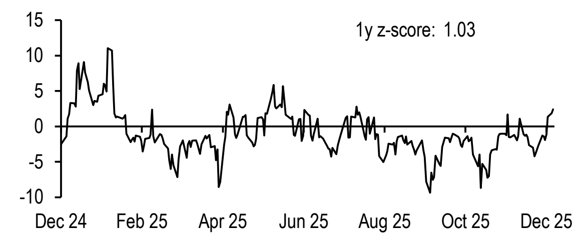
Partial beta with respect to the J.P. Morgan US 7-10Y bond index in our model for macro hedge fund returns*



Source: Bloomberg Finance L.P., HFR, J.P. Morgan
* Model is a six-week regression of daily excess returns on the HFRX Macro/CTA index versus daily excess returns on 1) J.P. Morgan US 7-10Y bond index, 2) J.P. Morgan ex-US Global Bond Index, 3) S&P 500 equity index, 4) MSCI G7 ex-US equity index, 5) J.P. Morgan global cash index, and 6) Goldman Sachs Commodities Index

Figure 18: T-note dollar weighed Put/Call ratio

The total (OI * settlement prices) of the individual T-note future Puts divided by the same calculation for Calls



Source: CFTC, Bloomberg Finance L.P., CQG, CME, J.P. Morgan

Jay Barry AC
(1-212) 834-4951
john.f.barry@jpmorgan.com

Analyst Certification: The Research Analyst(s) denoted by an "AC" on the cover of this report certifies (or, where multiple Research Analysts are primarily responsible for this report, the Research Analyst denoted by an "AC" on the cover or within the document individually certifies, with respect to each security or issuer that the Research Analyst covers in this research) that: (1) all of the views expressed in this report accurately reflect the Research Analyst's personal views about any and all of the subject securities or issuers; and (2) no part of any of the Research Analyst's compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed by the Research Analyst(s) in this report. For all Korea-based Research Analysts listed on the front cover, if applicable, they also certify, as per KOFIA requirements, that the Research Analyst's analysis was made in good faith and that the views reflect the Research Analyst's own opinion, without undue influence or intervention.

All authors named within this report are Research Analysts who produce independent research unless otherwise specified. In Europe, Sector Specialists (Sales and Trading) may be shown on this report as contacts but are not authors of the report or part of the Research Department.

Important Disclosures

Company-Specific Disclosures: Important disclosures, including price charts and credit opinion history tables (if applicable), are available for compendium reports and all J.P. Morgan–covered companies, and certain non-covered companies, by visiting https://www.jpmm.com/research/disclosures, calling 1-800-477-0406, or e-mailing research.disclosure.inquiries@jpmorgan.com with your request.

Explanation of Equity Research Ratings, Designations and Analyst(s) Coverage Universe:
J.P. Morgan uses the following rating system: Overweight (over the duration of the price target indicated in this report, we expect this stock will outperform the average total return of the stocks in the Research Analyst's, or the Research Analyst's team's, coverage universe); Neutral (over the duration of the price target indicated in this report, we expect this stock will perform in line with the average total return of the stocks in the Research Analyst's, or the Research Analyst's team's, coverage universe); and Underweight (over the duration of the price target indicated in this report, we expect this stock will underperform the average total return of the stocks in the Research Analyst's, or the Research Analyst's team's, coverage universe. NR is Not Rated. In this case, J.P. Morgan has removed the rating and, if applicable, the price target, for this stock because of either a lack of a sufficient fundamental basis or for legal, regulatory or policy reasons. The previous rating and, if applicable, the price target, no longer should be relied upon. An NR designation is not a recommendation or a rating. Some stocks under coverage have a rating but no price target; in these cases, we expect the stock will outperform/perform in line/underperform the average total return of the stocks in the Research Analyst's, or the Research Analyst's team's, coverage universe of the relevant duration of the region. In our Asia (ex-Australia and ex-India) and U.K. small- and mid-cap Equity Research, each stock's expected total return is compared to the expected total return of a benchmark country market index, not to those Research Analysts' coverage universe. If it does not appear in the Important Disclosures section of this report, the certifying Research Analyst's coverage universe can be found on J.P. Morgan's Research website, https://www.jpmorganmarkets.com.

J.P. Morgan Equity Research Ratings Distribution, as of October 04, 2025

	Overweight (buy)	Neutral (hold)	Underweight (sell)
J.P. Morgan Global Equity Research Coverage*	50%	38%	12%
IB clients**	50%	48%	35%
JPMS Equity Research Coverage*	48%	40%	12%
IB clients**	73%	69%	52%

***Please note that the percentages may not add to 100% because of rounding.**
****Percentage of subject companies within each of the "buy," "hold" and "sell" categories for which J.P. Morgan has provided investment banking services within the previous 12 months.**
For purposes of FINRA ratings distribution rules only, our Overweight rating falls into a buy rating category; our Neutral rating falls into a hold rating category; and our Underweight rating falls into a sell rating category. Please note that stocks with an NR designation are not included in the table above. This information is current as of the end of the most recent calendar quarter.

Equity Valuation and Risks: For valuation methodology and risks associated with covered companies or price targets for covered companies, please see the most recent company-specific research report at http://www.jpmorganmarkets.com, contact the primary analyst or your J.P. Morgan representative, or email research.disclosure.inquiries@jpmorgan.com. For material information about the proprietary models used, please see the Summary of Financials in company-specific research reports and the Company Tearsheets, which are available to download on the company pages of our client website, http://www.jpmorganmarkets.com. This report also sets out within it the material underlying assumptions used.

History of Investment Recommendations:
A history of J.P. Morgan investment recommendations disseminated during the preceding 12 months can be accessed on the Research & Commentary page of http://www.jpmorganmarkets.com where you can also search by analyst name, sector or financial instrument.

Analysts' Compensation: The research analysts responsible for the preparation of this report receive compensation based upon various factors, including the quality and accuracy of research, client feedback, competitive factors, and overall firm revenues.

Technical Research: Due to the nature of technical analysis, any securities mentioned in this publication may not be continuously followed by our technical analyst and may or may not be covered by our fundamental analysts. Accordingly, any analysis should be regarded as stand-alone analysis.

Other Disclosures

J.P. Morgan is a marketing name for investment banking businesses of JPMorgan Chase & Co. and its subsidiaries and affiliates worldwide.

UK MIFID FICC research unbundling exemption: UK clients should refer to UK MIFID Research Unbundling exemption for details of J.P. Morgan's implementation of the FICC research exemption and guidance on relevant FICC research categorisation.

All research material made available to clients are simultaneously available on our client website, J.P. Morgan Markets, unless specifically permitted by relevant laws. Not all research content is redistributed, e-mailed or made available to third-party aggregators. For all research material available on a particular stock, please contact your sales representative.

Any long form nomenclature for references to China; Hong Kong; Taiwan; and Macau within this research material are Mainland China; Hong Kong SAR (China); Taiwan (China); and Macau SAR (China).

J.P. Morgan Research may, from time to time, write on issuers or securities targeted by economic or financial sanctions imposed or administered by the governmental authorities of the U.S., EU, UK or other relevant jurisdictions (Sanctioned Securities). Nothing in this report is intended to be read or construed as encouraging, facilitating, promoting or otherwise approving investment or dealing in such Sanctioned Securities. Clients should be aware of their own legal and compliance obligations when making investment decisions.

Any digital or crypto assets discussed in this research report are subject to a rapidly changing regulatory landscape. For relevant regulatory advisories on crypto assets, including bitcoin and ether, please see https://www.jpmorgan.com/disclosures/cryptoasset-disclosure.

The author(s) of this research report may not be licensed to carry on regulated activities in your jurisdiction and, if not licensed, do not hold themselves out as being able to do so.

Exchange-Traded Funds (ETFs): J.P. Morgan Securities LLC ("JPMS") acts as authorized participant for substantially all U.S.-listed ETFs. To the extent that any ETFs are mentioned in this report, JPMS may earn commissions and transaction-based compensation in connection with the distribution of those ETF shares and may earn fees for performing other trade-related services, such as securities lending to short sellers of the ETF shares. JPMS may also perform services for the ETFs themselves, including acting as a broker or dealer to the ETFs. In addition, affiliates of JPMS may perform services for the ETFs, including trust, custodial, administration, lending, index calculation and/or maintenance and other services.

Options and Futures related research: If the information contained herein regards options- or futures-related research, such information is available only to persons who have received the proper options or futures risk disclosure documents. Please contact your J.P. Morgan Representative or visit https://www.theocc.com/components/docs/riskstoc.pdf for a copy of the Option Clearing Corporation's Characteristics and Risks of Standardized Options or https://www.finra.org/sites/default/files/2020-08/Security_Futures_Risk_Disclosure_Statement_2020.pdf for a copy of the Security Futures Risk Disclosure Statement.

Changes to Interbank Offered Rates (IBORs) and other benchmark rates: Certain interest rate benchmarks are, or may in the future become, subject to ongoing international, national and other regulatory guidance, reform and proposals for reform. For more information, please consult: https://www.jpmorgan.com/global/disclosures/interbank_offered_rates

Private Bank Clients: Where you are receiving research as a client of the private banking businesses offered by JPMorgan Chase & Co. and its subsidiaries ("J.P. Morgan Private Bank"), research is provided to you by J.P. Morgan Private Bank and not by any other division of J.P. Morgan, including, but not limited to, the J.P. Morgan Corporate and Investment Bank and its Global Research division.

Legal entity responsible for the production and distribution of research: The legal entity identified below the name of the Reg AC Research Analyst who authored this material is the legal entity responsible for the production of this research. Where multiple Reg AC Research Analysts authored this material with different legal entities identified below their names, these legal entities are jointly responsible for the production of this research. Where more than one legal entity is listed under an analyst's name, the first legal entity is responsible for the production unless stated otherwise. Research Analysts from various J.P. Morgan affiliates may have contributed to the production of this material but may not be licensed to carry out regulated activities in your jurisdiction (and do not hold themselves out as being able to do so). Unless otherwise stated below in the legal entity disclosures, this material has been distributed by the legal entity responsible for production, or where more than one legal entity is listed under the analyst's name, the first legal entity will be responsible for distribution. If you have any queries, please contact the relevant Research Analyst in your jurisdiction or the entity in your jurisdiction that has distributed this research material.

Legal Entities Disclosures and Country-/Region-Specific Disclosures:
Argentina: JPMorgan Chase Bank N.A Sucursal Buenos Aires is regulated by Banco Central de la República Argentina ("BCRA"- Central Bank of Argentina) and Comisión Nacional de Valores ("CNV"- Argentinian Securities Commission - ALYC y AN Integral N°51).

Australia: J.P. Morgan Securities Australia Limited ("JPMSAL") (ABN 61 003 245 234/AFS Licence No: 238066) is regulated by the

Australian Securities and Investments Commission and is a Market Participant of ASX Limited, a Clearing and Settlement Participant of ASX Clear Pty Limited and a Clearing Participant of ASX Clear (Futures) Pty Limited. This material is issued and distributed in Australia by or on behalf of JPMSAL only to "wholesale clients" (as defined in section 761G of the Corporations Act 2001). A list of all financial products covered can be found by visiting https://www.jpmm.com/research/disclosures. J.P. Morgan seeks to cover companies of relevance to the domestic and international investor base across all Global Industry Classification Standard (GICS) sectors, as well as across a range of market capitalisation sizes. If applicable, in the course of conducting public side due diligence on the subject company(ies), the Research Analyst team may at times perform such diligence through corporate engagements such as site visits, discussions with company representatives, management presentations, etc. Research issued by JPMSAL has been prepared in accordance with J.P. Morgan Australia's Research Independence Policy which can be found at the following link: J.P. Morgan Australia - Research Independence Policy.

Brazil: Banco J.P. Morgan S.A. is regulated by the Comissao de Valores Mobiliarios (CVM) and by the Central Bank of Brazil. Ombudsman J.P. Morgan: 0800-7700847 / 0800-7700810 (For Hearing Impaired) / ouvidoria.jp.morgan@jpmchase.com.

Canada: J.P. Morgan Securities Canada Inc. is a registered investment dealer, regulated by the Canadian Investment Regulatory Organization and the Ontario Securities Commission and is the participating member on Canadian exchanges. This material is distributed in Canada by or on behalf of J.P.Morgan Securities Canada Inc.

Chile: Inversiones J.P. Morgan Limitada is an unregulated entity incorporated in Chile.

China: J.P. Morgan Securities (China) Company Limited has been approved by CSRC to conduct the securities investment consultancy business.

Colombia: Banco J.P. Morgan Colombia S.A. is supervised by the Superintendencia Financiera de Colombia (SFC).

Dubai International Financial Centre (DIFC): JPMorgan Chase Bank, N.A., Dubai Branch is regulated by the Dubai Financial Services Authority (DFSA) and its registered address is Dubai International Financial Centre - The Gate, West Wing, Level 3 and 9 PO Box 506551, Dubai, UAE. This material has been distributed by JP Morgan Chase Bank, N.A., Dubai Branch to persons regarded as professional clients or market counterparties as defined under the DFSA rules.

European Economic Area (EEA): Unless specified to the contrary, research is distributed in the EEA by J.P. Morgan SE ("JPM SE"), which is authorised as a credit institution by the Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB). JPM SE is a company headquartered in Frankfurt with registered address at TaunusTurm, Taunustor 1, Frankfurt am Main, 60310, Germany. The material has been distributed in the EEA to persons regarded as professional investors (or equivalent) pursuant to Art. 4 para. 1 no. 10 and Annex II of MiFID II and its respective implementation in their home jurisdictions ("EEA professional investors"). This material must not be acted on or relied on by persons who are not EEA professional investors. Any investment or investment activity to which this material relates is only available to EEA relevant persons and will be engaged in only with EEA relevant persons.

Hong Kong: J.P. Morgan Securities (Asia Pacific) Limited (CE number AAJ321) is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission in Hong Kong, and J.P. Morgan Broking (Hong Kong) Limited (CE number AAB027) is regulated by the Securities and Futures Commission in Hong Kong. JP Morgan Chase Bank, N.A., Hong Kong Branch (CE Number AAL996) is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission, is organized under the laws of the United States with limited liability. Where the distribution of this material is a regulated activity in Hong Kong, the material is distributed in Hong Kong by or through J.P. Morgan Securities (Asia Pacific) Limited and/or J.P. Morgan Broking (Hong Kong) Limited.

India: J.P. Morgan India Private Limited (Corporate Identity Number - U67120MH1992FTC068724), having its registered office at J.P. Morgan Tower, Off. C.S.T. Road, Kalina, Santacruz - East, Mumbai – 400098, is registered with the Securities and Exchange Board of India (SEBI) as a 'Research Analyst' having registration number INH000001873. J.P. Morgan India Private Limited is also registered with SEBI as a member of the National Stock Exchange of India Limited and the Bombay Stock Exchange Limited (SEBI Registration Number – INZ000239730) and as a Merchant Banker (SEBI Registration Number - MB/INM000002970). Telephone: 91-22-6157 3000, Facsimile: 91-22-6157 3990 and Website: http://www.jpmipl.com. JPMorgan Chase Bank, N.A. - Mumbai Branch is licensed by the Reserve Bank of India (RBI) (Licence No. 53/ Licence No. BY.4/94; SEBI - IN/CUS/014/ CDSL : IN-DP-CDSL-444-2008/ IN-DP-NSDL-285-2008/ INBI00000984/ INE231311239) as a Scheduled Commercial Bank in India, which is its primary license allowing it to carry on Banking business in India and other activities, which a Bank branch in India are permitted to undertake. For non-local research material, this material is not distributed in India by J.P. Morgan India Private Limited. Compliance Officer: Pranav Sata; pranav.d.sata@jpmchase.com; +912261573209. Grievance Officer: Ramprasadh K, jpmipl.research.feedback@jpmorgan.com; +912261573000. Registration granted by SEBI and certification from NISM in no way guarantee performance of the intermediary or provide any assurance of returns to investors. Please visit Terms and Conditions and Most Important Terms and Conditions (MITC). The annual Compliance audit report is available at http://www.jpmipl.com/#research.

Indonesia: PT J.P. Morgan Sekuritas Indonesia is a member of the Indonesia Stock Exchange and is registered and supervised by the Otoritas Jasa Keuangan (OJK).

Korea: J.P. Morgan Securities (Far East) Limited, Seoul Branch, is a member of the Korea Exchange (KRX). JPMorgan Chase Bank, N.A., Seoul Branch, is licensed as a branch office of foreign bank (JPMorgan Chase Bank, N.A.) in Korea. Both entities are regulated by the Financial Services Commission (FSC) and the Financial Supervisory Service (FSS). For non-macro research material, the material is distributed in Korea by or through J.P. Morgan Securities (Far East) Limited, Seoul Branch.

Japan: JPMorgan Securities Japan Co., Ltd. and JPMorgan Chase Bank, N.A., Tokyo Branch are regulated by the Financial Services Agency in Japan.

Malaysia: This material is issued and distributed in Malaysia by JPMorgan Securities (Malaysia) Sdn Bhd (18146-X), which is a Participating Organization of Bursa Malaysia Berhad and holds a Capital Markets Services License issued by the Securities Commission in Malaysia.

Mexico: J.P. Morgan Casa de Bolsa, S.A. de C.V. and J.P. Morgan Grupo Financiero are members of the Mexican Stock Exchange and are authorized to act as a broker dealer by the National Banking and Securities Exchange Commission.

New Zealand: This material is issued and distributed by JPMSAL in New Zealand only to "wholesale clients" (as defined in the Financial Markets Conduct Act 2013). JPMSAL is registered as a Financial Service Provider under the Financial Service providers (Registration and Dispute Resolution) Act of 2008.

Philippines: J.P. Morgan Securities Philippines Inc. is a Trading Participant of the Philippine Stock Exchange and a member of the Securities Clearing Corporation of the Philippines and the Securities Investor Protection Fund. It is regulated by the Securities and Exchange Commission.

Singapore: This material is issued and distributed in Singapore by or through J.P. Morgan Securities Singapore Private Limited (JPMSS) [MDDI (P) 057/08/2025 and Co. Reg. No.: 199405335R], which is a member of the Singapore Exchange Securities Trading Limited, and/or JPMorgan Chase Bank, N.A., Singapore branch (JPMCB Singapore), both of which are regulated by the Monetary Authority of Singapore. This material is issued and distributed in Singapore only to accredited investors, expert investors and institutional investors, as defined in Section 4A of the Securities and Futures Act, Cap. 289 (SFA). This material is not intended to be issued or distributed to any retail investors or any other investors that do not fall into the classes of “accredited investors,” “expert investors” or “institutional investors,” as defined under Section 4A of the SFA. Recipients of this material in Singapore are to contact JPMSS or JPMCB Singapore in respect of any matters arising from, or in connection with, the material.

South Africa: J.P. Morgan Equities South Africa Proprietary Limited and JPMorgan Chase Bank, N.A., Johannesburg Branch are members of the Johannesburg Securities Exchange and are regulated by the Financial Services Conduct Authority (FSCA).

Taiwan: J.P. Morgan Securities (Taiwan) Limited is a participant of the Taiwan Stock Exchange (company-type) and regulated by the Taiwan Securities and Futures Bureau. Material relating to equity securities is issued and distributed in Taiwan by J.P. Morgan Securities (Taiwan) Limited, subject to the license scope and the applicable laws and the regulations in Taiwan. **To the extent that J.P. Morgan Securities (Taiwan) Limited produces research materials on securities not listed on the Taiwan Stock Exchange or Taipei Exchange (“Non-Taiwan Listed Securities”), these materials shall not constitute securities recommendations for the purpose of applicable Taiwan regulations, and, for the avoidance of doubt, J.P. Morgan Securities (Taiwan) Limited does not act as broker for Non-Taiwan Listed Securities.** According to Paragraph 2, Article 7-1 of Operational Regulations Governing Securities Firms Recommending Trades in Securities to Customers (as amended or supplemented) and/or other applicable laws or regulations, please note that the recipient of this material is not permitted to engage in any activities in connection with the material that may give rise to conflicts of interests, unless otherwise disclosed in the “Important Disclosures” in this material.

Thailand: This material is issued and distributed in Thailand by JPMorgan Securities (Thailand) Ltd., which is a member of the Stock Exchange of Thailand and is regulated by the Ministry of Finance and the Securities and Exchange Commission, and its registered address is 3rd Floor, 20 North Sathorn Road, Silom, Bangrak, Bangkok 10500.

UK: Research is produced in the UK by J.P. Morgan Securities plc (“JPMS plc”) which is a member of the London Stock Exchange and is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority or J.P. Morgan Markets Limited (“JPMML Ltd”) which is authorised and regulated by the Financial Conduct Authority. Unless specified to the contrary, this material is distributed in the UK by JPMS plc and is directed in the UK only to: (a) persons having professional experience in matters relating to investments falling within article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) (Order) 2005 (“the FPO”); (b) persons outlined in article 49 of the FPO (high net worth companies, unincorporated associations or partnerships, the trustees of high value trusts, etc.); or (c) any persons to whom this communication may otherwise lawfully be made; all such persons being referred to as "UK relevant persons". This material must not be acted on or relied on by persons who are not UK relevant persons. Any investment or investment activity to which this material relates is only available to UK relevant persons and will be engaged in only with UK relevant persons. A description of J.P. Morgan EMEA’s policy for prevention and avoidance of conflicts of interest related to the production of Research can be found at the following link: J.P. Morgan EMEA - Research Independence Policy.

U.S.: J.P. Morgan Securities LLC (“JPMS”) is a member of the NYSE, FINRA, SIPC, and the NFA. JPMorgan Chase Bank, N.A. is a member of the FDIC. Material published by non-U.S. affiliates is distributed in the U.S. by JPMS who accepts responsibility for its content.

General: Additional information is available upon request. The information in this material has been obtained from sources believed to be reliable. While all reasonable care has been taken to ensure that the facts stated in this material are accurate and that the forecasts, opinions and expectations contained herein are fair and reasonable, JPMorgan Chase & Co. or its affiliates and/or subsidiaries (collectively J.P. Morgan) make no representations or warranties whatsoever to the completeness or accuracy of the material provided, except with respect to any disclosures relative to J.P. Morgan and the Research Analyst's involvement with the issuer that is the subject of the material. Accordingly, no reliance should be placed on the accuracy, fairness or completeness of the information contained in this material. There may be certain discrepancies with data and/or limited content in this material as a result of calculations, adjustments, translations to different languages, and/or local regulatory restrictions, as applicable. These discrepancies should not impact the overall investment analysis, views and/or recommendations of the subject company(ies) that may be discussed in the material. Artificial intelligence tools may have been used in the preparation of this material, including assisting in data analysis, pattern recognition, and content drafting for research material. J.P. Morgan accepts no liability whatsoever for any loss arising from any use of this material or its contents, and neither J.P. Morgan nor any of its respective directors, officers or employees, shall be in any way responsible for the contents hereof, apart from the liabilities and responsibilities that may be imposed on them by the relevant regulatory authority in the jurisdiction in question, or the regulatory regime thereunder. Opinions, forecasts or projections contained in this material represent J.P. Morgan's current opinions or judgment as of the date of the material only and are therefore subject to change without notice. Periodic updates may be provided on companies/industries based on company-specific developments or announcements, market conditions or any other publicly available information. There can be no assurance that future results or events will be consistent with any such opinions, forecasts or projections, which represent only one possible outcome. Furthermore, such opinions, forecasts or projections are subject to certain risks, uncertainties and assumptions that have not been verified, and future actual results or events could differ materially. The value of, or income from, any investments referred to in this material may fluctuate and/or be affected by changes in exchange rates. All pricing is indicative as of the close of market for the securities discussed, unless otherwise stated. Past performance is not indicative of future results. Accordingly, investors may receive back less than originally invested. This material is not intended as an offer or solicitation for the purchase or sale of any financial instrument. The opinions and recommendations herein do not take into account individual client circumstances, objectives, or needs and are not intended as recommendations of particular securities, financial instruments or strategies to particular clients. This material may include views on structured securities, options, futures and other derivatives. These are complex instruments, may involve a high degree of risk and may be appropriate investments only for sophisticated investors who are capable of understanding and assuming the risks involved. The recipients of this material must make their own independent decisions regarding any securities or financial instruments mentioned herein and should seek advice from such independent financial, legal, tax or other adviser as they deem necessary. J.P. Morgan may trade as a principal on the basis of the Research Analysts' views and research, and it may also engage in transactions for its own account or for its clients' accounts in a manner inconsistent with the views taken in this material, and J.P. Morgan is under no obligation to ensure that such other communication is brought to the attention of any recipient of this material. Others within J.P. Morgan, including Strategists, Sales staff and other Research Analysts, may take views that are inconsistent with those taken in this material. Employees of J.P. Morgan not involved in the preparation of this material may have investments in the securities (or derivatives of such securities) mentioned in this material and may trade them in ways different from those discussed in this material. This material is not an advertisement for or marketing of any issuer, its products or services, or its securities in any jurisdiction.

Confidentiality and Security Notice: This transmission may contain information that is privileged, confidential, legally privileged, and/or exempt from disclosure under applicable law. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution, or use of the information contained herein (including any reliance thereon) is STRICTLY PROHIBITED. Although this transmission and any attachments are believed to be free of any virus or other defect that might affect any computer system into which it is received and opened, it is the responsibility of the recipient to ensure that it is virus free and no responsibility is accepted by JPMorgan Chase & Co., its subsidiaries and affiliates, as applicable, for any loss or damage arising in any way from its use. If you received this transmission in error, please immediately contact the sender and destroy the material in its entirety, whether in electronic or hard copy format. This message is subject to electronic monitoring: https://www.jpmorgan.com/disclosures/email

MSCI: Certain information herein ("Information") is reproduced by permission of MSCI Inc., its affiliates and information providers ("MSCI") ©2025. No reproduction or dissemination of the Information is permitted without an appropriate license. MSCI MAKES NO EXPRESS OR IMPLIED WARRANTIES (INCLUDING MERCHANTABILITY OR FITNESS) AS TO THE INFORMATION AND DISCLAIMS ALL LIABILITY TO THE EXTENT PERMITTED BY LAW. No Information constitutes investment advice, except for any applicable Information from MSCI ESG Research. Subject also to msci.com/disclaimer

Sustainalytics: Certain information, data, analyses and opinions contained herein are reproduced by permission of Sustainalytics and: (1) includes the proprietary information of Sustainalytics; (2) may not be copied or redistributed except as specifically authorized; (3) do not constitute investment advice nor an endorsement of any product or project; (4) are provided solely for informational purposes; and (5) are not warranted to be complete, accurate or timely. Sustainalytics is not responsible for any trading decisions, damages or other losses related to it or its use. The use of the data is subject to conditions available at https://www.sustainalytics.com/legal-disclaimers. ©2025 Sustainalytics. All Rights Reserved.

"Other Disclosures" last revised November 08, 2025.

Completed 10 Dec 2025 06:11 PM EST

Disseminated 10 Dec 2025 06:11 PM EST