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## Delta-One Flows & Positioning

Defensive tilt persists: weak equity flows, heavy rates futures selling, credit ETF outflows, memory still under pressure

In this publication, we analyze flow and positioning metrics for global futures and US-listed ETFs across asset classes.

### Weekly Highlights

**Flows stayed cautious last week.** Equity ETFs flipped back to inflows but remained weak, while equity futures were essentially flat. Fixed income was the main pressure point: rates futures saw heavy net selling (~\$82Bn, -3z) while bond ETF inflows were light (~\$5Bn, -1.5z). Within bond ETFs, **corporates took the brunt (~3z selling) with sizeable outflows from both IG and HY.** Most equity sectors posted outflows, and style flows also leaned defensive, with rotation into Low Vol and Defined Outcome. **Memory remained under pressure** – Korea saw 3M-high outflows and DRAM logged a third straight week of outflows. The geopolitics/energy complex was mixed, with another week of heavy buying in energy futures, but modest outflows from energy equities and inflows to inverse oil ETFs. **The debasement trade paused** as gold and crypto both posted moderate outflows. CTAs likely reduced equities and sold copper/US natgas/gold/European FX w/w.

### ETFs

- **Asset classes:** Equities (\$12.7Bn, -0.9z) and Fixed Income (\$5.3Bn, -1.5z) saw weak inflows, while Commodities (\$0.3Bn, -0.2z) and Currency/Multi-asset (\$0.7Bn, 0z) were near-average.
- **Regions:** The US (\$8.3Bn, -0.6z) and International DM (\$3.8Bn, -0.9z) both drew weak inflows. At a country level, **Korea (-\$0.6Bn, -1.2z)** stood out, posting its largest outflow since May.
- **Sectors:** Sector flows were broadly weak, with **~1z outflows from Discretionary, Industrials, Materials, Real Estate, and Comm. Services.** The exception was Financials (0.7z), which drew above-average inflows.
- **Styles:** Flows tilted risk-off, with strong inflows to **Low Vol (1.7z)** and Defined Outcome (0.7z), and outflows from Single Stock ETFs (-0.7z). In thematic, DRAM saw a third consecutive week of outflows (~-\$0.3Bn).
- **Levered ETFs:** Levered products saw moderate inflows last week (\$0.6Bn, 0.3z), led by TQQQ (~\$0.4Bn).
- **Fixed Income:** **Corporates (-\$4Bn, -3z)** saw heavy outflows, spanning both IG (-2.5z) and HY (-1.9z). **Munis (-2.6z)** had their largest outflow in over a year, though investors bought the dip in **long-term Treasuries (\$1.9Bn, 1.7z;** mainly TLT).
- **Commodities:** Energy saw above-average inflows, though nearly ⅓ went into the short oil ETF SCO. Precious Metals (-0.3z) saw their first outflows in six weeks.
- **Currency/Multi-Asset:** Crypto (-0.3z) posted its first outflows in four weeks. Liquid Alts drew strong inflows (\$0.7Bn, 1.8z), mainly into DBMF.

### Global Equity Derivatives Strategy

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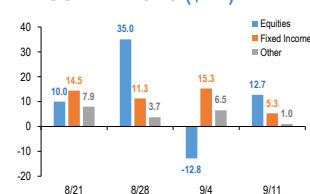
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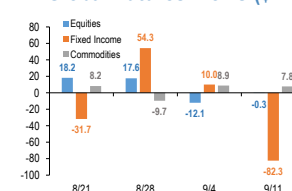
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### 4w US ETF Flows (\$Bn)



Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

### 4w Global Futures Flows (\$Bn)



Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P. Sum of futures in Tables 1-5.

See page 21 for analyst certification and important disclosures.

## Futures

- **Flows:** We saw large net buying ( $>1.5z$ ) in SSE50, MSCI Singapore, Gasoline and TTF Natgas futures, and large net selling ( $<-1.5z$ ) in MSCI EM, TOPIX, UST 2y/10y/Ultra Bond, Germany 2y/5y, SOFR/EURIBOR/SONIA and JPY futures.
- **CTAs:** CTAs likely **reduced equity exposure w/w** as spot softened, and also **sold Copper, US Natgas, Gold, and European FX** vs USD. They likely remain net long equities, short global rates (ex-China), and long Energy/Ags.
- **CFTC Positioning:** Asset Managers sold SPX and bought NDX/EAFE w/w. Leveraged Funds sold NDX and bought 5-30y USTs. Managed Money bought WTI, Copper, and Silver futures.

## Futures Flows & Positioning

**Table 1: Equity Futures Flows & Positioning**

See Appendix for definitions; asterisk denotes expiry week

| Americas             | Ticker     | Net Flow - 1y History | 1w Net Flow (z) | 4w Net Flow (z) | 1w Return | OI Change (w/w) | OI Correlation w/Spot | CTA Signal |
|----------------------|------------|-----------------------|-----------------|-----------------|-----------|-----------------|-----------------------|------------|
| S&P 500              | ES1 Index  |                       | 0.5             | 1.4             | -0.8%     | 5.2%            | -3%                   | Long       |
| Nasdaq 100           | NQ1 Index  |                       | -1.2            | 1.0             | -0.6%     | 0.1%            | 6%                    | Neutral    |
| Russell 2000         | RTY1 Index |                       | 0.8             | 1.7             | -2.4%     | 11.4%           | 6%                    | Neutral    |
| DJIA                 | DM1 Index  |                       | 0.3             | -0.1            | -1.6%     | 1.7%            | 13%                   | Long       |
| S&P MidCap 400       | FA1 Index  |                       | -1.3            | 0.8             | -1.9%     | 0.5%            | 5%                    | Neutral    |
| MSCI EM              | MES1 Index |                       | -2.1            | -1.4            | -0.3%     | 0.2%            | -8%                   | Neutral    |
| MSCI EAFE            | MFS1 Index |                       | 0.0             | 0.4             | -1.4%     | 2.5%            | -10%                  | Long       |
| VIX                  | UX1 Index  |                       | 1.2             | 1.3             | 9.0%      | 2.3%            | 30%                   | Short      |
| S&P TSX 60           | PT1 Index  |                       | 0.9             | 0.1             | -2.3%     | 9.7%            | -5%                   | Long       |
| Bovespa              | XB1 Index  |                       | -1.0            | -2.4            | 1.1%      | 0.0%            | -5%                   | Long       |
| EMEA                 | Ticker     | Net Flow - 1y History | 1w Net Flow (z) | 4w Net Flow (z) | 1w Return | OI Change (w/w) | OI Correlation w/Spot | CTA Signal |
| Euro Stoxx 50        | VG1 Index  |                       | -0.1            | 0.4             | -1.1%     | -0.2%           | 3%                    | Long       |
| FTSE 100             | Z1 Index   |                       | 0.9             | 1.4             | -1.7%     | 6.3%            | 28%                   | Long       |
| DAX                  | GX1 Index  |                       | 0.0             | 0.1             | -1.8%     | -28.2%          | 20%                   | Long       |
| SMI                  | SM1 Index  |                       | 1.3             | 1.5             | -4.3%     | 19.4%           | 6%                    | Neutral    |
| CAC 40               | CF1 Index  |                       | 0.4             | 2.1             | -1.2%     | 5.9%            | -5%                   | Short      |
| FTSE/JSE Top 40      | AI1 Index  |                       | -0.8            | -1.5            | -1.4%     | 0.3%            | 35%                   | Short      |
| BIST 30              | A51 Index  |                       | 0.8             | 1.1             | 4.9%      | -3.1%           | -5%                   | Long       |
| APAC                 | Ticker     | Net Flow - 1y History | 1w Net Flow (z) | 4w Net Flow (z) | 1w Return | OI Change (w/w) | OI Correlation w/Spot | CTA Signal |
| TOPIX                | TP1 Index  |                       | -1.6            | -2.1            | -1.8%     | -14.7% *        | -10%                  | Long       |
| Nikkei 225           | NK1 Index  |                       | -0.7            | -1.4            | -1.6%     | -21.3% *        | -1%                   | Neutral    |
| ASX SPI 200          | XP1 Index  |                       | 0.4             | 1.5             | -2.9%     | 7.1%            | -2%                   | Short      |
| KOSPI 200            | KM1 Index  |                       | -0.5            | -0.7            | 3.7%      | -18.5% *        | 5%                    | Neutral    |
| Hang Seng            | HI1 Index  |                       | -1.4            | -1.6            | -3.3%     | 11.7%           | -18%                  | Short      |
| Hang Seng China Ent. | HC1 Index  |                       | -1.0            | -1.1            | -3.6%     | 10.3%           | -3%                   | Short      |
| FTSE China A50       | XU1 Index  |                       | -1.2            | -1.2            | -0.8%     | -1.8%           | -10%                  | Short      |
| CSI 300              | IFB1 Index |                       | 0.7             | 1.1             | -0.8%     | 7.2%            | -35%                  | Short      |
| CSI 500              | FFD1 Index |                       | -1.3            | 0.3             | -0.9%     | 1.3%            | -24%                  | Short      |
| CSI 1000             | IFD1 Index |                       | 0.1             | -0.1            | -1.1%     | 5.4%            | -31%                  | Short      |
| SSE50                | FFB1 Index |                       | 1.6             | 0.2             | -1.9%     | 3.5%            | 2%                    | Short      |
| NIFTY 50             | JGS1 Index |                       | 0.7             | 2.5             | -2.1%     | 12.5%           | -29%                  | Short      |
| SET 50               | BC1 Index  |                       | -0.1            | -0.4            | 0.3%      | 0.8%            | -18%                  | Long       |
| SGX FTSE Taiwan      | TWT1 Index |                       | 1.3             | -0.7            | -0.8%     | -1.5%           | 12%                   | Long       |
| TAIEX                | FT1 Index  |                       | -0.5            | 0.1             | -0.8%     | 2.1%            | -11%                  | Long       |
| MSCI Singapore       | QZ1 Index  |                       | 3.1             | 3.4             | -2.4%     | 0.5%            | 8%                    | Long       |

Source: J.P. Morgan Equity Derivatives Strategy, CFTC, Bloomberg Finance L.P.

**Table 2: Fixed Income Futures Flows & Positioning**

See Appendix for definitions; asterisk denotes expiry week

| Americas           | Ticker      | Net Flow - 1y History | 1w Net Flow (z) | 1w Net Flow (DV01) | 4w Net Flow (z) | 1w Return | OI Change (w/w) | OI Correlation w/Spot | CTA Signal |
|--------------------|-------------|-----------------------|-----------------|--------------------|-----------------|-----------|-----------------|-----------------------|------------|
| 2y UST             | TU2 Comdty  |                       | -2.1            | -\$3,658k/01       | 0.1             | -0.4%     | 1.4%            | -10%                  | Short      |
| 5y UST             | FV2 Comdty  |                       | -1.2            | -\$643k/01         | 0.3             | -1.0%     | 0.9%            | 7%                    | Short      |
| 10y UST            | TY2 Comdty  |                       | -1.7            | -\$11,502k/01      | -1.8            | -1.3%     | 1.8%            | 22%                   | Short      |
| UST Ultra 10y Note | UXY2 Comdty |                       | -1.0            | -\$2,528k/01       | -0.1            | -1.5%     | 0.5%            | 18%                   | Short      |
| UST Long Bond      | US2 Comdty  |                       | -1.4            | -\$5,254k/01       | -1.1            | -1.8%     | 2.5%            | 27%                   | Short      |
| UST Ultra Bond     | WN2 Comdty  |                       | -2.1            | -\$4,238k/01       | -1.2            | -1.7%     | 1.7%            | 11%                   | Short      |
| Canada 10y         | CN2 Comdty  |                       | 0.3             | +\$366k/01         | 1.1             | -1.3%     | 1.3%            | 24%                   | Short      |
| EMEA               | Ticker      | Net Flow - 1y History | 1w Net Flow (z) | 1w Net Flow (DV01) | 4w Net Flow (z) | 1w Return | OI Change (w/w) | OI Correlation w/Spot | CTA Signal |
| Germany 2y         | DU1 Comdty  |                       | -3.5            | -\$5,148k/01       | -1.4            | -0.6%     | 6.8% *          | -21%                  | Short      |
| Germany 5y         | OE1 Comdty  |                       | -1.5            | -\$2,636k/01       | -0.9            | -0.8%     | -6.6% *         | -10%                  | Short      |
| Germany 10y        | RX1 Comdty  |                       | -0.5            | -\$904k/01         | -0.6            | -2.1%     | -11.0% *        | -22%                  | Short      |
| Germany 30y        | UB1 Comdty  |                       | 1.2             | +\$2,748k/01       | 0.9             | -2.4%     | -9.2% *         | -13%                  | Short      |
| 10y Gilt           | G 2 Comdty  |                       | 0.3             | +\$994k/01         | 0.3             | -2.0%     | 1.6%            | 3%                    | Short      |
| France 10y         | OAT1 Comdty |                       | 0.0             | +\$441k/01         | 0.5             | -2.8%     | -9.4% *         | -24%                  | Short      |
| Italy 10y          | IK1 Comdty  |                       | -0.1            | +\$76k/01          | -0.6            | -2.3%     | 2.6% *          | -1%                   | Short      |
| APAC               | Ticker      | Net Flow - 1y History | 1w Net Flow (z) | 1w Net Flow (DV01) | 4w Net Flow (z) | 1w Return | OI Change (w/w) | OI Correlation w/Spot | CTA Signal |
| Japan 10y          | JB1 Comdty  |                       | 1.3             | +\$5,104k/01       | -0.1            | -0.3%     | -4.6% *         | -10%                  | Short      |
| Australia 10y      | XM1 Comdty  |                       | 0.3             | +\$424k/01         | -1.2            | -0.2%     | 11.5%           | 12%                   | Short      |
| China 10y          | TFT1 Comdty |                       | -0.8            | -\$1,138k/01       | -0.8            | -0.1%     | -2.2% *         | 19%                   | Long       |
| Korea 10y          | KAA1 Comdty |                       | 0.5             | +\$1k/01           | 2.0             | -1.7%     | 2.3%            | 0%                    | Short      |

Source: J.P. Morgan Equity Derivatives Strategy, CFTC, Bloomberg Finance L.P.

**Table 3: Interest Rates Futures Flows & Positioning**

See Appendix for definitions; asterisk denotes expiry week

| Global     | Ticker      | Net Flow - 1y History | 1w Net Flow (z) | 1w Net Flow (DV01) | 4w Net Flow (z) | 1w Chg (bps) | OI Change (w/w) | OI Correlation w/Spot | CTA Signal |
|------------|-------------|-----------------------|-----------------|--------------------|-----------------|--------------|-----------------|-----------------------|------------|
| 3M SOFR    | SFR1 Comdty |                       | -1.8            | -\$64k/01          | -1.1            | 0.00         | 0.8%            | -23%                  | Long       |
| 3M Euribor | ER1 Comdty  |                       | -1.7            | -\$576k/01         | -1.0            | -4.00        | -0.1%           | -5%                   | Short      |
| 3M SONIA   | SFI1 Comdty |                       | -2.1            | -\$15k/01          | -1.7            | 0.25         | 0.3%            | 40%                   | Neutral    |

Source: J.P. Morgan Equity Derivatives Strategy, CFTC, Bloomberg Finance L.P.

**Table 4: Commodity Futures Flows & Positioning**

See Appendix for definitions; asterisk denotes expiry week

| Energy             | Ticker      | Net Flow - 1y History | 1w Net Flow (z) | 4w Net Flow (z) | 1w Return | OI Change (w/w) | OI Correlation w/Spot | CTA Signal |
|--------------------|-------------|-----------------------|-----------------|-----------------|-----------|-----------------|-----------------------|------------|
| Brent Crude        | CO1 Comdty  |                       | 12              | 14              | 8.7%      | 0.6%            | 19%                   | Long       |
| WTI                | CL1 Comdty  |                       | 03              | 00              | 9.4%      | 2.3%            | 37%                   | Long       |
| US Natural Gas     | NG1 Comdty  |                       | 00              | 00              | -4.8%     | -1.6%           | -19%                  | Short      |
| Gasoline           | XB1 Comdty  |                       | 17              | 20              | 2.9%      | -2.9%           | -17%                  | Long       |
| Heating Oil        | HO1 Comdty  |                       | 06              | 17              | 9.2%      | 4.3%            | 2%                    | Long       |
| Low Sulphur Gasoil | QS1 Comdty  |                       | 14              | 11              | 6.0%      | -4.0%           | -28%                  | Long       |
| TTF Nat Gas        | TZT1 Comdty |                       | 37              | 38              | 10.5%     | 2.4%            | 12%                   | Long       |
| Base Metals        | Ticker      | Net Flow - 1y History | 1w Net Flow (z) | 4w Net Flow (z) | 1w Return | OI Change (w/w) | OI Correlation w/Spot | CTA Signal |
| Copper             | HG1 Comdty  |                       | -1.5            | 0.6             | -1.9%     | 1.5%            | -5%                   | Neutral    |
| Nickel             | LN1 Comdty  |                       | 00              | -0.1            | -2.3%     | 1.3%            | 3%                    | Short      |
| Aluminum           | LA1 Comdty  |                       | 04              | 11              | -0.7%     | 1.7%            | 10%                   | Neutral    |
| Precious Metals    | Ticker      | Net Flow - 1y History | 1w Net Flow (z) | 4w Net Flow (z) | 1w Return | OI Change (w/w) | OI Correlation w/Spot | CTA Signal |
| Gold               | GC1 Comdty  |                       | -0.1            | -0.5            | -1.5%     | 0.1%            | -4%                   | Neutral    |
| Silver             | SI1 Comdty  |                       | 13              | 11              | -2.3%     | 0.6%            | 31%                   | Short      |
| Agriculture        | Ticker      | Net Flow - 1y History | 1w Net Flow (z) | 4w Net Flow (z) | 1w Return | OI Change (w/w) | OI Correlation w/Spot | CTA Signal |
| Soybean            | S 1 Comdty  |                       | -0.6            | -2.1            | -1.0%     | 3.2%            | 0%                    | Long       |
| Corn               | C 1 Comdty  |                       | -0.4            | -0.3            | -0.3%     | 2.4%            | 15%                   | Long       |
| Wheat              | W 1 Comdty  |                       | 03              | -2.5            | -1.3%     | 2.5%            | -8%                   | Long       |

Source: J.P. Morgan Equity Derivatives Strategy, CFTC, Bloomberg Finance L.P.

**Table 5: FX/Crypto Futures Flows & Positioning**

See Appendix for definitions; asterisk denotes expiry week

| FX/Crypto | Ticker      | Net Flow - 1y History | 1w Net Flow (z) | 4w Net Flow (z) | 1w Return | OI Change (w/w) | OI Correlation w/Spot | CTA Signal |
|-----------|-------------|-----------------------|-----------------|-----------------|-----------|-----------------|-----------------------|------------|
| EUR/USD   | EC1 Curncy  |                       | 02              | -0.9            | -0.2%     | 0.2%            | -13%                  | Short      |
| GBP/USD   | BP1 Curncy  |                       | 07              | 02              | 0.1%      | -3.1%           | -21%                  | Neutral    |
| JPY/USD   | JY1 Curncy  |                       | -1.9            | -2.4            | 1.6%      | 9.8%            | -17%                  | Long       |
| CAD/USD   | CD1 Curncy  |                       | -0.5            | -1.9            | -0.2%     | 5.1%            | 4%                    | Short      |
| AUD/USD   | AD1 Curncy  |                       | 07              | -0.5            | -0.4%     | 9.1%            | 5%                    | Long       |
| USD/CNH   | XUC1 Curncy |                       | 03              | -0.5            | 0.0%      | 5.9%            | -5%                   | Short      |
| CHF/USD   | SF1 Curncy  |                       | 08              | 17              | -0.9%     | 11.9%           | 5%                    | Short      |
| USD/BRL   | UC1 Curncy  |                       | -0.5            | -0.4            | -0.1%     | 1.4%            | 2%                    | Neutral    |
| Bitcoin   | BTC1 Curncy |                       | -0.3            | 0.6             | -3.3%     | 0.6%            | 16%                   | Long       |
| Ether     | DCR1 Curncy |                       | 14              | 2.6             | 3.4%      | 8.9%            | 18%                   | Long       |

Source: J.P. Morgan Equity Derivatives Strategy, CFTC, Bloomberg Finance L.P.

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## CTA Signals

Table 6: Equity CTA Signals

"Current" levels are as of afternoon ET Sep 14; see Appendix for definitions

| Americas             | Ticker     | Current | Prior Week CTA Signal | Current CTA Levels |         |         |          |         |         |         |            | CTA Levels in 1w |         |         |          |         |         |         |            | 1w Chg |
|----------------------|------------|---------|-----------------------|--------------------|---------|---------|----------|---------|---------|---------|------------|------------------|---------|---------|----------|---------|---------|---------|------------|--------|
|                      |            |         |                       | 1m Mom.            | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA  | 100d MA | 200d MA | CTA Signal | 1m Mom.          | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA  | 100d MA | 200d MA | CTA Signal |        |
| S&P 500              | ES1 Index  | 7,642   | Long                  | 7,799              | 7,505   | 6,688   | 6,601    | 7,634   | 7,524   | 7,188   | Long       | 7,694            | 7,496   | 6,612   | 6,682    | 7,643   | 7,552   | 7,212   | Long       | -      |
| Nasdaq 100           | NQ1 Index  | 29,282  | Long                  | 30,061             | 30,072  | 24,622  | 24,147   | 29,319  | 29,261  | 27,239  | Neutral    | 29,400           | 30,194  | 24,305  | 24,677   | 29,267  | 29,391  | 27,355  | Neutral    | -      |
| Russell 2000         | RTY1 Index | 2,902   | Long                  | 3,063              | 2,953   | 2,502   | 2,409    | 2,989   | 2,938   | 2,765   | Neutral    | 3,020            | 2,994   | 2,509   | 2,474    | 2,977   | 2,945   | 2,778   | Neutral    | -      |
| DJIA                 | DM1 Index  | 52,498  | Long                  | 53,871             | 51,671  | 46,872  | 45,972   | 53,108  | 51,870  | 50,128  | Long       | 53,244           | 52,054  | 46,278  | 46,407   | 53,047  | 52,055  | 50,277  | Long       | -      |
| S&P MidCap 400       | FA1 Index  | 3,687   | Long                  | 3,925              | 3,803   | 3,369   | 3,297    | 3,812   | 3,765   | 3,609   | Neutral    | 3,838            | 3,808   | 3,383   | 3,309    | 3,798   | 3,768   | 3,621   | Neutral    | -      |
| MSCI EM              | MES1 Index | 1,694   | Long                  | 1,703              | 1,757   | 1,485   | 1,328    | 1,687   | 1,698   | 1,596   | Neutral    | 1,702            | 1,785   | 1,461   | 1,349    | 1,686   | 1,703   | 1,605   | Neutral    | -      |
| MSCI EAFE            | MFS1 Index | 3,187   | Long                  | 3,269              | 3,131   | 2,928   | 2,772    | 3,200   | 3,145   | 3,065   | Long       | 3,241            | 3,138   | 2,851   | 2,776    | 3,205   | 3,155   | 3,076   | Long       | -      |
| VIX                  | UX1 Index  | 16.71   | Short                 | 15.86              | 16.74   | 24.00   | 15.67    | 17.34   | 18.09   | 19.01   | Short      | 16.86            | 18.84   | 25.00   | 17.81    | 17.25   | 17.87   | 18.96   | Short      | ↓      |
| S&P TSX 60           | PT1 Index  | 2,101   | Long                  | 2,164              | 2,063   | 1,907   | 1,736    | 2,114   | 2,063   | 1,981   | Long       | 2,138            | 2,056   | 1,853   | 1,756    | 2,118   | 2,071   | 1,990   | Long       | -      |
| Bovespa              | XB1 Index  | 187,510 | Long                  | 10.7%              | 10.0%   | 10.0%   | 29.7%    | 5.8%    | 5.4%    | 5.5%    | Long       | 171,908          | 173,059 | 181,722 | 146,646  | 178,639 | 177,648 | 178,618 | Long       | -      |
| EMEA                 | Ticker     | Current | Prior Week CTA Signal | 1m Mom.            | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA  | 100d MA | 200d MA | CTA Signal | 1m Mom.          | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA  | 100d MA | 200d MA | CTA Signal | 1w Chg |
| Euro Stoxx 50        | VG1 Index  | 6,290   | Long                  | 6,557              | 6,225   | 5,741   | 5,405    | 6,399   | 6,232   | 6,040   | Long       | 6,463            | 6,320   | 5,539   | 5,458    | 6,396   | 6,262   | 6,059   | Neutral    | ↓      |
| FTSE 100             | Z 1 Index  | 10,718  | Long                  | 10,798             | 10,471  | 10,323  | 9,294    | 10,752  | 10,580  | 10,405  | Long       | 10,798           | 10,448  | 9,959   | 9,244    | 10,771  | 10,602  | 10,436  | Long       | -      |
| DAX                  | GX1 Index  | 25,564  | Long                  | 26,423             | 24,826  | 23,580  | 23,713   | 25,823  | 25,296  | 24,811  | Long       | 26,143           | 25,158  | 22,837  | 23,658   | 25,847  | 25,378  | 24,865  | Long       | -      |
| SMI                  | SM1 Index  | 13,888  | Long                  | 14,431             | 13,722  | 12,889  | 12,202   | 14,334  | 13,920  | 13,513  | Neutral    | 14,388           | 13,836  | 12,375  | 12,073   | 14,290  | 13,967  | 13,546  | Neutral    | -      |
| CAC 40               | CF1 Index  | 8,159   | Neutral               | 8,659              | 8,398   | 7,942   | 7,852    | 8,443   | 8,325   | 8,241   | Short      | 8,480            | 8,403   | 7,726   | 7,851    | 8,417   | 8,333   | 8,242   | Short      | -      |
| FTSE/JSE Top 40      | AII Index  | 105,780 | Long                  | 106,219            | 106,579 | 108,621 | 96,951   | 105,476 | 106,091 | 108,236 | Short      | 108,838          | 105,053 | 102,989 | 99,143   | 105,880 | 105,876 | 108,298 | Neutral    | ↑      |
| BIST 30              | A51 Index  | 17,552  | Long                  | 16,196             | 16,544  | 15,335  | 12,201   | 16,596  | 16,626  | 15,485  | Long       | 16,725           | 17,023  | 15,230  | 12,882   | 16,625  | 16,681  | 15,643  | Long       | -      |
| APAC                 | Ticker     | Current | Prior Week CTA Signal | 1m Mom.            | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA  | 100d MA | 200d MA | CTA Signal | 1m Mom.          | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA  | 100d MA | 200d MA | CTA Signal | 1w Chg |
| TOPIX                | TP1 Index  | 4,038   | Long                  | 4,174              | 3,962   | 3,592   | 3,141    | 4,065   | 3,980   | 3,781   | Long       | 4,050            | 4,059   | 3,521   | 3,134    | 4,063   | 3,997   | 3,803   | Neutral    | ↓      |
| Nikkei 225           | NK1 Index  | 63,350  | Long                  | 68,203             | 68,297  | 53,440  | 44,467   | 66,179  | 65,529  | 59,390  | Neutral    | 65,977           | 71,417  | 52,090  | 45,090   | 65,540  | 65,773  | 59,820  | Neutral    | -      |
| ASX SPI 200          | XP1 Index  | 8,748   | Long                  | 9,109              | 8,888   | 8,599   | 8,839    | 8,942   | 8,837   | 8,805   | Short      | 9,004            | 8,797   | 8,444   | 8,823    | 8,939   | 8,838   | 8,809   | Short      | -      |
| KOSPI 200            | KM1 Index  | 1,048.4 | Neutral               | 1,069.3            | 1,359.7 | 826.2   | 461.4    | 1,078.8 | 1,153.8 | 941.5   | Neutral    | 1,066.1          | 1,435.5 | 832.8   | 476.5    | 1,055.6 | 1,159.1 | 956.4   | Neutral    | -      |
| Hang Seng            | HI1 Index  | 24,873  | Neutral               | 25,292             | 24,672  | 25,667  | 26,321   | 25,197  | 25,063  | 25,575  | Short      | 25,726           | 23,656  | 24,853  | 26,503   | 25,314  | 25,006  | 25,549  | Short      | ↑      |
| Hang Seng China Ent. | HC1 Index  | 8,276   | Short                 | 8,404              | 8,327   | 8,751   | 9,341    | 8,376   | 8,369   | 8,633   | Short      | 8,547            | 7,876   | 8,443   | 9,445    | 8,416   | 8,342   | 8,610   | Short      | ↑      |
| FTSE China A50       | XU1 Index  | 14,450  | Short                 | 14,967             | 15,669  | 14,862  | 15,160   | 14,854  | 15,222  | 15,115  | Short      | 14,747           | 15,738  | 14,481  | 14,995   | 14,793  | 15,153  | 15,091  | Short      | -      |
| CSI 300              | IFB1 Index | 4,476   | Short                 | 4,665              | 4,837   | 4,655   | 4,532    | 4,628   | 4,734   | 4,679   | Short      | 4,590            | 4,948   | 4,474   | 4,497    | 4,592   | 4,717   | 4,678   | Short      | -      |
| CSI 500              | FFD1 Index | 7,557   | Short                 | 7,975              | 8,315   | 8,140   | 7,125    | 7,833   | 8,152   | 7,984   | Short      | 7,815            | 8,677   | 7,581   | 7,151    | 7,724   | 8,110   | 8,002   | Short      | -      |
| CSI 1000             | IFD1 Index | 7,454   | Short                 | 7,745              | 8,418   | 8,136   | 7,384    | 7,557   | 8,033   | 7,944   | Short      | 7,563            | 8,702   | 7,580   | 7,424    | 7,467   | 7,982   | 7,950   | Short      | -      |
| SSE50                | FFB1 Index | 2,858   | Short                 | 2,923              | 2,913   | 2,961   | 2,971    | 2,910   | 2,920   | 2,957   | Short      | 2,878            | 2,944   | 2,835   | 2,914    | 2,902   | 2,915   | 2,953   | Short      | ↑      |
| NIFTY 50             | JGS1 Index | 23,547  | Short                 | 24,436             | 23,855  | 23,459  | 25,171   | 24,182  | 24,020  | 24,507  | Short      | 24,275           | 24,036  | 22,991  | 25,378   | 24,105  | 23,984  | 24,432  | Short      | -      |
| SET 50               | BC1 Index  | 1,070   | Long                  | 1,075              | 1,031   | 941     | 831      | 1,074   | 1,038   | 966     | Long       | 1,075            | 1,023   | 941     | 831      | 1,076   | 1,044   | 973     | Long       | -      |
| SGX FTSE Taiwan      | TWT1 Index | 4,027   | Long                  | 3,995              | 3,949   | 2,715   | 2,105    | 3,889   | 3,826   | 3,227   | Long       | 3,869            | 4,136   | 2,666   | 2,134    | 3,899   | 3,869   | 3,278   | Long       | ↓      |
| TAIEX                | FT1 Index  | 45,777  | Long                  | 45,784             | 45,193  | 33,456  | 25,346   | 45,057  | 44,213  | 37,829  | Long       | 44,884           | 47,539  | 32,966  | 25,758   | 45,024  | 44,616  | 38,395  | Long       | -      |
| MSCI Singapore       | QZ1 Index  | 533     | Long                  | 539.7              | 462.5   | 438.7   | 456.6    | 527.6   | 494.2   | 471.6   | Long       | 534.4            | 477.2   | 437.3   | 451.0    | 531.0   | 499.6   | 474.5   | Long       | -      |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

Table 7: Fixed Income CTA Signals

"Current" levels are as of afternoon ET Sep 14; see Appendix for definitions

| Americas           | Ticker      | Current | Prior Week CTA Signal | Current CTA Levels |         |         |          |        |         |         |            | CTA Levels in 1w |         |         |          |        |         |         |            | 1w Chg |
|--------------------|-------------|---------|-----------------------|--------------------|---------|---------|----------|--------|---------|---------|------------|------------------|---------|---------|----------|--------|---------|---------|------------|--------|
|                    |             |         |                       | 1m Mom.            | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA | 100d MA | 200d MA | CTA Signal | 1m Mom.          | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA | 100d MA | 200d MA | CTA Signal |        |
| 2y UST             | TU2 Comdty  | 102.1   | Short                 | 102.9              | 103.1   | 103.9   | 104.4    | 102.8  | 103.0   | 103.6   | Short      | 102.9            | 103.1   | 103.5   | 104.3    | 102.7  | 102.9   | 103.5   | Short      | -      |
| 5y UST             | FV2 Comdty  | 104.5   | Short                 | 106.3              | 107.0   | 108.5   | 109.8    | 106.1  | 106.7   | 107.8   | Short      | 106.2            | 107.0   | 107.7   | 109.4    | 105.9  | 106.5   | 107.7   | Short      | -      |
| 10y UST            | TY2 Comdty  | 106.2   | Short                 | 108.3              | 109.7   | 111.6   | 113.4    | 108.3  | 109.0   | 110.5   | Short      | 108.3            | 109.7   | 110.3   | 112.6    | 107.9  | 108.7   | 110.3   | Short      | -      |
| UST Ultra 10y Note | UXY2 Comdty | 107.8   | Short                 | 109.8              | 112.2   | 114.1   | 116.0    | 110.1  | 111.1   | 112.8   | Short      | 110.0            | 112.2   | 112.7   | 115.2    | 109.7  | 110.8   | 112.5   | Short      | -      |
| UST Long Bond      | US2 Comdty  | 107.0   | Short                 | 108.1              | 113.2   | 114.5   | 117.8    | 109.3  | 110.8   | 113.0   | Short      | 109.0            | 113.3   | 112.6   | 115.9    | 108.8  | 110.4   | 112.7   | Short      | -      |
| UST Ultra Bond     | WN2 Comdty  | 108.6   | Short                 | 109.2              | 115.9   | 117.2   | 121.6    | 111.0  | 112.9   | 115.4   | Short      | 110.4            | 116.4   | 115.8   | 120.9    | 110.4  | 112.4   | 115.0   | Short      | -      |
| Canada 10y         | CN2 Comdty  | 115.6   | Short                 | 117.6              | 120.7   | 120.1   | 122.4    | 118.0  | 118.8   | 119.7   | Short      | 117.7            | 120.1   | 119.0   | 122.6    | 117.5  | 118.6   | 119.4   | Short      | -      |
| EMEA               | Ticker      | Current | Prior Week CTA Signal | 1m Mom.            | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA | 100d MA | 200d MA | CTA Signal | 1m Mom.          | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA | 100d MA | 200d MA | CTA Signal | 1w Chg |
| Germany 2y         | DU1 Comdty  | 104.6   | Short                 | 105.5              | 105.8   | 106.0   | 107.0    | 105.4  | 105.6   | 106.1   | Short      | 105.4            | 105.9   | 105.7   | 107.0    | 105.3  | 105.6   | 106.0   | Short      | -      |
| Germany 5y         | OE1 Comdty  | 112.2   | Short                 | 113.8              | 115.0   | 116.0   | 117.9    | 113.8  | 114.6   | 115.5   | Short      | 113.7            | 115.3   | 115.4   | 117.7    | 113.5  | 114.4   | 115.3   | Short      | -      |
| Germany 10y        | RX1 Comdty  | 120.5   | Short                 | 124.1              | 126.6   | 126.2   | 128.8    | 124.2  | 125.0   | 126.2   | Short      | 124.0            | 127.2   | 125.4   | 128.2    | 123.6  | 124.7   | 126.0   | Short      | -      |
| Germany 30y        | UB1 Comdty  | 101.6   | Short                 | 104.9              | 109.9   | 110.0   | 114.9    | 105.5  | 107.2   | 108.8   | Short      | 104.8            | 111.1   | 110.1   | 113.0    | 104.8  | 106.8   | 108.5   | Short      | -      |
| 10y Gilt           | G 2 Comdty  | 84.4    | Short                 | 86.3               | 89.2    | 89.1    | 91.5     | 86.7   | 87.2    | 88.9    | Short      | 86.4             | 89.8    | 88.0    | 90.9     | 86.2   | 87.1    | 88.7    | Short      | -      |
| France 10y         | OAT1 Comdty | 112.3   | Short                 | 116.5              | 119.8   | 119.8   | 121.7    | 116.8  | 118.1   | 119.5   | Short      | 116.2            | 120.0   | 118.7   | 121.0    | 116.0  | 117.7   | 119.2   | Short      | -      |
| Italy 10y          | IK1 Comdty  | 112.0   | Short                 | 116.2              | 118.9   | 117.8   | 120.3    | 116.2  | 117.1   | 118.4   | Short      | 115.8            | 119.2   | 116.2   | 119.7    | 115.5  | 116.8   | 118.2   | Short      | -      |
| APAC               | Ticker      | Current | Prior Week CTA Signal | 1m Mom.            | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA | 100d MA | 200d MA | CTA Signal | 1m Mom.          | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA | 100d MA | 200d MA | CTA Signal | 1w Chg |
| Japan 10y          | JB1 Comdty  | 125.8   | Short                 | 126.3              | 128.0   | 131.3   | 136.9    | 126.7  | 127.7   | 130.0   | Short      | 126.5            | 127.8   | 131.0   | 135.9    | 126.6  | 127.5   | 129.7   | Short      | -      |
| Australia 10y      | XM1 Comdty  | 94.7    | Short                 | 94.9               | 95.2    | 95.0    | 95.7     | 95.0   | 95.0    | 95.1    | Short      | 95.0             | 95.2    | 95.0    | 95.7     | 94.9   | 95.0    | 95.1    | Short      | -      |
| China 10y          | TFT1 Comdty | 109.4   | Long                  | 109.6              | 109.0   | 108.2   | 108.0    | 109.4  | 109.2   | 108.7   | Long       | 109.5            | 109.0   | 108.2   | 107.8    | 109.4  | 109.2   | 108.7   | Long       | -      |
| Korea 10y          | KAA1 Comdty | 103.9   | Short                 | 105.5              | 107.0   | 110.9   | 119.0    | 105.5  | 106.5   | 109.1   | Short      | 105.4            | 106.5   | 108.9   | 118.6    | 105.3  | 106.1   | 108.8   | Short      | -      |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

Table 8: Interest Rates CTA Signals

"Current" levels are as of afternoon ET Sep 14; see Appendix for definitions

| Global        | Ticker       | Current | Prior Week CTA Signal | Current CTA Levels |         |         |          |        |         |         |            | CTA Levels in 1w |         |         |          |        |         |         |            | 1w Chg |
|---------------|--------------|---------|-----------------------|--------------------|---------|---------|----------|--------|---------|---------|------------|------------------|---------|---------|----------|--------|---------|---------|------------|--------|
|               |              |         |                       | 1m Mom.            | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA | 100d MA | 200d MA | CTA Signal | 1m Mom.          | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA | 100d MA | 200d MA | CTA Signal |        |
| 3M SOFR       | SFR1 Comdty  | 96.4    | Short                 | 96.4               | 96.3    | 96.3    | 95.7     | 96.3   | 96.3    | 96.3    | Long       | 96.4             | 96.3    | 96.3    | 96.0     | 96.3   | 96.3    | 96.3    | Long       | -      |
| Sep 26 expiry | SFR2 Comdty  | 96.0    | Short                 | 96.2               | 96.2    | 96.3    | 96.1     | 96.1   | 96.2    | 96.3    | Short      | 96.2             | 96.1    | 96.3    | 96.3     | 96.1   | 96.2    | 96.1    | Short      | -      |
| Dec 26 expiry | SFR3 Comdty  | 95.8    | Short                 | 96.1               | 96.0    | 96.4    | 96.4     | 96.0   | 96.1    | 96.3    | Short      | 96.0             | 96.0    | 96.2    | 96.5     | 95.9   | 96.1    | 96.3    | Short      | -      |
| Mar 27 expiry | SFR4 Comdty  | 95.6    | Short                 | 96.0               | 96.0    | 96.4    | 96.7     | 95.9   | 96.0    | 96.3    | Short      | 95.9             | 95.9    | 96.2    | 96.8     | 95.8   | 96.0    | 96.3    | Short      | -      |
| Jun 27 expiry | SFR5 Comdty  | 95.4    | Short                 | 95.9               | 96.0    | 96.5    | 97.0     | 95.9   | 96.0    | 96.3    | Short      | 95.9             | 95.9    | 96.2    | 96.9     | 95.8   | 95.9    | 96.3    | Short      | -      |
| Sep 27 expiry | SFR6 Comdty  | 95.4    | Short                 | 95.9               | 96.0    | 96.5    | 97.0     | 95.9   | 96.0    | 96.4    | Short      | 95.9             | 96.0    | 96.3    | 97.0     | 95.8   | 95.9    | 96.3    | Short      | -      |
| Dec 27 expiry | SFR7 Comdty  | 95.4    | Short                 | 96.0               | 96.1    | 96.6    | 97.1     | 95.9   | 96.0    | 96.4    | Short      | 95.9             | 96.1    | 96.4    | 97.0     | 95.8   | 96.0    | 96.3    | Short      | -      |
| Mar 28 expiry | SFR8 Comdty  | 95.4    | Short                 | 96.0               | 96.1    | 96.6    | 97.1     | 95.9   | 96.1    | 96.4    | Short      | 95.9             | 96.1    | 96.5    | 97.0     | 95.9   | 96.0    | 96.4    | Short      | -      |
| Jun 28 expiry | SFR9 Comdty  | 95.5    | Short                 | 96.0               | 96.1    | 96.7    | 97.1     | 95.9   | 96.1    | 96.4    | Short      | 95.9             | 96.2    | 96.5    | 96.9     | 95.9   | 96.0    | 96.4    | Short      | -      |
| Sep 28 expiry | SFR10 Comdty | 95.5    | Short                 | 96.0               | 96.2    | 96.6    | 97.0     | 95.9   | 96.1    | 96.4    | Short      | 95.9             | 96.2    | 96.5    | 96.9     | 95.9   | 96.0    | 96.3    | Short      | -      |
| Dec 28 expiry | SFR11 Comdty | 95.5    | Short                 | 96.0               | 96.2    | 96.6    | 97.0     | 95.9   | 96.1    | 96.4    | Short      | 95.9             | 96.2    | 96.5    | 96.9     | 95.9   | 96.0    | 96.3    | Short      | -      |
| Mar 29 expiry | SFR12 Comdty | 95.5    | Short                 | 95.9               | 96.2    | 96.6    | 96.9     | 95.9   | 96.1    | 96.3    | Short      | 95.9             | 96.2    | 96.4    | 96.8     | 95.9   | 96.0    | 96.3    | Short      | -      |
| Jun 29 expiry | SFR13 Comdty | 95.5    | Short                 | 95.9               | 96.2    | 96.6    | 96.9     | 95.9   | 96.1    | 96.3    | Short      | 95.9             | 96.2    | 96.4    | 96.7     | 95.9   | 96.0    | 96.3    | Short      | -      |
| Sep 29 expiry | SFR14 Comdty | 95.5    | Short                 | 95.9               | 96.2    | 96.5    | 96.8     | 95.9   | 96.1    | 96.3    | Short      | 95.9             | 96.2    | 96.4    | 96.7     | 95.9   | 96.0    | 96.2    | Short      | -      |
| Dec 29 expiry | SFR15 Comdty | 95.5    | Short                 | 95.9               | 96.2    | 96.5    | 96.8     | 95.9   | 96.0    | 96.3    | Short      | 95.9             | 96.2    | 96.3    | 96.7     | 95.8   | 96.0    | 96.2    | Short      | -      |
| Mar 30 expiry | SFR16 Comdty | 95.5    | Short                 | 95.9               | 96.1    | 96.5    | 96.7     | 95.9   | 96.0    | 96.2    | Short      | 95.8             | 96.2    | 96.3    | 96.6     | 95.8   | 96.0    | 96.2    | Short      | -      |
| 3M Euribor    | ER1 Comdty   | 97.3    | Short                 | 97.4               | 97.5    | 97.6    | 98.0     | 97.4   | 97.5    | 97.7    | Short      | 97.4             | 97.5    | 97.4    | 98.0     | 97.4   | 97.5    | 97.6    | Short      | -      |
| 3M SONIA      | SFI1 Comdty  | 96.3    | Neutral               | 96.3               | 96.2    | 96.2    | 95.9     | 96.2   | 96.2    | 96.3    | Neutral    | 96.3             | 96.2    | 96.2    | 96.0     | 96.2   | 96.2    | 96.2    | Neutral    | -      |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

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Global Markets Strategy  
 Delta-One Flows & Positioning  
 14 September 2026

J.P.Morgan

Table 9: Commodity CTA Signals

"Current" levels are as of afternoon ET Sep 14; see Appendix for definitions

| Energy             | Ticker      | Current | Prior Week CTA Signal | Current CTA Levels |         |         |          |        |         |         |             | CTA Levels in 1w |         |         |          |        |         |         |             | 1w Chg |
|--------------------|-------------|---------|-----------------------|--------------------|---------|---------|----------|--------|---------|---------|-------------|------------------|---------|---------|----------|--------|---------|---------|-------------|--------|
|                    |             |         |                       | 1m Mom.            | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA | 100d MA | 200d MA | CTA Signals | 1m Mom.          | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA | 100d MA | 200d MA | CTA Signals |        |
| Brent Crude        | CO1 Comdty  | 104.9   | Long                  | 91.2               | 80.0    | 109.4   | 68.0     | 89.1   | 91.6    | 85.1    | Long        | 89.5             | 73.7    | 107.6   | 68.8     | 92.5   | 91.1    | 86.4    | Long        | -      |
|                    |             |         |                       | 15.1%              | 31.2%   | -4.1%   | 54.4%    | 17.7%  | 14.6%   | 23.2%   |             | 17.2%            | 42.4%   | -2.5%   | 52.5%    | 13.4%  | 15.1%   | 21.4%   |             |        |
| WTI                | CL1 Comdty  | 100.7   | Long                  | 85.1               | 76.7    | 96.9    | 64.0     | 83.2   | 87.0    | 79.9    | Long        | 83.2             | 70.5    | 94.8    | 64.5     | 86.8   | 87.3    | 81.1    | Long        | -      |
|                    |             |         |                       | 18.3%              | 31.3%   | 3.9%    | 57.2%    | 21.0%  | 15.7%   | 26.1%   |             | 21.0%            | 42.8%   | 6.2%    | 56.2%    | 16.0%  | 15.3%   | 24.1%   |             |        |
| US Natural Gas     | NG1 Comdty  | 2.88    | Neutral               | 2.76               | 3.20    | 3.11    | 3.05     | 2.86   | 2.93    | 3.27    | Short       | 2.80             | 3.27    | 3.02    | 2.87     | 2.82   | 2.95    | 3.21    | Neutral     | ↑      |
|                    |             |         |                       | 4.3%               | -10.1%  | -7.4%   | -5.5%    | 0.8%   | -1.7%   | -11.8%  |             | 2.9%             | -11.8%  | -4.5%   | 0.3%     | 2.0%   | -2.3%   | -10.3%  |             |        |
| Gasoline           | XB1 Comdty  | 329.9   | Long                  | 327.6              | 296.6   | 317.1   | 202.7    | 321.4  | 325.2   | 275.8   | Long        | 328.1            | 295.5   | 313.1   | 200.7    | 325.0  | 324.4   | 280.1   | Long        | -      |
|                    |             |         |                       | 0.7%               | 11.2%   | 4.1%    | 62.8%    | 2.7%   | 1.5%    | 19.6%   |             | 0.6%             | 11.6%   | 5.4%    | 64.4%    | 1.5%   | 1.7%    | 17.8%   |             |        |
| Heating Oil        | HO1 Comdty  | 492.0   | Long                  | 444.7              | 315.0   | 438.3   | 236.3    | 417.9  | 393.4   | 342.0   | Long        | 425.7            | 322.8   | 425.8   | 237.7    | 435.8  | 399.5   | 349.8   | Long        | -      |
|                    |             |         |                       | 10.7%              | 56.2%   | 12.3%   | 108.2%   | 17.7%  | 25.1%   | 43.9%   |             | 15.6%            | 52.4%   | 15.5%   | 107.0%   | 12.9%  | 23.2%   | 40.7%   |             |        |
| Low Sulphur Gasoil | QS1 Comdty  | 1,455   | Long                  | 1,292              | 892     | 1,312   | 707      | 1,255  | 1,165   | 1,024   | Long        | 1,245            | 892     | 1,298   | 713      | 1,306  | 1,175   | 1,048   | Long        | -      |
|                    |             |         |                       | 12.7%              | 63.2%   | 10.9%   | 105.9%   | 15.9%  | 24.9%   | 42.0%   |             | 16.8%            | 63.1%   | 12.1%   | 103.9%   | 11.4%  | 23.8%   | 38.8%   |             |        |
| TTT Nat Gas        | TZT1 Comdty | 81.19   | Long                  | 62.93              | 41.51   | 58.59   | 32.56    | 61.88  | 53.87   | 46.16   | Long        | 66.84            | 40.69   | 54.07   | 32.21    | 65.82  | 55.99   | 47.78   | Long        | -      |
|                    |             |         |                       | 29.0%              | 95.6%   | 38.6%   | 149.3%   | 31.2%  | 50.7%   | 75.9%   |             | 21.5%            | 99.5%   | 50.2%   | 152.1%   | 23.3%  | 45.0%   | 69.9%   |             |        |
| Base Metals        | Ticker      | Current | Prior Week CTA Signal | Current CTA Levels |         |         |          |        |         |         |             | CTA Levels in 1w |         |         |          |        |         |         |             | 1w Chg |
|                    |             |         |                       | 1m Mom.            | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA | 100d MA | 200d MA | CTA Signals | 1m Mom.          | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA | 100d MA | 200d MA | CTA Signals |        |
| Copper             | HG1 Comdty  | 633.0   | Long                  | 653.5              | 642.2   | 544.3   | 458.2    | 646.8  | 635.9   | 603.1   | Neutral     | 664.0            | 605.6   | 548.1   | 467.9    | 648.8  | 637.7   | 606.6   | Neutral     | ↑      |
|                    |             |         |                       | -3.1%              | -1.4%   | 16.3%   | 38.1%    | -2.1%  | -0.5%   | 4.9%    |             | -4.7%            | 4.5%    | 15.5%   | 35.3%    | -2.4%  | -0.7%   | 4.3%    |             |        |
| Nickel             | LN1 Comdty  | 16,183  | Neutral               | 16,741             | 17,683  | 16,910  | 15,251   | 16,738 | 17,473  | 17,134  | Short       | 16,851           | 16,630  | 17,111  | 15,225   | 16,726 | 17,312  | 17,179  | Short       | -      |
|                    |             |         |                       | -3.3%              | -8.5%   | -4.3%   | 6.1%     | -3.3%  | -7.4%   | -3.5%   |             | -4.0%            | -2.7%   | -5.4%   | 6.3%     | -3.2%  | -6.5%   | -5.8%   |             |        |
| Aluminum           | LA1 Comdty  | 3,290   | Neutral               | 3,236              | 3,412   | 3,325   | 2,696    | 3,225  | 3,378   | 3,276   | Neutral     | 3,230            | 3,153   | 3,329   | 2,650    | 3,244  | 3,357   | 3,290   | Neutral     | -      |
|                    |             |         |                       | 1.7%               | -3.6%   | -1.1%   | 22.0%    | 2.0%   | -2.6%   | 0.4%    |             | 1.9%             | 4.4%    | -1.1%   | 24.2%    | 1.4%   | -2.0%   | 0.0%    |             |        |
| Precious Metals    | Ticker      | Current | Prior Week CTA Signal | Current CTA Levels |         |         |          |        |         |         |             | CTA Levels in 1w |         |         |          |        |         |         |             | 1w Chg |
|                    |             |         |                       | 1m Mom.            | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA | 100d MA | 200d MA | CTA Signals | 1m Mom.          | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA | 100d MA | 200d MA | CTA Signals |        |
| Gold               | GC1 Comdty  | 4,318   | Long                  | 4,424              | 4,269   | 4,692   | 3,677    | 4,271  | 4,358   | 4,534   | Neutral     | 4,626            | 4,033   | 4,474   | 3,753    | 4,294  | 4,336   | 4,538   | Neutral     | -      |
|                    |             |         |                       | -2.4%              | 1.2%    | -8.0%   | 17.4%    | 1.1%   | -0.9%   | -4.8%   |             | -6.6%            | 7.1%    | -3.5%   | 15.1%    | 0.6%   | -0.4%   | -4.8%   |             |        |
| Silver             | SI1 Comdty  | 63.70   | Neutral               | 65.36              | 67.80   | 72.50   | 41.97    | 62.57  | 67.48   | 72.43   | Short       | 68.43            | 58.56   | 69.86   | 44.22    | 62.98  | 66.76   | 72.66   | Neutral     | ↑      |
|                    |             |         |                       | -2.5%              | -6.0%   | -12.1%  | 51.8%    | 1.8%   | -5.6%   | -12.0%  |             | -6.9%            | 8.8%    | -8.8%   | 44.0%    | 1.1%   | -4.6%   | -12.3%  |             |        |
| Agriculture        | Ticker      | Current | Prior Week CTA Signal | Current CTA Levels |         |         |          |        |         |         |             | CTA Levels in 1w |         |         |          |        |         |         |             | 1w Chg |
|                    |             |         |                       | 1m Mom.            | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA | 100d MA | 200d MA | CTA Signals | 1m Mom.          | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA | 100d MA | 200d MA | CTA Signals |        |
| Soybean            | S 1 Comdty  | 1,285   | Long                  | 1,208              | 1,126   | 1,164   | 1,044    | 1,216  | 1,188   | 1,152   | Long        | 1,233            | 1,121   | 1,168   | 1,011    | 1,228  | 1,195   | 1,156   | Long        | -      |
|                    |             |         |                       | 6.4%               | 14.2%   | 10.4%   | 23.1%    | 5.7%   | 8.2%    | 11.6%   |             | 4.3%             | 14.7%   | 10.0%   | 27.1%    | 4.6%   | 7.5%    | 11.1%   |             |        |
| Corn               | C 1 Comdty  | 512.0   | Long                  | 467.1              | 418.7   | 466.2   | 426.7    | 466.3  | 454.2   | 446.8   | Long        | 502.0            | 411.5   | 465.4   | 425.4    | 475.6  | 457.4   | 449.2   | Long        | -      |
|                    |             |         |                       | 9.6%               | 22.3%   | 9.8%    | 20.0%    | 9.8%   | 12.7%   | 14.6%   |             | 2.0%             | 24.4%   | 10.0%   | 20.4%    | 7.7%   | 11.9%   | 14.0%   |             |        |
| Wheat              | W 1 Comdty  | 707     | Long                  | 673                | 608     | 603     | 529      | 674    | 643     | 598     | Long        | 699              | 585     | 603     | 522      | 686    | 649     | 603     | Long        | -      |
|                    |             |         |                       | 5.0%               | 16.3%   | 17.3%   | 33.7%    | 4.9%   | 9.9%    | 18.3%   |             | 1.1%             | 20.9%   | 17.3%   | 35.4%    | 3.1%   | 9.0%    | 17.3%   |             |        |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

Table 10: FX/Crypto CTA Signals

"Current" levels are as of afternoon ET Sep 14; see Appendix for definitions

| FX/Crypto | Ticker        | Current | Prior Week CTA Signal | Current CTA Levels |         |         |          |        |         |         |             | CTA Levels in 1w |         |         |          |        |         |         |             | 1w Chg |
|-----------|---------------|---------|-----------------------|--------------------|---------|---------|----------|--------|---------|---------|-------------|------------------|---------|---------|----------|--------|---------|---------|-------------|--------|
|           |               |         |                       | 1m Mom.            | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA | 100d MA | 200d MA | CTA Signals | 1m Mom.          | 3m Mom. | 6m Mom. | 12m Mom. | 50d MA | 100d MA | 200d MA | CTA Signals |        |
| EUR/USD   | EC1 Currency  | 1.15    | Long                  | 1.16               | 1.15    | 1.16    | 1.19     | 1.15   | 1.16    | 1.17    | Short       | 1.17             | 1.14    | 1.16    | 1.18     | 1.16   | 1.16    | 1.17    | Short       | -      |
|           |               |         |                       | -0.7%              | 0.1%    | -0.4%   | -3.0%    | -0.1%  | -0.4%   | -1.0%   |             | -1.2%            | 1.1%    | -0.4%   | -2.2%    | -0.1%  | -0.3%   | -1.0%   |             |        |
| GBP/USD   | BP1 Currency  | 134.8   | Long                  | 135.6              | 132.5   | 133.4   | 136.2    | 134.7  | 134.5   | 134.4   | Neutral     | 136.2            | 131.9   | 133.2   | 134.4    | 134.9  | 134.5   | 134.5   | Long        | ↑      |
|           |               |         |                       | -0.6%              | 1.8%    | 1.0%    | -1.0%    | 0.0%   | 0.2%    | 0.3%    |             | -1.0%            | 2.2%    | 1.2%    | 0.3%     | 0.0%   | 0.2%    | 0.2%    |             |        |
| JPY/USD   | JY1 Currency  | 64.6    | Long                  | 63.0               | 62.4    | 63.4    | 68.7     | 62.8   | 62.8    | 63.4    | Long        | 62.9             | 62.2    | 63.0    | 67.8     | 63.1   | 62.9    | 63.4    | Long        | -      |
|           |               |         |                       | 2.6%               | 3.5%    | 2.0%    | -5.9%    | 3.0%   | 2.9%    | 1.9%    |             | 2.8%             | 3.9%    | 2.6%    | -4.6%    | 2.5%   | 2.7%    | 1.9%    |             |        |
| CAD/USD   | CD1 Currency  | 71.9    | Long                  | 72.2               | 71.1    | 73.1    | 72.8     | 71.7   | 72.0    | 72.4    | Short       | 72.3             | 70.6    | 72.5    | 72.2     | 71.8   | 71.9    | 72.4    | Neutral     | -      |
|           |               |         |                       | -0.4%              | 1.2%    | -1.6%   | -1.2%    | 0.4%   | -0.1%   | -0.7%   |             | -0.4%            | 1.9%    | -0.7%   | -0.4%    | 0.2%   | 0.0%    | -0.7%   |             |        |
| AUD/USD   | AD1 Currency  | 71.2    | Long                  | 71.0               | 70.1    | 70.4    | 66.6     | 70.6   | 70.8    | 69.8    | Long        | 71.6             | 68.9    | 69.0    | 65.8     | 70.8   | 70.8    | 70.0    | Long        | ↓      |
|           |               |         |                       | 0.3%               | 1.5%    | 1.2%    | 6.9%     | 0.9%   | 0.6%    | 2.0%    |             | -0.5%            | 3.4%    | 3.2%    | 8.3%     | 0.5%   | 0.6%    | 1.7%    |             |        |
| USD/CNH   | XUC1 Currency | 6.71    | Short                 | 6.73               | 6.76    | 6.88    | 7.09     | 6.74   | 6.76    | 6.84    | Short       | 6.71             | 6.80    | 6.90    | 7.11     | 6.73   | 6.76    | 6.83    | Short       | -      |
|           |               |         |                       | -0.4%              | -0.8%   | -2.5%   | -5.4%    | -0.5%  | -0.9%   | -2.0%   |             | -0.1%            | -1.4%   | -2.8%   | -5.7%    | -0.4%  | -0.8%   | -1.8%   |             |        |
| CHF/USD   | SF1 Currency  | 122.2   | Short                 | 124.2              | 125.8   | 127.8   | 128.0    | 124.0  | 125.5   | 126.5   | Short       | 124.8            | 124.4   | 126.9   | 126.9    | 123.7  | 125.1   | 126.5   | Short       | -      |
|           |               |         |                       | -1.7%              | -2.9%   | -4.4%   | -4.6%    | -1.5%  | -2.6%   | -3.4%   |             | -2.1%            | -1.8%   | -3.7%   | -3.7%    | -1.2%  | -2.4%   | -3.4%   |             |        |
| USD/BRL   | UC1 Currency  | 5,168   | Short                 | 5,211              | 5,143   | 5,276   | 5,319    | 5,147  | 5,109   | 5,202   | Neutral     | 5,158            | 5,188   | 5,236   | 5,333    | 5,147  | 5,120   | 5,196   | Neutral     | -      |
|           |               |         |                       | -0.8%              | 0.5%    | -2.1%   | -2.8%    | 0.4%   | 1.1%    | -0.7%   |             | 0.2%             | -0.4%   | -1.3%   | -3.1%    | 0.4%   | 0.9%    | -0.5%   |             |        |
| Bitcoin   | BTC1 Currency | 79,400  | Long                  | 65,900             | 63,387  | 70,565  | 116,895  | 68,781 | 70,130  | 74,604  | Long        | 78,793           | 59,596  | 68,528  | 111,527  | 70,721 | 70,259  | 74,285  | Long        | -      |
|           |               |         |                       | 20.5%              | 25.3%   | 12.5%   | -32.1%   | 15.4%  | 13.2%   | 6.4%    |             | 0.8%             | 33.2%   | 15.9%   | -28.8%   | 12.3%  | 13.0%   | 6.9%    |             |        |
| Ether     | DCR1 Currency | 2,548   | Long                  | 1,977              | 1,715   | 2,156   | 4,545    | 2,064  | 2,032   | 2,283   | Long        | 2,471            | 1,566   | 2,071   | 4,078    | 2,158  | 2,046   | 2,269   | Long        | -      |
|           |               |         |                       | 28.9%              | 48.6%   | 18.2%   | -43.9%   | 23.4%  | 25.4%   | 11.6%   |             | 3.1%             | 62.6%   | 23.0%   | -37.5%   | 18.0%  | 24.5%   | 12.3%   |             |        |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

## CFTC Futures Positioning

Table 11: Commitment of Traders (COT) Legacy Report

Data as of 9/8/2026

| Equity             | Non-Commercial | Non-Commercial (z) | Non-Commercial w/w Chg | Commercial | Commercial (z) | Commercial w/w Chg |
|--------------------|----------------|--------------------|------------------------|------------|----------------|--------------------|
| S&P 500            | -76,036        | 0.7                | -95 (-0.1z)            | -50,017    | -0.9           | -15,904 (-0.4z)    |
| Nasdaq 100         | 20,895         | 0.2                | -4,995 (-0.4z)         | -41,018    | -0.6           | 4,402 (0.4z)       |
| DJIA               | 16,326         | 1.6                | -1,002 (-0.3z)         | -20,580    | -1.5           | 267 (0.2z)         |
| MSCI EM            | 44,675         | -1.7               | 8,489 (0.5z)           | -68,588    | 0.7            | -14,750 (-0.7z)    |
| Russell 2000       | -82,835        | -1.2               | -11,172 (-0.9z)        | 77,130     | 2.2            | 9,029 (0.7z)       |
| MSCI EAFE          | 15,630         | 0.7                | -8,217 (-0.8z)         | -25,136    | -0.7           | 6,146 (0.6z)       |
| S&P MidCap 400     | 3,253          | 0.3                | -559 (-0.6z)           | -8,112     | -0.7           | 258 (0.3z)         |
| VIX                | -94,829        | -1.2               | -10,644 (-1.0z)        | 90,200     | 1.0            | 10,857 (1.0z)      |
| Fixed Income       | Non-Commercial | Non-Commercial (z) | Non-Commercial w/w Chg | Commercial | Commercial (z) | Commercial w/w Chg |
| 2y UST             | -929,107       | 1.8                | -46,589 (-0.7z)        | 881,575    | -1.7           | 47,475 (0.7z)      |
| 5y UST             | -1,267,493     | 1.2                | 113,020 (0.9z)         | 1,215,779  | -1.2           | -97,221 (-0.8z)    |
| 10y UST            | -834,783       | 0.3                | 74,492 (1.0z)          | 838,172    | 0.9            | -47,209 (-0.5z)    |
| UST Ultra 10y Note | -189,538       | 0.1                | 5,684 (0.1z)           | 280,953    | 0.0            | -8,527 (-0.2z)     |
| UST Long Bond      | -200,517       | -1.5               | -1,016 (0.0z)          | 137,912    | 1.7            | 25,604 (0.6z)      |
| UST Ultra Bond     | -345,140       | -1.6               | 24,171 (1.3z)          | 333,361    | 1.7            | 15,593 (0.6z)      |
| Commodities        | Non-Commercial | Non-Commercial (z) | Non-Commercial w/w Chg | Commercial | Commercial (z) | Commercial w/w Chg |
| WTI                | 136,579        | 0.3                | 6,668 (0.3z)           | -166,185   | -0.3           | -10,180 (-0.5z)    |
| US Natural Gas     | -219,767       | -1.9               | -10,856 (-0.7z)        | 201,126    | 1.8            | 7,694 (0.4z)       |
| Gasoline           | 73,192         | 0.5                | 3,567 (0.4z)           | -87,426    | -0.7           | -4,889 (-0.5z)     |
| Copper             | 92,476         | 2.2                | 11,607 (1.7z)          | -104,644   | -2.3           | -12,537 (-1.8z)    |
| Gold               | 231,960        | 1.1                | 3,836 (0.3z)           | -270,274   | -1.1           | -5,556 (-0.4z)     |
| Silver             | 26,049         | -0.4               | -690 (-0.1z)           | -44,908    | 0.3            | 372 (-0.1z)        |
| Soybean            | 273,424        | 1.5                | 25,437 (0.7z)          | -251,550   | -1.6           | -22,808 (-0.6z)    |
| Corn               | 542,999        | 2.3                | 6,256 (-0.1z)          | -470,605   | -2.4           | 6,216 (0.3z)       |
| Wheat              | 10,470         | 1.7                | -14,233 (-1.1z)        | -12,548    | -1.8           | 11,188 (0.9z)      |
| Interest Rates     | Non-Commercial | Non-Commercial (z) | Non-Commercial w/w Chg | Commercial | Commercial (z) | Commercial w/w Chg |
| 3M SOFR            | -3,103,337     | -1.9               | -164,704 (-0.7z)       | 3,101,838  | 1.9            | 163,939 (0.7z)     |
| 1M Fed Funds       | -83,889        | 0.1                | 219,895 (2.4z)         | 70,872     | -0.1           | -162,390 (-1.8z)   |
| FX/Crypto          | Non-Commercial | Non-Commercial (z) | Non-Commercial w/w Chg | Commercial | Commercial (z) | Commercial w/w Chg |
| EUR/USD            | -42,616        | -1.5               | -17,691 (-0.7z)        | 6,730      | 1.3            | 15,457 (0.5z)      |
| GBP/USD            | -58,836        | -1.3               | -9,261 (-0.7z)         | 57,102     | 0.1            | 11,299 (0.7z)      |
| JPY/USD            | 10,796         | 0.7                | 103,023 (3.6z)         | -14,041    | -0.7           | -111,602 (-3.9z)   |
| CAD/USD            | -70,499        | 0.3                | 37,644 (2.0z)          | 74,429     | -1.2           | -40,853 (-2.0z)    |
| AUD/USD            | -34,870        | -1.5               | 4,536 (0.3z)           | 15,684     | 0.5            | -3,126 (-0.2z)     |
| CHF/USD            | -29,985        | 0.7                | -7,109 (-2.0z)         | 41,504     | 0.1            | 5,416 (1.3z)       |
| Bitcoin            | 1,524          | 0.1                | 821 (1.6z)             | -2,061     | -0.5           | -984 (-2.1z)       |
| Ether              | 2,670          | -0.4               | 1,057 (1.2z)           | -3,151     | 0.2            | -1,081 (-1.6z)     |

Source: J.P. Morgan Equity Derivatives Strategy, CFTC, Bloomberg Finance L.P.

Table 12: Traders in Financial Futures and COT Disaggregated Report

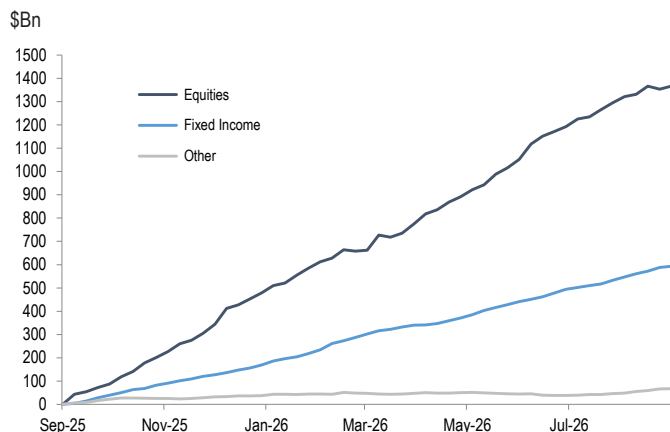
Data as of 9/8/2026

| Equity             | Asset Manager | Asset Manager (z) | Asset Manager w/w Chg | Leveraged Funds | Leveraged Funds (z) | Leveraged Funds w/w Chg | Dealer      | Dealer (z)      | Dealer w/w Chg      | Other Reportables | Other Reportables (z) | Other Reportables |
|--------------------|---------------|-------------------|-----------------------|-----------------|---------------------|-------------------------|-------------|-----------------|---------------------|-------------------|-----------------------|-------------------|
| S&P 500            | 912,361       | 2.9               | -21,819 (-0.8z)       | -341,104        | 0.8                 | -23,540 (-0.5z)         | -685,342    | 0.0             | 35,405 (0.8z)       | -11,968           | 1.8                   | -6,045 (-0.4z)    |
| Nasdaq 100         | 75,526        | 0.0               | 3,649 (0.6z)          | -31,872         | 1.1                 | -17,780 (-1.5z)         | -66,712     | 1.3             | 12,062 (0.8z)       | 2,935             | 1.1                   | 1,476 (0.6z)      |
| DJIA               | 8,591         | 0.5               | 3,064 (0.8z)          | -4,259          | 0.8                 | -2,528 (-0.7z)          | -8,645      | 1.2             | -1,331 (-0.2z)      | 59                | 0.1                   | 60 (0.2z)         |
| MSCI EM            | 525,250       | 1.1               | -9,698 (-0.4z)        | 44,775          | 1.1                 | 1,014 (0.1z)            | -576,160    | 1.1             | -1,488 (-0.1z)      | -17,778           | 1.4                   | 3,911 (0.4z)      |
| Russell 2000       | 23,564        | 0.2               | 6,066 (0.6z)          | -110,147        | 1.9                 | -648 (0.0z)             | 89,619      | 1.2             | -6,974 (-0.7z)      | -8,741            | 1.1                   | -587 (-0.1z)      |
| MSCI EAFE          | 253,063       | 1.3               | 9,199 (0.9z)          | 24,214          | 2.2                 | -2,485 (-0.3z)          | -285,207    | 1.6             | -8,785 (-0.7z)      | -1,576            | 1.0                   | 0 (0.1z)          |
| S&P MidCap 400     | 6,034         | 1.5               | -1,430 (-0.9z)        | 98              | 1.4                 | 529 (0.5z)              | -10,663     | 1.7             | 600 (0.5z)          | -328              | 1.9                   | 0 (0.0z)          |
| VIX                | -37,413       | 1.1               | -6,388 (-0.6z)        | -23,270         | 0.6                 | 2,988 (0.1z)            | 52,894      | 1.1             | 4,032 (0.5z)        | 3,160             | 1.7                   | -419 (-0.4z)      |
| Fixed Income       | Asset Manager | Asset Manager (z) | Asset Manager w/w Chg | Leveraged Funds | Leveraged Funds (z) | Leveraged Funds w/w Chg | Dealer      | Dealer (z)      | Dealer w/w Chg      | Other Reportables | Other Reportables (z) | Other Reportables |
| 2y UST             | 1,621,223     | 2.0               | 24,787 (0.4z)         | -1,290,479      | 2.2                 | -22,445 (-0.5z)         | -443,848    | 1.7             | -9,486 (-0.2z)      | 65,572            | 1.5                   | 8,030 (0.4z)      |
| 5y UST             | 2,847,361     | 1.0               | -80,658 (-0.7z)       | -2,066,289      | 1.4                 | 136,399 (1.1z)          | -855,908    | 1.6             | -41,473 (-0.6z)     | 23,122            | 1.0                   | 1,531 (0.1z)      |
| 10y UST            | 2,561,681     | 1.7               | -42,532 (-0.5z)       | -1,938,754      | 1.2                 | 123,748 (1.7z)          | -634,446    | 1.9             | -47,349 (-0.9z)     | 14,908            | 1.5                   | -6,584 (-0.1z)    |
| UST Ultra 10y Note | 720,046       | 1.4               | 2,078 (0.0z)          | -426,360        | 1.1                 | -3,003 (0.0z)           | -257,050    | 1.3             | -15,817 (-0.5z)     | 54,779            | 1.3                   | 13,899 (0.8z)     |
| UST Long Bond      | 532,667       | 0.9               | -11,802 (-0.3z)       | -276,965        | 1.0                 | 26,080 (0.8z)           | -251,880    | 1.3             | 7,072 (0.3z)        | -66,427           | 1.4                   | 3,238 (0.5z)      |
| UST Ultra Bond     | 1,025,150     | 0.0               | 4,071 (0.0z)          | -864,271        | 1.8                 | 14,218 (0.8z)           | -211,330    | 0.9             | 26,033 (1.2z)       | 38,672            | 2.7                   | -4,558 (-0.9z)    |
| Commodities        | Producer      | Producer (z)      | Producer w/w Chg      | Managed Money   | Managed Money (z)   | Managed Money w/w Chg   | Swap Dealer | Swap Dealer (z) | Swap Dealer w/w Chg | Other Reportables | Other Reportables (z) | Other Reportables |
| Brent Crude        | -340,072      | 0.3               | -8,994 (-0.3z)        | 259,481         | 0.5                 | 9,517 (0.2z)            | 321,702     | 1.3             | -4,540 (-0.2z)      | -263,448          | 1.7                   | 1,085 (0.1z)      |
| WTI                | 308,916       | 0.3               | -486 (0.0z)           | 111,731         | 1.4                 | 17,450 (1.0z)           | -475,101    | 1.4             | -9,694 (-0.4z)      | 24,848            | 1.1                   | -10,782 (-0.7z)   |
| US Natural Gas     | -15,265       | 1.3               | 1,784 (0.2z)          | -96,742         | 1.7                 | -7,261 (-0.3z)          | 216,391     | 1.8             | 5,910 (0.5z)        | -123,025          | 1.0                   | -3,595 (-0.1z)    |
| Gasoline           | -102,029      | 1.0               | -1,060 (-0.1z)        | 92,848          | 1.8                 | 3,633 (0.4z)            | 14,603      | 0.4             | -3,829 (-1.1z)      | -19,656           | 1.5                   | -66 (0.1z)        |
| Copper             | -111,865      | 1.7               | -14,843 (-2.1z)       | 82,154          | 1.8                 | 9,272 (1.6z)            | 7,221       | 1.6             | 2,306 (1.0z)        | 10,322            | 1.6                   | 2,335 (0.6z)      |
| Gold               | -30,961       | 0.2               | 328 (-0.1z)           | 134,972         | 1.1                 | -1,799 (-0.1z)          | -239,313    | 1.7             | -5,884 (-0.4z)      | 96,988            | 0.8                   | 5,635 (0.7z)      |
| Silver             | -17,517       | 0.4               | -842 (-0.6z)          | 14,386          | 1.1                 | 1,788 (0.8z)            | -27,391     | 0.2             | 1,214 (0.4z)        | 11,663            | 1.0                   | -2,478 (-1.0z)    |
| Soybean            | -342,895      | 1.4               | -5,587 (0.0z)         | 257,258         | 1.6                 | 22,338 (0.5z)           | 91,345      | 1.7             | -17,221 (-2.6z)     | 16,166            | 1.3                   | 3,099 (0.4z)      |
| Corn               | -780,916      | 1.1               | 19,227 (0.6z)         | 414,459         | 2.2                 | 13,456 (0.1z)           | 310,311     | 0.5             | -13,011 (-1.6z)     | 128,540           | 1.5                   | -7,200 (-0.7z)    |
| Wheat              | -83,793       | 1.6               | 18,613 (1.5z)         | 4,873           | 1.4                 | -10,031 (-0.7z)         | 71,245      | 0.4             | -7,425 (-1.7z)      | 5,597             | 1.4                   | -4,202 (-0.9z)    |
| Interest Rates     | Asset Manager | Asset Manager (z) | Asset Manager w/w Chg | Leveraged Funds | Leveraged Funds (z) | Leveraged Funds w/w Chg | Dealer      | Dealer (z)      | Dealer w/w Chg      | Other Reportables | Other Reportables (z) | Other Reportables |
| 3M SOFR            | -807,531      | 1.8               | -114,941 (-0.6z)      | -2,803,445      | 1.7                 | -197,465 (-0.9z)        | 3,693,025   | 1.9             | 313,707 (1.2z)      | -83,548           | 1.5                   | -2,066 (-0.1z)    |
| 1M Fed Funds       | -47,822       | 1.3               | 46,761 (1.3z)         | 1,543           | 1.4                 | 92,571 (1.1z)           | -21,038     | 0.4             | -60,217 (-0.8z)     | 54,300            | 1.3                   | -21,610 (-1.8z)   |
| FX/Crypto          | Asset Manager | Asset Manager (z) | Asset Manager w/w Chg | Leveraged Funds | Leveraged Funds (z) | Leveraged Funds w/w Chg | Dealer      | Dealer (z)      | Dealer w/w Chg      | Other Reportables | Other Reportables (z) | Other Reportables |
| EUR/USD            | 250,678       | 1.1               | -12,575 (-0.7z)       | -33,285         | 1.2                 | 4,888 (0.5z)            | -261,454    | 1.1             | 6,124 (0.1z)        | 8,175             | 0.2                   | -671 (-0.4z)      |
| GBP/USD            | -105,864      | 1.3               | 1,469 (0.2z)          | 34,627          | 0.6                 | -8,540 (-1.3z)          | 68,548      | 1.1             | 9,345 (0.5z)        | 955               | 0.8                   | -236 (-0.3z)      |
| JPY/USD            | -570          | 1.2               | 23,951 (2.1z)         | -49,098         | 0.9                 | 53,090 (3.4z)           | -39,477     | 1.5             | -118,798 (-3.8z)    | 85,900            | 1.5                   | 33,178 (3.4z)     |
| CAD/USD            | -30,008       | 0.1               | 19,536 (1.1z)         | -55,448         | 0.3                 | 13,302 (1.8z)           | 82,107      | 1.1             | -35,852 (-1.6z)     | 7,279             | 1.4                   | -195 (-0.1z)      |
| AUD/USD            | -40,199       | 1.5               | -9,732 (-1.1z)        | 49,779          | 0.7                 | 117 (-0.1z)             | -33,579     | 0.1             | 9,877 (0.8z)        | 4,813             | 1.1                   | 1,148 (0.7z)      |
| CHF/USD            | -35,677       | 1.0               | -3,560 (-0.9z)        | -13,440         | 1.0                 | -3,142 (-1.5z)          | 60,845      | 1.1             | 5,102 (1.1z)        | -209              | 1.8                   | -93 (-0.1z)       |
| Bitcoin            | 3,743         | 1.8               | 45 (0.2z)             | -7,892          | 0.8                 | -272 (-0.3z)            | 2,943       | 1.3             | 159 (0.5z)          | 669               | 0.2                   | -95 (-0.2z)       |
| Ether              | -1,653        | 1.8               | -219 (-0.1z)          | -7,286          | 0.7                 | -1,961 (-0.8z)          | 9,403       | 1.4             | 2,045 (1.0z)        | -945              | 1.6                   | 111 (0.3z)        |

Source: J.P. Morgan Equity Derivatives Strategy, CFTC, Bloomberg Finance L.P.

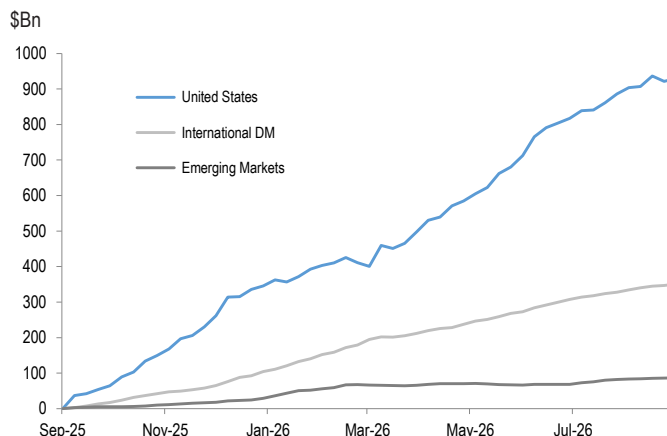
## ETF Flows

Figure 1: Asset Class Flows



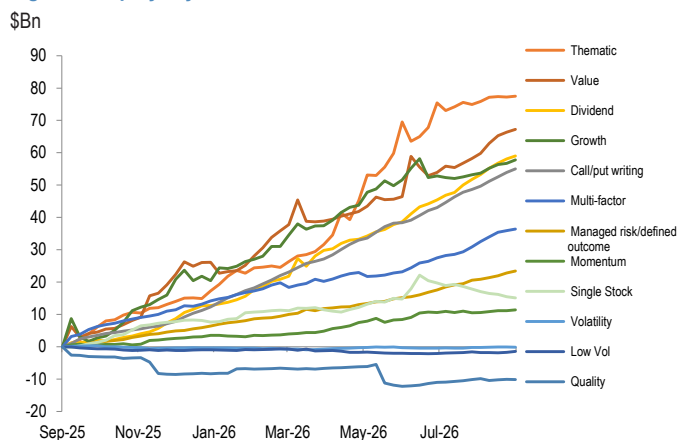
Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

Figure 2: Equity Regional Flows



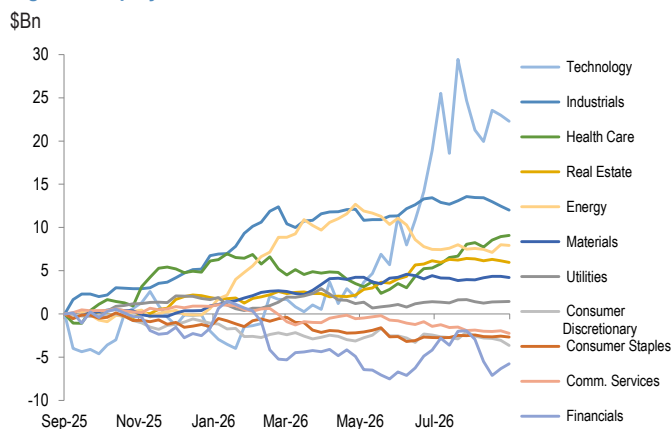
Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

Figure 3: Equity Style Flows



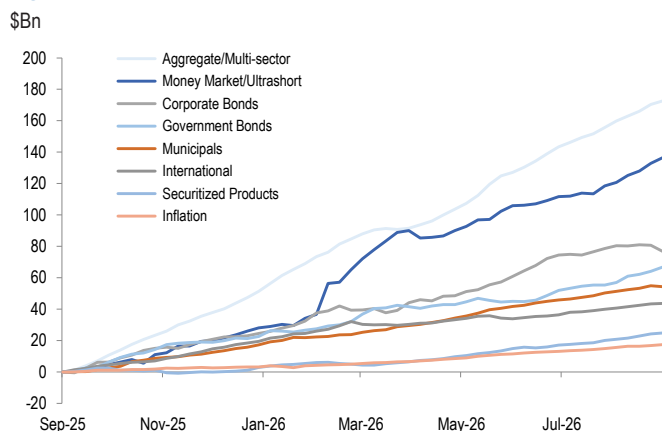
Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

Figure 4: Equity Sector Flows



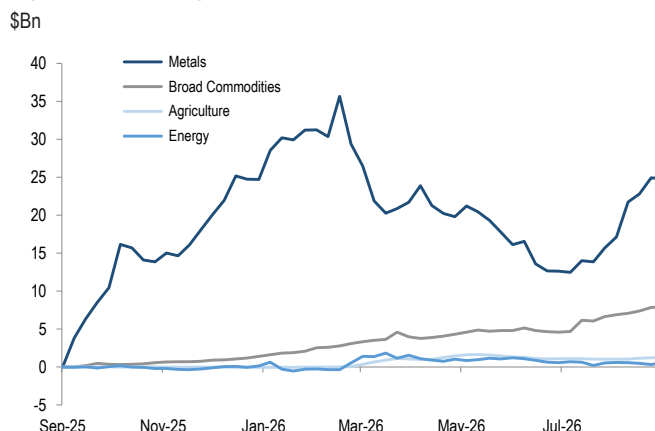
Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

Figure 5: Fixed Income Flows



Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

Figure 6: Commodity Flows



Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

Table 13: ETF Flows by Asset Class

| Asset Class          | Net Flow - 1y History | Net 1w Flow (\$Bn) | Net 4w Flow (\$Bn) | Net 1w Flow (z) | Net 4w Flow (z) |
|----------------------|-----------------------|--------------------|--------------------|-----------------|-----------------|
| Equities             |                       | 12.7               | 44.9               | -0.9            | -2.3            |
| Fixed Income         |                       | 5.3                | 46.3               | -1.5            | 0.0             |
| Commodities          |                       | 0.3                | 9.0                | -0.2            | 1.2             |
| Currency/Multi-asset |                       | 0.7                | 10.2               | 0.0             | 2.1             |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

Table 14: Equity ETF Flows by Region

| Region               | Net Flow - 1y History | Net 1w Flow (\$Mn) | Net 4w Flow (\$Mn) | Net 1w Flow (z) | Net 4w Flow (z) |
|----------------------|-----------------------|--------------------|--------------------|-----------------|-----------------|
| United States        |                       | 8,346              | 25,964             | -0.6            | -1.6            |
| International DM     |                       | 3,816              | 16,052             | -0.9            | -1.5            |
| Europe (Developed)   |                       | 128                | 284                | 0.0             | -0.2            |
| Asia Pac (Developed) |                       | 170                | 478                | -0.2            | -0.6            |
| Japan                |                       | 66                 | 604                | -0.3            | -0.3            |
| Canada               |                       | 48                 | 450                | -0.2            | 0.8             |
| Emerging Markets     |                       | 541                | 2,895              | -0.5            | -0.6            |
| Latam                |                       | 93                 | -179               | 0.1             | -0.4            |
| Mexico               |                       | -15                | -30                | -0.1            | 0.1             |
| Brazil               |                       | 74                 | -137               | 0.1             | -0.5            |
| EM Asia              |                       | -746               | -1,253             | -1.1            | -0.9            |
| China                |                       | -94                | -191               | -0.1            | 0.1             |
| Korea                |                       | -643               | -1,372             | -0.2            | -1.1            |
| India                |                       | -55                | 43                 | 0.0             | 0.3             |
| CEEMEA               |                       | -25                | -48                | -0.6            | -0.5            |
| MENA                 |                       | -6                 | -31                | -0.5            | -0.8            |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

Table 15: Equity ETF Flows by Style

| Style                        | Net Flow - 1y History | Net 1w Flow (\$Mn) | Net 4w Flow (\$Mn) | Net 1w Flow (z) | Net 4w Flow (z) |
|------------------------------|-----------------------|--------------------|--------------------|-----------------|-----------------|
| Growth                       |                       | 1,113              | 4,074              | 0.0             | -0.1            |
| Value                        |                       | 853                | 7,419              | -0.2            | 0.5             |
| Dividend                     |                       | 946                | 5,732              | -0.2            | 0.6             |
| Multi-factor                 |                       | 454                | 3,874              | -0.4            | 0.8             |
| Momentum                     |                       | 256                | 852                | 0.1             | 0.0             |
| Quality                      |                       | -47                | -276               | 0.1             | 0.2             |
| Low Vol                      |                       | 255                | 343                | 1.7             | 1.5             |
| Call/put writing             |                       | 1,119              | 5,357              | 0.1             | 0.9             |
| Managed risk/defined outcome |                       | 633                | 2,551              | 0.7             | 1.4             |
| Volatility                   |                       | -93                | 71                 | -0.8            | 0.3             |
| Thematic                     |                       | 302                | 1,611              | -0.5            | -1.1            |
| Single Stock                 |                       | -343               | -1,954             | -0.7            | -1.4            |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

Table 16: Equity ETF Flows by Sector

| Sector                 | Net Flow - 1y History | Net 1w Flow (\$Mn) | Net 4w Flow (\$Mn) | Net 1w Flow (z) | Net 4w Flow (z) |
|------------------------|-----------------------|--------------------|--------------------|-----------------|-----------------|
| Consumer Discretionary |                       | -588               | -1,072             | -1.4            | -1.2            |
| Consumer Staples       |                       | -81                | -219               | -0.1            | -0.1            |
| Energy                 |                       | -82                | 366                | -0.3            | -0.1            |
| Financials             |                       | 579                | -2,824             | 0.7             | -0.9            |
| Health Care            |                       | 137                | 828                | -0.1            | 0.1             |
| Industrials            |                       | -432               | -1,429             | -1.1            | -1.8            |
| Materials              |                       | -153               | 268                | -0.9            | -0.2            |
| Real Estate            |                       | -186               | -385               | -0.9            | -1.1            |
| Technology             |                       | -720               | 1,002              | -0.4            | -0.2            |
| Comm. Services         |                       | -284               | -354               | -0.9            | -0.3            |
| Utilities              |                       | 23                 | 33                 | 0.0             | -0.1            |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

Table 17: Fixed Income ETF Flows by Segment

| Segment                 | Net Flow - 1y History | Net 1w Flow (\$Bn) | Net 4w Flow (\$Bn) | Net 1w Flow (z) | Net 4w Flow (z) |
|-------------------------|-----------------------|--------------------|--------------------|-----------------|-----------------|
| Aggregate/Multi-sector  |                       | 2.3                | 12.7               | -0.8            | -0.3            |
| Government Bonds        |                       | 2.7                | 9.9                | 1.0             | 1.4             |
| Short-term              |                       | 0.3                | 10.1               | -0.1            | 3.6             |
| Medium-term             |                       | 0.4                | -2.6               | -0.1            | -1.7            |
| Long-term               |                       | 1.9                | 4.0                | 1.7             | 1.3             |
| Corporate Bonds         |                       | -4.0               | -3.6               | -3.0            | -2.7            |
| IG                      |                       | -2.3               | -0.8               | -2.5            | -2.0            |
| HY                      |                       | -1.6               | -2.8               | -1.9            | -1.7            |
| Money Market/Ultrashort |                       | 3.6                | 15.7               | 0.3             | 0.6             |
| Municipals              |                       | -0.5               | 3.0                | -2.6            | -1.2            |
| Mortgage                |                       | 0.1                | 1.4                | -0.2            | 0.8             |
| Inflation               |                       | 0.5                | 1.7                | 0.5             | 0.5             |
| International           |                       | 0.3                | 2.9                | -0.7            | -0.3            |
| Loans                   |                       | 0.4                | 2.6                | 0.2             | 0.9             |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

Table 18: Commodity ETF Flows by Segment

| Segment           | Net Flow - 1y History | Net 1w Flow (\$Mn) | Net 4w Flow (\$Mn) | Net 1w Flow (z) | Net 4w Flow (z) |
|-------------------|-----------------------|--------------------|--------------------|-----------------|-----------------|
| Broad Commodities |                       | 134                | 1,076              | -0.1            | 0.8             |
| Energy            |                       | 254                | -18                | 0.8             | -0.1            |
| Precious Metals   |                       | -105               | 7,734              | -0.3            | 1.1             |
| Base Metals       |                       | 2                  | -48                | -0.2            | -0.7            |
| Agriculture       |                       | 18                 | 213                | -0.1            | 0.4             |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

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## Global Markets Strategy

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**Table 19: Currency/Multi-asset ETF Flows by Segment**

| Currency/Multi-asset | Net Flow - 1y History | Net 1w Flow (\$Mn) | Net 4w Flow (\$Mn) | Net 1w Flow (z) | Net 4w Flow (z) |
|----------------------|-----------------------|--------------------|--------------------|-----------------|-----------------|
| Fiat                 |                       | 24                 | -43                | 0.2             | -0.3            |
| Cryptocurrency       |                       | -210               | 5,704              | -0.3            | 1.4             |
| Asset Allocation     |                       | 150                | 3,104              | -0.2            | 4.4             |
| Liquid Alts          |                       | 722                | 1,397              | 1.8             | 0.7             |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

**Table 20: Top-Performing ETFs**

1W & 4W, excludes levered ETFs

| ETF Name                           | 1w Perf | Ticker | ETF Name                       | 4w Perf |
|------------------------------------|---------|--------|--------------------------------|---------|
| BWET Breakwave Tanker Shipping ETF | 43.9%   | BWET   | Breakwave Tanker Shipping ETF  | 113.1%  |
| BNO United States Brent Oil Fund L | 9.4%    | MRNY   | YieldMax MRNA Option Income St | 104.7%  |
| DBO Invesco DB Oil Fund            | 9.1%    | TOXR   | 21shares XRP ETF               | 35.8%   |
| USO United States Oil Fund LP      | 9.1%    | BSOL   | Bitwise Solana Staking ETF     | 35.4%   |
| DBE Invesco DB Energy Fund         | 7.5%    | XRPC   | Canary XRP ETF                 | 35.4%   |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

**Table 21: Bottom-Performing ETFs**

1W & 4W, excludes levered ETFs

| Ticker | ETF Name                       | 1w Perf | Ticker | ETF Name                        | 4w Perf |
|--------|--------------------------------|---------|--------|---------------------------------|---------|
| URNJ   | Sprott Junior Uranium Miners E | -10.6%  | XAR    | State Street SPDR S&P Aerospace | -16.2%  |
| MSTY   | YieldMax MSTR Option Income St | -8.6%   | JEDI   | Defiance Drone And Modern Warf  | -15.2%  |
| URNM   | Sprott Uranium Miners ETF      | -8.2%   | DRNZ   | REX Drone ETF                   | -13.7%  |
| HOOY   | YieldMax HOOD Option Income St | -8.0%   | AIRR   | First Trust RBA American Indus  | -13.1%  |
| MSOS   | AdvisorShares Pure US Cannabis | -7.0%   | ITA    | iShares U.S. Aerospace & Defen  | -13.0%  |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

**Table 22: Largest Fund Inflows**

1W & 4W

| Ticker | ETF Name                       | 1w Inflow       | Ticker | ETF Name                       | 4w Inflow       |
|--------|--------------------------------|-----------------|--------|--------------------------------|-----------------|
| VOO    | Vanguard S&P 500 ETF           | \$23.4Bn (1.3z) | VOO    | Vanguard S&P 500 ETF           | \$55.4Bn (1.9z) |
| QQQ    | Invesco QQQ Trust Series 1     | \$3.1Bn (0.7z)  | VTI    | Vanguard Morningstar Total Sto | \$6.8Bn (1.7z)  |
| SPY    | State Street SPDR S&P 500 ETF  | \$2.2Bn (0.2z)  | SGOV   | iShares 0-3 Month Treasury Bon | \$6.4Bn (1.2z)  |
| SGOV   | iShares 0-3 Month Treasury Bon | \$1.7Bn (0.6z)  | VGSH   | Vanguard Short-Term Treasury E | \$4.5Bn (3.5z)  |
| IWM    | iShares Russell 2000 ETF       | \$1.7Bn (1.1z)  | GLD    | SPDR Gold Shares               | \$3.5Bn (0.9z)  |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

**Table 23: Largest Fund Outflows**

1W & 4W

| Ticker | ETF Name                       | 1w Outflow        | Ticker | ETF Name                       | 4w Outflow        |
|--------|--------------------------------|-------------------|--------|--------------------------------|-------------------|
| IVV    | iShares Core S&P 500 ETF       | \$-30.7Bn (-1.4z) | IVV    | iShares Core S&P 500 ETF       | \$-65.0Bn (-2.3z) |
| LQD    | iShares iBoxx USD Investment G | \$-1.9Bn (-1.6z)  | QQQ    | Invesco QQQ Trust Series 1     | \$-7.2Bn (-1.6z)  |
| HYG    | iShares iBoxx USD High Yield C | \$-0.9Bn (-1.3z)  | LQD    | iShares iBoxx USD Investment G | \$-5.5Bn (-2.3z)  |
| XLK    | State Street Technology Select | \$-0.6Bn (-1.6z)  | HYG    | iShares iBoxx USD High Yield C | \$-3.4Bn (-2.4z)  |
| GLD    | SPDR Gold Shares               | \$-0.6Bn (-0.5z)  | SPY    | State Street SPDR S&P 500 ETF  | \$-2.9Bn (-0.5z)  |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

## Futures Liquidity

Table 24: Equity Futures Liquidity

See Appendix for definitions

| Americas             | Ticker     | Bid/Ask Spread<br>(% of notional, bps) | Market Depth<br>(contracts, top of book) | Market Depth<br>(z) | ADV<br>(prior week - \$Bn) | ADV<br>(prior week - z) | 1y ADV<br>(\$Bn) |
|----------------------|------------|----------------------------------------|------------------------------------------|---------------------|----------------------------|-------------------------|------------------|
| S&P 500              | ES1 Index  | 0.3                                    | 29                                       | 0.8                 | 601.6                      | 0.3                     | 557.2            |
| Nasdaq 100           | NQ1 Index  | 0.3                                    | 2                                        | 1.0                 | 288.5                      | -1.3                    | 307.3            |
| Russell 2000         | RTY1 Index | 0.6                                    | 4                                        | -0.1                | 26.7                       | -0.1                    | 27.4             |
| DJIA                 | DM1 Index  | 0.5                                    | 2                                        | -1.4                | 17.3                       | -1.0                    | 24.9             |
| S&P MidCap 400       | FA1 Index  | 3.8                                    | 2                                        | 0.8                 | 5.7                        | 0.5                     | 4.8              |
| MSCI EM              | MES1 Index | 1.1                                    | 4                                        | -2.0                | 16.1                       | 0.4                     | 11.9             |
| MSCI EAFE            | MFS1 Index | 0.9                                    | 3                                        | -0.1                | 16.3                       | 1.2                     | 8.0              |
| VIX                  | UX1 Index  | 30.6                                   | 271                                      | -1.3                | 3.3                        | -1.2                    | 3.6              |
| S&P TSX 60           | PT1 Index  | 1.7                                    | 3                                        | -0.1                | 9.0                        | 0.6                     | 6.0              |
| Bovespa              | XB1 Index  | 0.3                                    | 61                                       | -2.0                | 135.2                      | 1.0                     | 114.9            |
| EMEA                 | Ticker     | Bid/Ask Spread<br>(% of notional, bps) | Market Depth<br>(contracts, top of book) | Market Depth<br>(z) | ADV<br>(prior week - \$Bn) | ADV<br>(prior week - z) | 1y ADV<br>(\$Bn) |
| Euro Stoxx 50        | VG1 Index  | 1.6                                    | 267                                      | 1.5                 | 59.1                       | 0.5                     | 47.3             |
| FTSE 100             | Z 1 Index  | 0.8                                    | 8                                        | 0.4                 | 13.6                       | 0.2                     | 11.8             |
| DAX                  | GX1 Index  | 0.9                                    | 2                                        | 1.5                 | 20.8                       | -0.1                    | 21.3             |
| SMI                  | SM1 Index  | 1.2                                    | 6                                        | 0.6                 | 6.6                        | 0.5                     | 5.1              |
| CAC 40               | CF1 Index  | 1.0                                    | 6                                        | 1.8                 | 4.0                        | -0.4                    | 5.4              |
| FTSE/JSE Top 40      | AI1 Index  | 3.7                                    | 3                                        | -0.5                | 1.0                        | -0.2                    | 1.2              |
| BIST 30              | A51 Index  | 1.5                                    | 10                                       | -1.0                | 1.1                        | 0.3                     | 1.0              |
| APAC                 | Ticker     | Bid/Ask Spread<br>(% of notional, bps) | Market Depth<br>(contracts, top of book) | Market Depth<br>(z) | ADV<br>(prior week - \$Bn) | ADV<br>(prior week - z) | 1y ADV<br>(\$Bn) |
| TOPIX                | TP1 Index  | 1.5                                    | 9                                        | 0.2                 | 47.0                       | 3.3                     | 16.1             |
| Nikkei 225           | NK1 Index  | 2.1                                    | 8                                        | 0.9                 | 32.8                       | 2.5                     | 15.6             |
| ASX SPI 200          | XP1 Index  | 1.3                                    | 13                                       | 1.1                 | 7.0                        | 0.0                     | 7.2              |
| KOSPI 200            | KM1 Index  | 1.6                                    | 2                                        | 0.2                 | 30.8                       | 0.1                     | 30.1             |
| Hang Seng            | HI1 Index  | 0.7                                    | 5                                        | 0.6                 | 11.9                       | -1.4                    | 19.8             |
| Hang Seng China Ent. | HC1 Index  | 1.4                                    | 26                                       | 0.7                 | 4.4                        | -1.1                    | 8.2              |
| FTSE China A50       | XU1 Index  | 0.8                                    | 17                                       | 0.6                 | 3.6                        | -1.0                    | 7.1              |
| CSI 300              | IFB1 Index | 1.0                                    | 3                                        | 0.6                 | 22.2                       | -0.5                    | 24.3             |
| CSI 500              | FFD1 Index | 1.3                                    | 3                                        | -1.2                | 36.1                       | -0.2                    | 37.9             |
| CSI 1000             | IFD1 Index | 1.1                                    | 3                                        | -0.9                | 56.3                       | 0.2                     | 54.2             |
| NIFTY 50             | JGS1 Index | 1.0                                    | 3                                        | -0.2                | 2.4                        | -1.0                    | 4.0              |
| SET 50               | BC1 Index  | 1.2                                    | 35                                       | 1.0                 | 0.8                        | -0.5                    | 1.0              |
| SSE50                | FFB1 Index | 1.2                                    | 3                                        | 0.0                 | 6.2                        | -0.7                    | 7.2              |
| SGX FTSE Taiwan      | TWT1 Index | 1.5                                    | 3                                        | 1.1                 | 5.7                        | -0.7                    | 8.3              |
| TAIEX                | FT1 Index  | 1.0                                    | 2                                        | -0.5                | 22.9                       | -0.6                    | 28.0             |
| MSCI Singapore       | QZ1 Index  | 1.9                                    | 4                                        | -1.0                | 0.7                        | -0.6                    | 1.5              |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

**Table 25: Fixed Income Futures Liquidity**

See Appendix for definitions

| Americas           | Ticker      | Bid/Ask Spread<br>(% of notional, bps) | Market Depth<br>(contracts, top of book) | Market Depth (z) | ADV<br>(prior week - \$Bn) | ADV<br>(prior week - z) | 1y ADV (\$Bn) |
|--------------------|-------------|----------------------------------------|------------------------------------------|------------------|----------------------------|-------------------------|---------------|
| 2y UST             | TU2 Comdty  | 0.4                                    | 2,062                                    | -2.1             | 210.2                      | -0.2                    | 245.5         |
| 5y UST             | FV2 Comdty  | 0.7                                    | 1,380                                    | -1.2             | 165.6                      | -0.2                    | 193.5         |
| 10y UST            | TY2 Comdty  | 1.5                                    | 2,951                                    | -1.0             | 226.5                      | -0.2                    | 260.5         |
| UST Ultra 10y Note | UXY2 Comdty | 1.5                                    | 924                                      | -0.8             | 70.0                       | -0.2                    | 83.8          |
| UST Long Bond      | US2 Comdty  | 2.9                                    | 777                                      | -1.8             | 58.5                       | -0.1                    | 63.5          |
| UST Ultra Bond     | WN2 Comdty  | 2.9                                    | 445                                      | -1.3             | 42.4                       | -0.3                    | 53.5          |
| Canada 10y         | CN2 Comdty  | 0.9                                    | 96                                       | -1.2             | 16.0                       | -0.2                    | 17.9          |
| EMEA               | Ticker      | Bid/Ask Spread<br>(% of notional, bps) | Market Depth<br>(contracts, top of book) | Market Depth (z) | ADV<br>(prior week - \$Bn) | ADV<br>(prior week - z) | 1y ADV (\$Bn) |
| Germany 2y         | DU2 Comdty  | 0.5                                    | 2,842                                    | -1.6             | 145.0                      | 0.4                     | 114.3         |
| Germany 5y         | OE2 Comdty  | 0.9                                    | 2,412                                    | -0.3             | 180.3                      | 0.7                     | 135.7         |
| Germany 10y        | RX2 Comdty  | 0.8                                    | 933                                      | 0.1              | 203.2                      | 0.3                     | 182.0         |
| Germany 30y        | UB2 Comdty  | 2.0                                    | 201                                      | 0.3              | 27.0                       | 0.3                     | 23.3          |
| 10y Gilt           | G 2 Comdty  | 1.3                                    | 111                                      | -0.4             | 36.4                       | -0.1                    | 39.5          |
| France 10y         | OAT2 Comdty | 0.9                                    | 169                                      | -1.5             | 44.1                       | 0.1                     | 42.3          |
| Italy 10y          | IK2 Comdty  | 0.9                                    | 205                                      | -1.0             | 50.3                       | 0.0                     | 50.9          |
| APAC               | Ticker      | Bid/Ask Spread<br>(% of notional, bps) | Market Depth<br>(contracts, top of book) | Market Depth (z) | ADV<br>(prior week - \$Bn) | ADV<br>(prior week - z) | 1y ADV (\$Bn) |
| Japan 10y          | JB1 Comdty  | 0.9                                    | 23                                       | -0.7             | 105.0                      | 3.5                     | 35.2          |
| Australia 10y      | XM1 Comdty  | 0.5                                    | 637                                      | -1.7             | 64.5                       | 3.8                     | 18.3          |
| China 10y          | TFT2 Comdty | 0.5                                    | 271                                      | 1.8              | 12.7                       | -0.6                    | 16.7          |
| Korea 10y          | KAA1 Comdty | 1.2                                    | 40                                       | -1.7             | 6.7                        | -1.3                    | 7.1           |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

**Table 26: Interest Rates Futures Liquidity**

See Appendix for definitions

| Global     | Ticker      | Bid/Ask Spread<br>(% of notional, bps) | Market Depth<br>(contracts, top of book) | Market Depth (z) | ADV<br>(prior week - \$Bn) | ADV<br>(prior week - z) | 1y ADV (\$Bn) |
|------------|-------------|----------------------------------------|------------------------------------------|------------------|----------------------------|-------------------------|---------------|
| 3M SOFR    | SFR1 Comdty | 0.3                                    | 12,228                                   | -0.2             | 914.5                      | 0.1                     | 900.3         |
| 3M Euribor | ER1 Comdty  | 0.5                                    | 3,661                                    | -0.5             | 827.4                      | 1.0                     | 543.0         |
| 3M SONIA   | SFI1 Comdty | 0.5                                    | 3,986                                    | 0.0              | 440.2                      | 0.8                     | 317.3         |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

**Table 27: Commodity Futures Liquidity**

See Appendix for definitions

| Energy             | Ticker      | Bid/Ask Spread<br>(% of notional, bps) | Market Depth<br>(contracts, top of book) | Market Depth (z) | ADV<br>(prior week - \$Bn) | ADV<br>(prior week - z) | 1y ADV (\$Bn) |
|--------------------|-------------|----------------------------------------|------------------------------------------|------------------|----------------------------|-------------------------|---------------|
| Brent Crude        | CO1 Comdty  | 2.0                                    | 4                                        | -1.8             | 144.2                      | 0.7                     | 107.8         |
| WTI                | CL1 Comdty  | 1.6                                    | 5                                        | -1.1             | 111.4                      | 0.9                     | 76.0          |
| US Natural Gas     | NG1 Comdty  | 4.1                                    | 15                                       | 0.2              | 12.5                       | -0.6                    | 18.3          |
| Gasoline           | XB1 Comdty  | 3.4                                    | 2                                        | -0.1             | 31.5                       | 1.1                     | 21.4          |
| Heating Oil        | HO1 Comdty  | 4.5                                    | 1                                        | -1.1             | 40.2                       | 1.7                     | 24.2          |
| Low Sulphur Gasoil | QS1 Comdty  | 3.6                                    | 4                                        | -0.9             | 56.5                       | 1.4                     | 35.8          |
| TTF Nat Gas        | TZT1 Comdty | 8.5                                    | 10                                       | -1.4             | 25.7                       | 1.3                     | 15.0          |
| Base Metals        | Ticker      | Bid/Ask Spread<br>(% of notional, bps) | Market Depth<br>(contracts, top of book) | Market Depth (z) | ADV<br>(prior week - \$Bn) | ADV<br>(prior week - z) | 1y ADV (\$Bn) |
| Copper             | HG1 Comdty  | 1.8                                    | 3                                        | -0.9             | 13.2                       | 0.8                     | 10.8          |
| Nickel             | LN1 Comdty  | 9.1                                    | 4                                        | 1.1              | 5.9                        | 0.4                     | 5.1           |
| Aluminum           | LA1 Comdty  | 15.0                                   | 2                                        | -0.2             | 12.7                       | -0.1                    | 13.3          |
| Precious Metals    | Ticker      | Bid/Ask Spread<br>(% of notional, bps) | Market Depth<br>(contracts, top of book) | Market Depth (z) | ADV<br>(prior week - \$Bn) | ADV<br>(prior week - z) | 1y ADV (\$Bn) |
| Gold               | GC1 Comdty  | 0.8                                    | 2                                        | -0.1             | 85.4                       | -0.4                    | 103.5         |
| Silver             | SI1 Comdty  | 2.1                                    | 2                                        | 1.9              | 18.3                       | -0.6                    | 32.4          |
| Agriculture        | Ticker      | Bid/Ask Spread<br>(% of notional, bps) | Market Depth<br>(contracts, top of book) | Market Depth (z) | ADV<br>(prior week - \$Bn) | ADV<br>(prior week - z) | 1y ADV (\$Bn) |
| Soybean            | S 1 Comdty  | 2.2                                    | 45                                       | 1.0              | 19.0                       | 0.4                     | 17.2          |
| Corn               | C 1 Comdty  | 5.0                                    | 288                                      | -0.9             | 11.8                       | 0.5                     | 10.4          |
| Wheat              | W 1 Comdty  | 4.6                                    | 13                                       | -1.0             | 5.7                        | 0.5                     | 4.9           |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

**Table 28: FX/Crypto Futures Liquidity**

See Appendix for definitions

| FX/Crypto | Ticker      | Bid/Ask Spread<br>(% of notional, bps) | Market Depth<br>(contracts, top of book) | Market Depth (z) | ADV<br>(prior week - \$Bn) | ADV<br>(prior week - z) | 1y ADV (\$Bn) |
|-----------|-------------|----------------------------------------|------------------------------------------|------------------|----------------------------|-------------------------|---------------|
| EUR/USD   | EC1 Curncy  | 0.5                                    | 67                                       | 1.7              | 91.6                       | 3.4                     | 31.0          |
| GBP/USD   | BP1 Curncy  | 0.9                                    | 89                                       | -0.5             | 17.3                       | 2.4                     | 8.5           |
| JPY/USD   | JY1 Curncy  | 0.9                                    | 46                                       | -1.2             | 36.5                       | 3.7                     | 14.4          |
| CAD/USD   | CD1 Curncy  | 0.9                                    | 115                                      | 0.6              | 14.5                       | 3.2                     | 5.8           |
| AUD/USD   | AD1 Curncy  | 0.9                                    | 53                                       | -0.6             | 15.1                       | 2.1                     | 7.7           |
| USD/CNH   | XUC1 Curncy | 0.2                                    | 25                                       | 0.9              | 27.8                       | 1.3                     | 20.1          |
| CHF/USD   | SF1 Curncy  | 0.7                                    | 10                                       | 1.9              | 11.9                       | 3.3                     | 4.8           |
| USD/BRL   | UC1 Curncy  | 1.3                                    | 51                                       | -1.4             | 10.0                       | -0.9                    | 12.0          |
| Bitcoin   | BTC1 Curncy | 5.2                                    | 2                                        | -1.2             | 3.0                        | -1.2                    | 5.2           |
| Ether     | DCR1 Curncy | 4.9                                    | 2                                        | -1.4             | 1.6                        | -0.7                    | 2.4           |

Source: J.P. Morgan Equity Derivatives Strategy, Bloomberg Finance L.P.

## Appendix

*\*Unless otherwise specified, all Z-scores are calculated over a 1Y period.  $Z\text{-score} = (\text{Current Value} - \text{Average}) / \text{Standard Deviation}$*

### Flows and Positioning Definitions

1. **Net Flows:** The net flow traded on a futures contract, calculated across the futures chain. Volumes are classified via an attribution of trade-by-trade flows, based on whether the trade price was on the bid side (identified as a sell flow) or offer side (identified as a buy flow) of the order book.
2. **AM + HF:** Asset managers' and Hedge Funds' positioning in the relevant futures contract, as reported in the latest CFTC Traders in Financial Futures report. Expressed as a Z-score.
3. **Non-Commercial:** Non-commercial entities' positioning in the relevant futures contract, as reported in the latest CFTC Commitment of Traders report. Expressed as a Z-score.
4. **OI Change:** The weekly change in the notional value of contracts outstanding for the relevant futures contracts.
5. **OI Correlation w/Spot:** The 3M correlation between changes in the number of contracts outstanding and the price of the future's underlying spot index. A positive (negative) correlation indicates likely increased (decreased) positioning as open interest is growing at the same time as the market is rallying (selling off), indicating the incremental contracts opened are most likely initiated by investors looking to go directionally long (short), respectively.
6. **CTA Signals:** Whether CTAs are likely to be short, neutral, or long a certain futures contract based on key momentum signals – see more below.

### CTA Signals Definitions

1. **CTA Signal:** Whether CTAs are likely to be short, neutral, or long in a certain futures contract based on key momentum signals. Our metric looks at seven signals, assigning a score of -1, 0, or 1 depending on whether the index is below/at/above the relevant signal. The net score determines our CTA metric. The seven signals we look at are 1M, 3M, 6M, and 12M momentum and 50d, 100d, and 200d moving averages. In each cell, the top number is the price level of the signal that indicates where CTAs are likely to buy or sell the contract, and the bottom number is the distance from the signal to the current futures price. Cells shaded in green are currently long momentum signals and those in red are short signals.
2. **1w Chg:** Indicates the change in CTA signals in one week's time if futures levels are unchanged. "↑" indicates CTAs are likely to become longer/less short, "↓" indicates they will become shorter/less long, and "-" indicates no change.

### Liquidity Definitions

1. **Bid/Ask Spread:** The average bid/ask spread on the futures contract, expressed as a percentage of notional, in bps.
2. **Market Depth:** The average number of contracts at the top of the order book intraday (averaged across the bid and offer side).
3. **ADV:** The average daily notional value traded on a particular futures contract.

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