**EHSAN KHOMAN**
*Head of Commodities, ESG and Emerging Markets Research – EMEA*

DIFC Branch – Dubai
T: +971 (0)4 387 5033
E: ehsan.khoman@ae.mufg.jp

**RAMYA RS**
*Analyst*

DIFC Branch – Dubai
T: +971 (0)4 387 5031
E: ramya.rs@ae.mufg.jp

**14 September 2023**

# Technicals, geopolitics and FX are strong headwinds in oil's path towards USD100/b

**Global commodities:** Oil at USD100/b is now in play, although it will not be a smooth ride before the king of the commodities complex makes a challenge for the crown. An acute drain of global oil inventories (already at depleted levels and falling precipitously) will strengthens the narrative for further upward pressure on oil prices. Yet, we believe a pause in the heady pace of crude's recent surge is now likely owing to technicals, geopolitics and FX. Whilst tight fundamentals suggest that the gravitational tilt for prices are to the upside, we however maintain our year-end 2023 and 2024 Brent crude target of USD84/b and USD87/b, respectively, with a surge back north of USD100/b – albeit within striking distance – not our base case scenario (see here).

**Energy:** Oil is steadying after rallying to a 10 month high on forecasts by OPEC and the EIA that production cuts will tighten the market in the months ahead. Meanwhile, Australian strike action that commenced on 8 September at the Gorgon (16 mtpa) and Wheatstone (8 mtpa) LNG export facilities, have not yet impacted LNG exports.

**Base metals:** Until China stimulus achieves material improvement in confidence and/or easing DM policy, we expect little potential for sustained near term gains.

**Precious metals:** Gold has continued its bearish momentum with the robust August US CPI print, reinforcing bets that US rates will stay higher for longer.

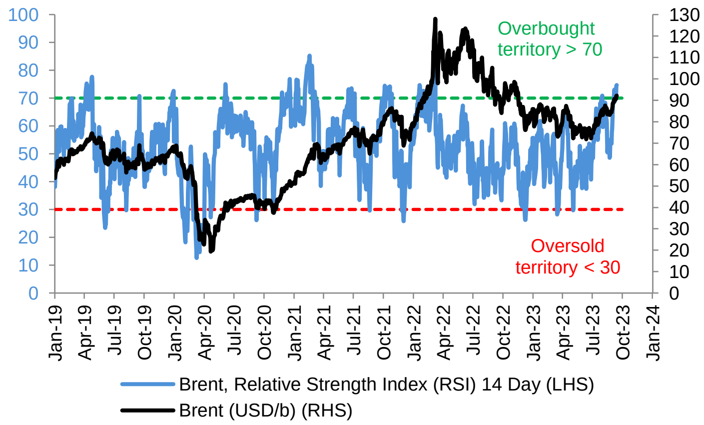
**Bulk commodities:** Iron ore's recent resilience is being tested with fresh data showing a recent spurt in Chinese home sales losing momentum (less than two weeks after authorities eased mortgage restrictions).

**Agriculture:** Corn prices have fallen to one month lows after a US Department of Agriculture (USDA) report forecast corn yields at slightly above market expectations.

**Core indicators:** Price performance and forecasts, flows, market positioning, timespreads, futures, inventories, storage and products performance covered below.

CHART OF THE WEEK: BRENT OIL'S 14 DAY RSI IN OVERBOUGHT TERRITORY

BRENT OIL'S 14 DAY RELATIVE STRENGTH INDEX (RSI) VS SPOT (USD/B)




Where might a pause in oil's sizzling ascent come from? Brent crude's 14 day relative strength index (RSI) – which has historically been a leading indicator of the near-term path of oil prices – has been above 70 (overbought territory) for the past seven trading days, suggesting that a breather is overdue.

*Source: Bloomberg, MUFG Research*

## GLOBAL COMMODITIES (0.1% W/W; -4.6% YTD)

Brent crude calls of USD100/b are in play with OPEC forecasts of the largest deficit in more than a decade in Q4 2023

Oil at USD100/b is now in play, although it will not be a smooth ride before the king of the commodities complex makes a challenge for the crown. The oil market is tightening at a rapid clip as Saudi Arabia and Russia turn the spigots at a time when global oil demand is at all-time highs. In its latest monthly outlook, OPEC forecasts a deficit of more than 3m b/d in Q4 2023 – the largest shortage in more than a decade. Such an acute drain of global oil inventories (already at depleted levels and falling precipitously), strengthens the narrative for further upward pressure on oil prices. Indeed, hedge funds are piling back into the space, with open interest on USD100/b calls currently the most held strike over the next 12 months.

Technicals, geopolitics and FX will be in oil's way towards USD100/b

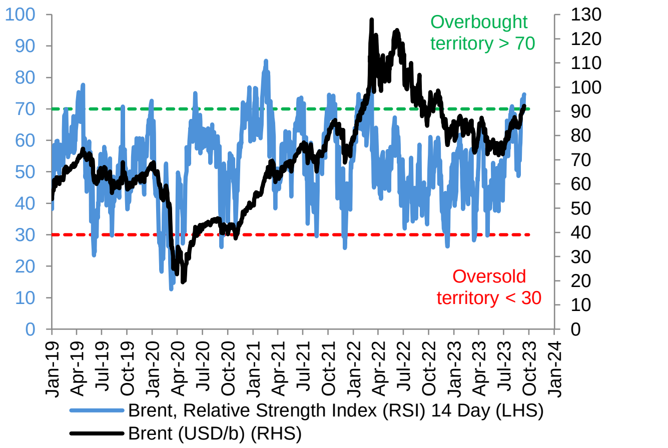
Yet, we believe a pause in the heady pace of crude's recent surge is now likely owing to technicals, geopolitics and FX. First, Brent's 14 day relative strength index (RSI) has been above 70 (overbought territory) for the past seven trading days, signalling that a breather is overdue. Second, the aggressive supply management of OPEC+ risks both (i) hampering the demand for its own barrels should prices runaway to levels that accelerates demand destruction (which runs counter to the group's resolute medium-term stability mandate) as well as; (ii) causing US gasoline prices to surge at a time of political importance in the run-up to the US presidential elections. Third, elevated oil prices risks fanning the flames of global inflation, strengthening the case for higher for longer rates and adding backbone to the US dollar – both could restrain oil. Whilst tight fundamentals suggest that the gravitational tilt for prices are to the upside, we however maintain our year-end 2023 and 2024 Brent crude target of USD84/b and USD87/b, respectively, with a surge back north of USD100/b – albeit within striking distance – not our base case scenario (see here).

Structurally, whilst we are convinced that we remain in a high oil price regime given severe underinvestment miring the oil market, near-term we believe a lower oil price regime holds given adequate supply going into 2024

All in, whilst we do not hold the key to the process of the directional path of oil prices, beyond the three cyclical drivers above, we highlight structural forces that help frame oil prices. One of the advantages of the oil market is that there is a long track record of data. Often, history repeats itself, so it is useful to put price forecasts in historical context. As oil is a real asset, it makes pragmatic sense to do this in inflation adjusted terms. In many markets, frequency distribution of prices often yields one bell curve with prices spread around a central level. However, back in 2000, the oil market has produced two of bell curves – (i) low price in a "demand constrained" market and (ii) high prices in a "supply constrained" market. Whilst our decades-long supercycle thesis is premised on the latter (see here), near-term we see relatively adequate supplied markets into 2024, suggesting prices in the lower price regime (~USD80s/b).

### BRENT CRUDE'S 14 DAY RSI HAS BREACH OVERBOUGHT TERRITORY – SIGNALLING A REVERSAL IS LIKELY

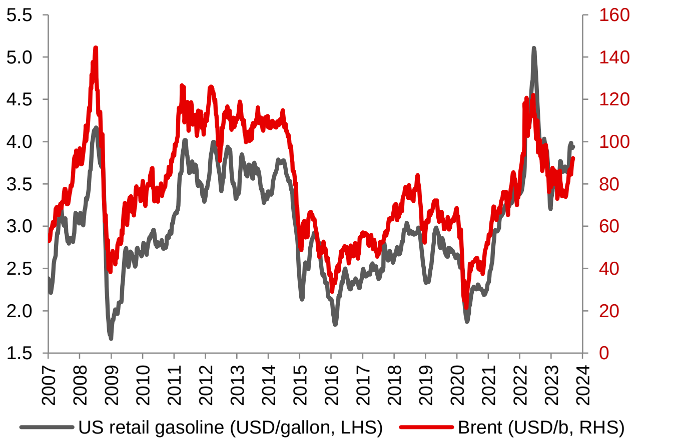
BRENT OIL'S 14 DAY RELATIVE STRENGTH INDEX (RSI) VS SPOT (USD/B)




*Source: Bloomberg, MUFG Research*

### POLITICALLY SENSITIVE US GASOLINE PRICES ARE A WHISKER AWAY FROM BREACHING USD4/GALLON

US RETAIL GASOLINE (USD/GALLON) VS BRENT CRUDE (USD/B)




*Source: Bloomberg, MUFG Research*

## ENERGY (0.6% W/W; -7.6% YTD)

### Crude oil

**Oil steadies post US CPI data after rallying to OPEC, US and IEA's calls for tightening market**

Oil is steadying after rallying to a ten-month high on forecasts by OPEC and the EIA that production cuts will tighten the market in the months ahead. Brent's 14-day RSI remained above 70 for the past seven sessions, suggesting that a breather is overdue. Then came the August US CPI data yesterday, that strengthened the case for more higher for longer, bolstering the US dollar. This led to oil steadying post the rally.

**OPEC's latest report projects the largest shortage in more than a decade**

OPEC released its monthly outlook report this week projecting a deficit of over 3m b/d in Q4 2023. If this were to materialise, this would be the largest shortfall in more than a decade. However, we note that the actual balance could differ, owing to geopolitics and uncertainties surrounding global oil demand. Furthermore, elevated oil prices could spur robust US and sanctioned producers supply responses, akin to the 2022 energy crunch, which is not accounted for in this calculation.

**EIA sees global crude market shortfall this year**

In the EIA's latest short-term energy outlook, the EIA expects US output to grow by around 880m b/d on a y/y basis to a record 12.8m b/d in 2023, while for 2024, supply is expected to grow by 370m b/d to 13.2m b/d. The report also called for sustained global demand for petroleum products and rising prices through the year, following Saudi Arabia's extended voluntary production cuts (see here).

**IEA keeps 2023 oil demand and supply steady; significant shortfall expected as Saudi-Russia alliance extend curbs**

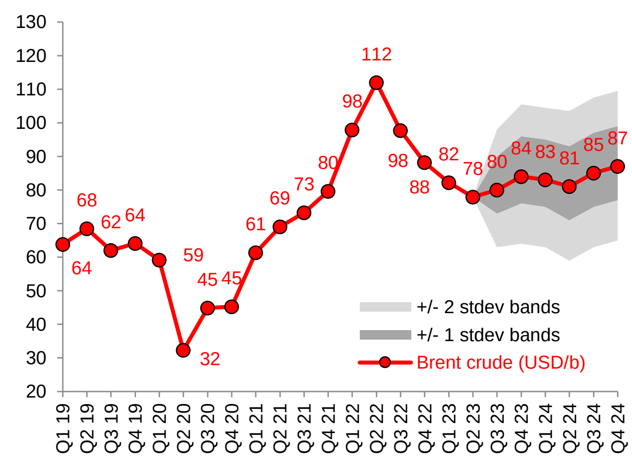
Additionally, the IEA released its latest monthly oil market report, in which it highlighted that even if Saudi Arabia and Russia were to relax their curbs in early 2024, it would continue to keep prices vulnerable to shocks as by then the oil inventories will be severely depleted. According to the IEA, global oil inventories fell in August by a significant 75m barrels, whilst it forecast that the global demand for oil will remain steady at 2.2m b/d and 1m b/d in 2023 and 2024, respectively. On the supply side, however, the forecasts for the reminder of the year remains at 1.5m b/d, while the forecasts for 2024 is up, reaching 1.7m b/d. This reinforces our call for global oil market to remain tight for the rest of 2023, despite China's economic slowdown.

**Oil is currently above USD90/b, and yet, so far, in our view, a rally above USD100/b is not guaranteed**

That being said, we however maintain our year-end 2023 and 2024 target of USD84/b and USD87/b, respectively, with a surge back north of USD100/b not our base case scenario. We continue to believe that the recent price rally is running out of steam with the large leg up already been materialised and look for Brent to subside back into the mid-80s range for the remainder of the year (see here).

**WE ANTICIPATE BRENT OIL TO PRINT NORTH OF USD80/B IN H2 2023 AND 2024 ON SUPPLY TIGHTNESS**

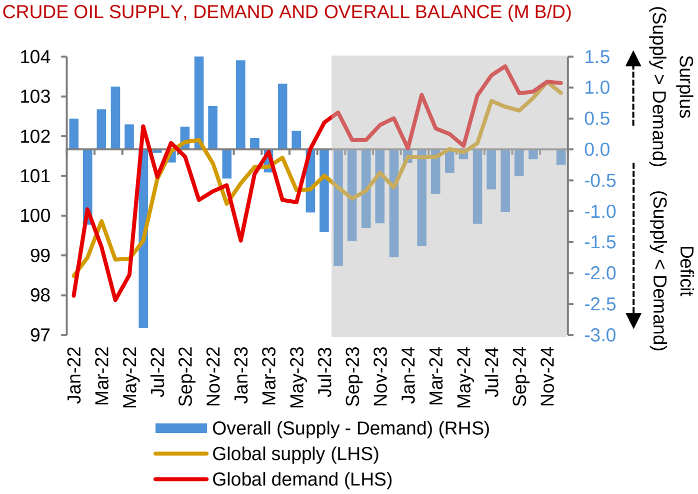
BRENT FORECASTS WITH STANDARD DEVIATION BANDS (USD/B)




*Source: Bloomberg, New York Fed, MUFG Research*

**OIL MARKET FUNDAMENTALS POINT TO A DEEP DEFICIT IN H2 2023 ON HIGHER DEMAND AND WEAKER SUPPLY**

CRUDE OIL SUPPLY, DEMAND AND OVERALL BALANCE (M B/D)




*Source: Bloomberg, EIA, IEA, OPEC, MUFG Research*



MUFG

## Natural gas

European natural gas (TTF) prices fluctuate as impact from the Australian strike action remains muted

In natural gas markets, Australian strike action that commenced on 8 September at the Gorgon (16 mtpa) and Wheatstone (8 mtpa) LNG export facilities, have not yet impacted LNG exports, resulting in European natural gas (TTF) prices remaining in the EUR30-35/MWh range witnessed over the past month. However, extended maintenance at Norwegian fields (~130mcm/day, compared to >300mcm/day in mid-August) is becoming front of mind, having been extended yet again and is expected to go on until 13 September and then capacity will be brought back gradually in the coming days and weeks. That being said, we reiterate our conviction that even a possible strike announcement by Australian Chevron LNG workers will have negligible reverberations on the European natural gas market given the extremely buoyant inventory levels (94% full today compared to 81% this time last year) ahead of the winter heating season – though we acknowledge that supply driven volatility abound.

US Natural gas prices reflected tighter fundamentals and rose higher

US Henry hub prices, meanwhile, ticked higher last week, following price weakness in the previous weeks. The above-normal temperatures was seen stoking demand for the power-plant fuel in the Rocky Mountain region and Northeast next week, though mild weather is expected in the Southeast. The strength in prices come as traders hurry to stock into storage as the winter approaches.

## Carbon markets

EU carbon continue to drop as bearish sentiment gathers pace

EU carbon prices dropped to three-month lows as the prevailing bearish sentiment gathered pace. We believe the shorter-term price outlook will remain lower as expectations are for low demand as the amount of renewable generation increases and the outlook for European industry is weak. The decarbonisation of the industrial sector will also be critical to balance the market in the long-run.

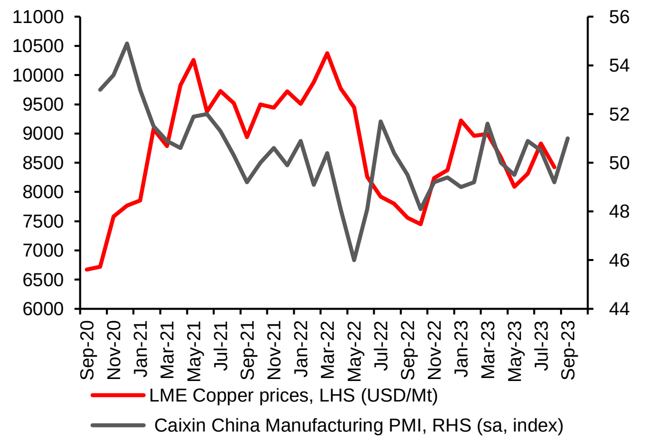
## BASE METALS (-1.3% W/W; -14.2% YTD)

Base metals on the lookout; in hope for on-track Chinese recovery

Base metals were flat to lower in the previous week as concerns around China's ailing property sector were offset by sentiment-boosting gains in the local currency. Better-than-expected Chinese credit data and a sharp rebound in the yuan led to early gains

### COPPER INVENTORIES IMPACTED BY WEAK CHINESE DEMAND AND IDIOSYNCRATIC MARKET STRATEGIES.

PMI, RHS (SA, INDEX) AND COPPER PRICES, LHS (USD/MT)




*Source: Bloomberg, MUFG Research*

### GOLD STEADIED AFTER DROPPING THE MOST IN MORE THAN A MONTH AS USD AND YIELDS JUMP

GOLD PRICES (USD/OZ)


*Source: Bloomberg, MUFG Research*

in the week, however, they were not sustained. Still, concerns around the nation's property sector re-emerged after holders of yuan bonds issued by Sino-Ocean Capital rejected a motion to extend the principal and interest payment, a further signal that investor sentiment remains bleak despite recent support measures by the authorities. Investors are waiting for the Chinese stimulus to feed into physical copper demand during the coming two months. Aluminium and zinc were little changed, while copper and nickel declined.

Base metals complex in hunt for directional conviction but long-run bullish signs for copper and aluminium remain

Looking ahead, directional conviction remains bleak across the base metals complex. As we have recently catalogued, absent an end to the global manufacturing slowdown, the demand environment is set to remain a softening risk to balance and upside restraint on prices (see here). The risk going forward is that the duration of the manufacturing downturn extends into 2024, in part owing to the piecemeal pace of Chinese policy easing, alongside the industrial supply chain reverberations from higher for longer rates across developed markets. That said, structural underinvestment and increasingly resilient green demand growth substantial enough to create deficits continue to be the pillars for base metals structural bull cycle (see here).

## PRECIOUS METALS (-1.1% W/W; 3.9% YTD)

Gold's bearish ETF flows and yield rise leads way to price declines

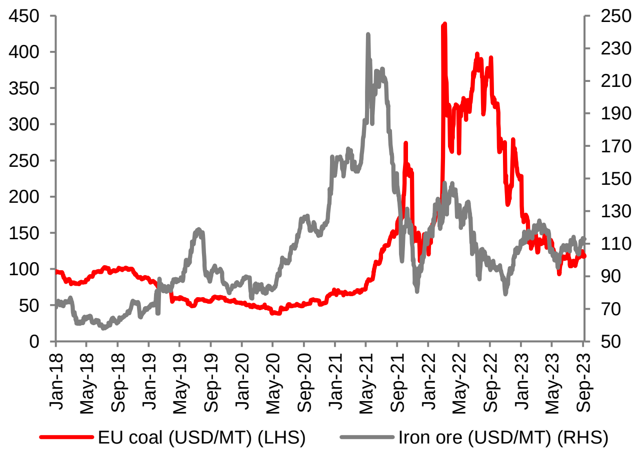
Gold prices slipped last week, reaching a two-week low, as the bullion remains highly sensitive to uptick in US yields. With the US August core CPI coming in near the Fed's 2% inflation target for a third straight month, the robust headline inflation print has led to bear flattening of the yield curve. The market has reinforced bets that US rates will stay higher for longer, leaving a damper on gold. As a non-yielding asset, gold is having to compete for a place in portfolios (less of an issue when bond yields are low, but more challenging as yields rise). Since the early 2020s, investors' allocation to gold rose sharply to historical highs, after geopolitical and epidemic factors spurred central banks to purchase more gold reserves. With increasing optimism [than previously thought] amongst market participants, gold ETF holdings have fallen to the lowest since early 2020 and net long positioning is the lowest since March, with significant new shorts added.

Gold is poised to move higher but it may be a slow grind

Looking ahead, beyond heightened recession fears in DMs, EM central bank demand for gold continues to show strong momentum this year, fuelled by heightened geopolitical tensions and reserve diversification interests. This suggests gold is poised

IRON ORE'S RECENT RESILIENCE IS BEING TESTED WITH FRESH DATA FROM CHINESE PROPERTY

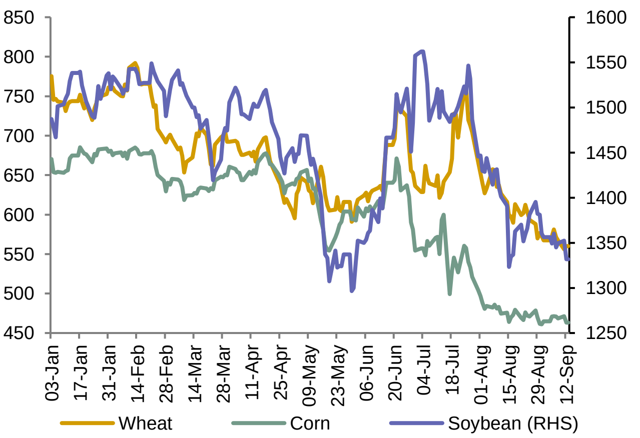
EU COAL AND IRON ORE:PRICES (USD/MT)




*Source: Bloomberg, MUFG Research*

MARKET OVERSUPPLY DRIVES CORN PRICES LOWER WHILE TIGHTNESS IN WHEAT DRIVES WHEAT HIGHER

SOYBEANS, WHEAT AND CORN (USD/BUSHEL)




*Source: Bloomberg, MUFG Research*

to move higher, although it may be more of a slow grind than continued spike. We reiterate the message that a recent survey of money managers signalled that they are positive on gold prices in 2024, even though risks to a stronger US dollar and even higher US rates linger (see here).

## BULK COMMODITIES (4.3% W/W; 8.9% YTD)

Iron ore up after Beijing home sales gets a boost from easing property market curbs

Chinese weekly new home sales data jumped last week, in a sign that the government efforts to revive the sector are yielding some results, particularly in Beijing, if not elsewhere in the country. However, a separate report by Haitong Securities showed sales in China's four largest cities were still down 45% in the first week of September compared to last year. This has put iron ore prices' recent resilience to test. This reinforces our continuous downside caution on iron ore, with micro conditions offering prospects of a softening turn with the surplus trajectory expected in the remaining months of 2023 (see here). We continue to believe that the recent recovery in prices are short-term bound and the stimulus efforts are not sufficient to stabilize the structurally affected property market.

## AGRICULTURE (-1.2% W/W; -3.8% YTD)

Sizable US harvest projections drive corn prices lower

Corn prices lost more ground this week, along with soybeans, after the US Department of Agriculture (USDA) report showed crops suffered less-than-expected damage. Wheat prices, however, fell to a 33-month low on 12 September, following oversupplied grains from Russia, but prices rebounded after the USDA forecasted tightening global supplies. In its monthly World Agricultural Supply and Demand Estimates report, the USDA lifted its forecast for production of corn to 15.134bn bushels – the second-biggest US harvest on record – with average yields of 173.8 bushels an acre. This higher supply from the US will add to an ample global stockpile resulting from a massive crop in Brazil.

## Commodity prices – performance

| | Commodity | Ticker | Unit | 2022 | 2022/2023 | | | | Change % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 31-Dec | 22-Aug | 29-Aug | 05-Sep | 12-Sep | Week | 1 MTD | 3 MTD | YTD | 1 Year | 3 Years | 5 years |
| 1 | Bloomberg BCOM Total Returns | BCOMTR Index | Index | 245.89 | 234.05 | 238.46 | 240.64 | 241.29 | 0.27 | 0.86 | 7.00 | -1.94 | -6.81 | 57.90 | 40.99 |
| 2 | Bloomberg BCOM Spot Index | BCOMSP Index | Index | 536.54 | 498.35 | 507.20 | 511.31 | 511.84 | 0.10 | 0.68 | 6.26 | -4.60 | -11.87 | 45.41 | 48.52 |
| 3 | Energy | BCOMENSP Index | Index | 423.92 | 389.36 | 391.84 | 405.08 | 414.49 | 2.32 | 4.01 | 25.49 | -2.22 | -26.95 | 90.88 | 28.91 |
| 4 | US Natural Gas | NG1 Comdty | USD/MMBtu | 4.475 | 2.56 | 2.556 | 2.582 | 2.743 | 6.24 | -0.87 | 17.26 | -38.68 | -66.88 | 20.93 | -2.59 |
| 5 | EU Natural Gas | TZT1 Comdty | EUR/MMBtu | 76.315 | 42.908 | 35.195 | 34.449 | 34.701 | 0.73 | -0.94 | 11.81 | -54.53 | -81.79 | 230.58 | 26.21 |
| 6 | WTI Crude | CL1 Comdty | USD/b | 80.26 | 80.35 | 81.16 | 86.69 | 88.84 | 2.48 | 6.60 | 28.42 | 11.08 | 2.11 | 138.82 | 29.98 |
| 7 | Brent Crude | CO1 Comdty | USD/b | 85.91 | 84.03 | 85.49 | 90.04 | 92.06 | 2.24 | 6.29 | 24.27 | 7.46 | -0.91 | 131.79 | 18.09 |
| 8 | Gasoline | XB1 COMB Comdty | USD/lb | 245.95 | 278.91 | 279.05 | 258.1 | 272.79 | 5.69 | -1.78 | 6.22 | 10.47 | 9.54 | 148.16 | 36.34 |
| 9 | EU ETS EUA | MO1 Comdty | USD/gal | 81.49 | 88.92 | 83.88 | 82.95 | 80.23 | -3.28 | -5.46 | -6.81 | -1.55 | 12.30 | 184.10 | 250.04 |
| 10 | Metals | BCOMIN Index | Index | 165.34 | 140.79 | 142.63 | 143.96 | 142.05 | -1.33 | -0.65 | -2.35 | -14.23 | -8.58 | 20.29 | 22.01 |
| 11 | Industrial Metals Index | BCOMINSP Index | Index | 290.239 | 253.586 | 256.894 | 259.2827 | 255.8431 | -1.33 | -0.48 | -1.36 | -11.85 | -5.83 | 25.21 | 31.38 |
| 12 | Copper | HG1 Comdty | USD/lb | 381 | 376 | 379 | 381 | 375 | -1.55 | -0.54 | 0.00 | -1.54 | 3.49 | 23.67 | 41.13 |
| 13 | Aluminium | LA1 Comdty | USD/MT | 2,350 | 2,144 | 2,136 | 2,153 | 2,158 | 0.24 | -0.72 | -1.57 | -8.14 | -4.98 | 24.21 | 6.42 |
| 14 | Zinc | LX1 Comdty | USD/MT | 2,990 | 2,324 | 2,435 | 2,460 | 2,454 | -0.23 | 1.35 | 4.41 | -17.92 | -23.56 | 0.22 | 3.89 |
| 15 | Nickel | LN1 Comdty | USD/MT | 29,901 | 20,323 | 20,515 | 20,868 | 19,704 | -5.58 | -2.04 | -4.69 | -34.10 | -19.68 | 30.92 | 57.10 |
| 16 | Precious Metals Index | BCOMPRSP Index | Index | 534.84 | 555.39 | 571.46 | 561.90 | 555.48 | -1.14 | -2.53 | -1.49 | 3.86 | 14.41 | -3.34 | 61.50 |
| 17 | Gold | GC1 Comdty | USD/t oz | 1,826 | 1,896 | 1,937 | 1,934 | 1,917 | -0.88 | -1.58 | -1.46 | 4.93 | 12.25 | -1.20 | 59.31 |
| 18 | Silver | SI1 Comdty | USD/t oz | 24.04 | 23.45 | 24.788 | 23.558 | 23.127 | -1.83 | -5.50 | -3.87 | -3.80 | 17.07 | -13.51 | 62.96 |
| 19 | Platinum | PL1 Comdty | USD/t oz | 1074 | 926 | 986 | 934 | 913 | -2.22 | -6.66 | -7.37 | -15.29 | 2.92 | -3.20 | 13.22 |
| 20 | Palladium | PA1 Comdty | USD/t oz | 1,798 | 1,265 | 1,244 | 1,204 | 1,236 | 2.67 | 2.35 | -6.77 | -31.25 | -45.28 | -46.56 | 24.45 |
| 21 | Bulk Commodities | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 22 | Hard Coking Coal | IAC1 Comdty | USD/MT | 262.82 | 257.5 | 256.75 | 272.67 | 288 | 5.62 | 12.69 | 27.15 | 9.58 | 8.27 | 153.74 | 46.94 |
| 23 | Iron Ore | SCO1 Comdty | USD/MT | 111.28 | 108.63 | 109.23 | 117.54 | 120.93 | 2.88 | 10.01 | 6.43 | 8.15 | 17.84 | -5.64 | 75.54 |
| 24 | Agriculture | BCOMAG Index | Index | 68.82 | 65.58 | 67.25 | 67.11 | 66.29 | -1.22 | -0.57 | -1.36 | -3.82 | -5.48 | 70.34 | 58.48 |
| 25 | Agriculture Index | BCOMAGSP Index | Index | 433.80 | 379.946 | 389.653 | 388.8278 | 384.303 | -1.16 | -0.37 | -1.46 | -11.41 | -13.16 | 45.36 | 59.77 |
| 26 | Grain Index | BCOMGRSP Index | Index | 327.54 | 262.41 | 264.42 | 261.88 | 258.24 | -1.39 | -1.13 | -5.47 | -21.16 | -22.50 | 31.07 | 43.77 |
| 27 | Soybean | S 1 Comdty | USD/bu | 1,519 | 1,352 | 1,382 | 1,349 | 1,332 | -1.28 | -2.08 | -2.99 | -12.34 | -14.07 | 32.45 | 60.65 |
| 28 | Wheat | W 1 Comdty | USD/bu | 792.00 | 601.75 | 569.75 | 572.50 | 560.25 | -2.14 | -2.23 | -11.60 | -29.26 | -33.40 | 4.96 | 16.29 |
| 29 | Corn | C 1 Comdty | USD/bu | 678.50 | 466.50 | 469.50 | 471.00 | 463.25 | -1.65 | 0.49 | -24.95 | -31.72 | -34.96 | 26.92 | 35.65 |
| 30 | Soft Index | BCOMOSP Index | Index | 345.72 | 352.39 | 370.37 | 379.99 | 380.12 | 0.03 | 2.77 | -1.12 | 9.95 | 0.37 | 60.93 | 71.76 |
| 31 | Cotton | CT1 Comdty | USD/lb | 83.37 | 84.99 | 87.09 | 88.00 | 87.49 | -0.58 | -0.69 | 4.79 | 4.94 | -20.62 | 36.58 | 5.72 |
| 32 | Coffee | KC1 Comdty | USD/lb | 167.30 | 146.60 | 151.35 | 151.40 | 150.70 | -0.46 | -1.31 | -18.78 | -9.92 | -33.83 | 13.01 | 54.01 |
| 33 | Sugar | SB1 Comdty | USD/lb | 20.04 | 23.40 | 25.45 | 26.65 | 26.83 | 0.68 | 7.06 | 5.34 | 33.88 | 46.21 | 125.08 | 129.91 |
| 34 | Livestock Index | BCOMLISP Index | Index | 218.93 | 230.84 | 234.41 | 235.29 | 239.40 | 1.75 | 1.66 | 2.14 | 9.35 | 13.35 | 54.63 | 57.94 |
| 35 | Live Cattle | LC1 Comdty | USD/lb | 154.83 | 177.95 | 181.00 | 179.95 | 184.15 | 2.33 | 2.46 | 2.83 | 18.94 | 26.35 | 74.51 | 65.19 |
| 36 | Lean Hogs | LH1 Comdty | USD/lb | 87.70 | 79.58 | 80.73 | 83.18 | 85.28 | 2.52 | 3.30 | -2.18 | -2.77 | -7.18 | 28.09 | 52.82 |
| 37 | USD Index | DXY Index | Index | 103.52 | 103.56 | 103.53 | 104.81 | 104.71 | -0.09 | 1.00 | 1.28 | 1.10 | -4.69 | 12.14 | 10.73 |

*Source: Bloomberg, MUFG Research*

## Commodity prices – quarterly and annual forecasts

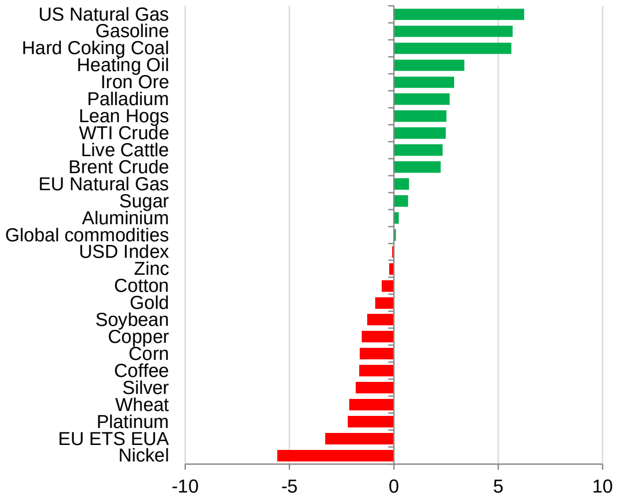
| | Commodity | Ticker | Unit | 12-Sep | Quarter Averages | | | | | | | | Annuals | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Spot | Q1-23 | Q2-23 | Q3-23 | Q4-23 | Q1-24 | Q2-24 | Q3-24 | Q4-24 | 2022 | 2023 | 2024 | 2025 |
| 1 | Energy | | | | | | | | | | | | | | | |
| 2 | US Natural Gas | NGA Comdty | USD/MMBtu | 2.74 | 2.80 | 2.50 | 2.90 | 3.10 | 3.40 | 3.60 | 3.75 | 4.15 | 4.61 | 2.82 | 3.73 | 4.50 |
| 3 | EU Natural Gas | TZTA Comdty | EUR/MWh | 34.70 | 54.38 | 75.11 | 33.00 | 62.00 | 58.00 | 45.00 | 65.00 | 68.00 | 106.35 | 68.84 | 79.75 | 68.00 |
| 4 | EU ETS EUA | MOA Comdty | EUR/MT | 81.08 | 89.92 | 86.47 | 84.00 | 90.00 | 92.00 | 83.00 | 97.00 | 105.00 | 83.57 | 87.48 | 94.25 | 110.00 |
| 5 | WTI Crude | CLA Comdty | USD/b | 88.84 | 76.32 | 88.62 | 76.00 | 79.00 | 78.00 | 77.00 | 81.00 | 83.00 | 81.01 | 76.95 | 79.75 | 86.00 |
| 6 | Brent Crude | COA Comdty | USD/b | 92.06 | 81.62 | 92.97 | 80.00 | 84.00 | 83.00 | 81.00 | 85.00 | 87.00 | 86.16 | 81.02 | 84.00 | 90.00 |
| 7 | Industrial Metals | | | | | | | | | | | | | | | |
| 8 | Copper | LMCADS03 Comdty | USD/lb | 8,391 | 9,507 | 8,150 | 8,350 | 8,400 | 8,800 | 9,200 | 9,800 | 10,150 | 8,792 | 8,465 | 9,488 | 10,350 |
| 9 | Aluminium | LMAHDS03 Comdty | USD/MT | 2,197 | 2,896 | 2,275 | 2,450 | 2,600 | 2,850 | 3,100 | 3,200 | 3,450 | 2,711 | 2,441 | 3,150 | 3,700 |
| 10 | Zinc | LMZSDS03 Comdty | USD/MT | 2,479 | 3,863 | 2,525 | 2,400 | 2,450 | 2,775 | 2,900 | 3,000 | 3,150 | 3,440 | 2,621 | 2,956 | 3,650 |
| 11 | Nickel | LMNIDS03 Comdty | USD/MT | 19,923 | 28,922 | 22,900 | 22,250 | 20,000 | 19,650 | 21,000 | 21,600 | 22,250 | 25,598 | 22,833 | 21,125 | 23,500 |
| 12 | Precious Metals | | | | | | | | | | | | | | | |
| 13 | Gold | XAU Comdty | USD/t oz | 1,935 | 1,918 | 1,955 | 2,045 | 2,030 | 2,015 | 2,085 | 2,100 | 2,030 | 1,856 | 2,000 | 2,058 | 1,950 |
| 14 | Silver | XAG Comdty | USD/t oz | 23.40 | 22.72 | 23.50 | 25.60 | 24.50 | 24.00 | 24.50 | 25.10 | 25.70 | 22.46 | 24.26 | 24.83 | 23.80 |
| 15 | Platinum | XPT Comdty | USD/t oz | 913 | 1,002.78 | 1,035 | 1,005 | 970 | 1,090 | 1,175 | 1,250 | 1,300 | 940.84 | 1,003 | 1,204 | 1,260 |
| 16 | Palladium | XPD Comdty | USD/t oz | 1,245 | 1,562 | 1,926 | 1,480 | 1,450 | 1,415 | 1,550 | 1,600 | 1,750 | 2,021 | 1,473 | 1,579 | 1,800 |
| 17 | Bulk Commodities | | | | | | | | | | | | | | | |
| 18 | Hard Coking Coal | IACA Comdty | USD/MT | 288.00 | 321.87 | 308.86 | 290.00 | 295.00 | 305.00 | 320.00 | 315.00 | 295.00 | 291.13 | 294.22 | 308.75 | 355.00 |
| 19 | Iron Ore | SCOA Comdty | USD/MT | 120.93 | 124.77 | 141.61 | 105.00 | 100.00 | 98.00 | 105.00 | 100.00 | 115.00 | 121.33 | 111.19 | 104.50 | 112.50 |
| 20 | Agriculture | | | | | | | | | | | | | | | |
| 21 | Soybean | BOA Comdty | USD/bu | 1,347 | 1,503 | 1,393 | 1,500 | 1,515 | 1,450 | 1,420 | 1,480 | 1,525 | 1,429 | 1,499 | 1,469 | 1,490 |
| 22 | Wheat | W A Comdty | USD/bu | 587.50 | 733.77 | 1019.17 | 730.00 | 775.00 | 810.00 | 840.00 | 820.00 | 850.00 | 876.51 | 737.19 | 830.00 | 910.00 |
| 23 | Corn | C A Comdty | USD/bu | 476.50 | 656.43 | 643.92 | 705.00 | 685.00 | 710.00 | 725.00 | 700.00 | 680.00 | 658.70 | 676.61 | 703.75 | 715.00 |
| 24 | Cotton | CTA Comdty | USD/lb | 88.30 | 83.34 | 92.18 | 72.00 | 78.00 | 80.00 | 85.00 | 82.00 | 86.00 | 92.79 | 78.34 | 83.25 | 85.00 |
| 25 | Coffee | DFA Comdty | USD/lb | 2430 | 2,022 | 2,054 | 2,030 | 1,960 | 1,950 | 1,975 | 1,980 | 2,000 | 2,039 | 2,048 | 1,976 | 2,005 |
| 26 | Sugar | SBA Comdty | USD/lb | 27.07 | 19.91 | 18.26 | 21.60 | 20.80 | 20.20 | 20.35 | 19.60 | 19.65 | 17.60 | 21.08 | 19.95 | 19.40 |

*Source: Bloomberg, MUFG Research*

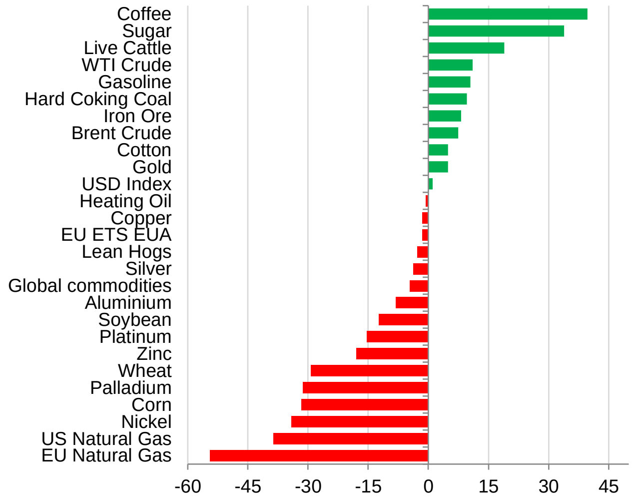
## Commodity prices – 6-12 month forward outlook, vs. spot/nearby forwards

| | | Bullish | Neutral-to-bullish | Neutral | Neutral-to-bearish | Bearish |
|---|---|---|---|---|---|---|
| 1 | Energy | --- | Brent, WTI | EU ETS EUA | --- | EU/US nat gas |
| 2 | Base Metals | --- | --- | Nickel | Aluminium, Copper, Zinc | --- |
| 3 | Precious Metals | --- | --- | Gold, Silver | Platinum | Palladium |
| 4 | Bulk Commodities | --- | Hard Coking Coal | Iron ore | | --- |
| 5 | Agriculture | --- | Corn, Wheat | Soybean | --- | Cotton, Coffee, Sugar |

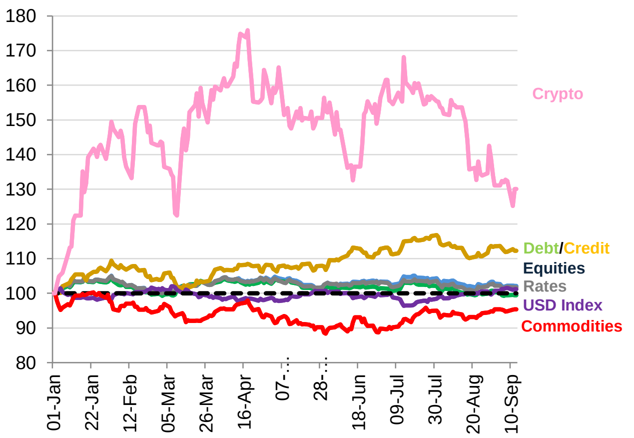
## COMMODITIES MARKET PRICE RETURNS
WEEK ENDING 12 September 2023 (% W/W)



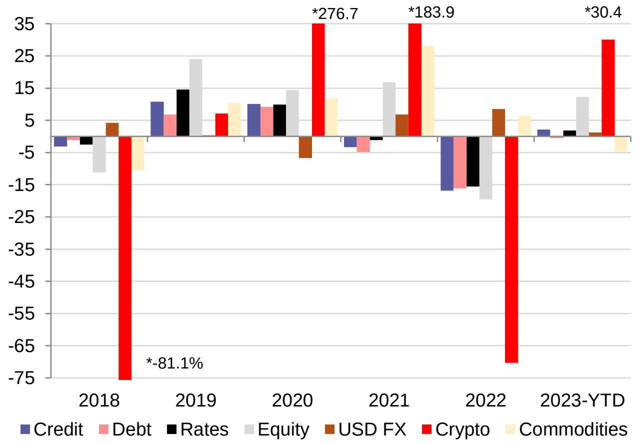

## COMMODITIES MARKET PRICE RETURNS
YEAR-TO-DATE 2023 (%)



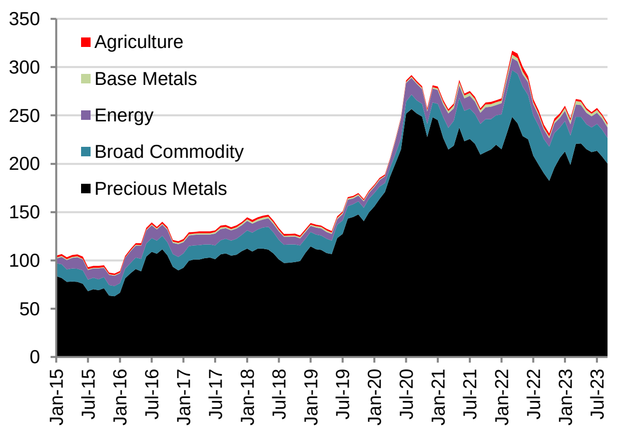

## USD-DENOMINATED GLOBAL ASSET MARKET RETURNS
REBASED 1 JANUARY 2023 = 100



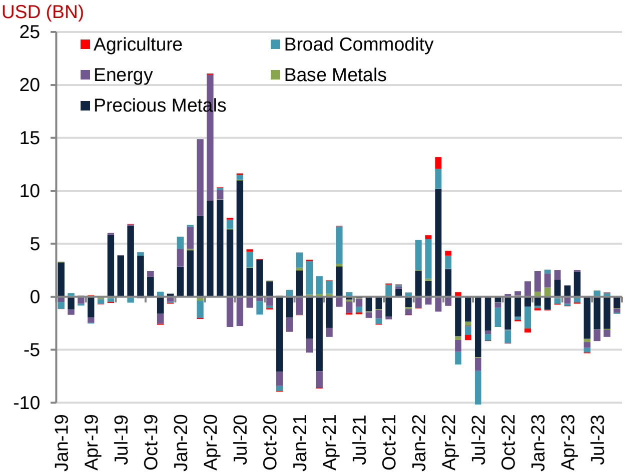

## USD-DENOMINATED GLOBAL ASSET MARKET RETURNS
ANNUALISED PERFORMANCE (%)




## COMMODITIES ETF COMBINED CUMULATIVE AUM
USD (BN)




## COMMODITIES ETF COMBINED CUMULATIVE FUND FLOWS
USD (BN)

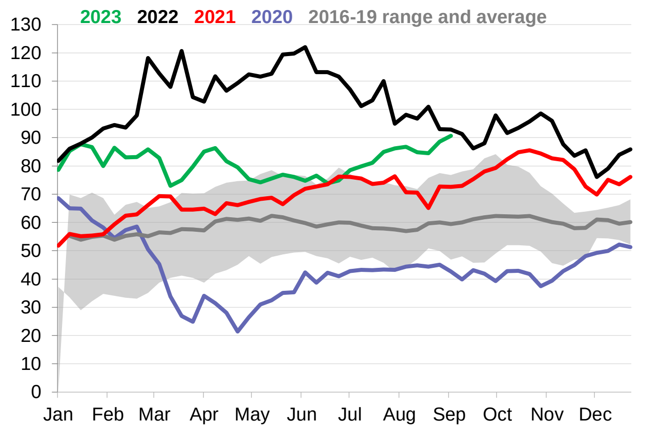


*Source: Bloomberg, MUFG Research*

# Core indicators – prices

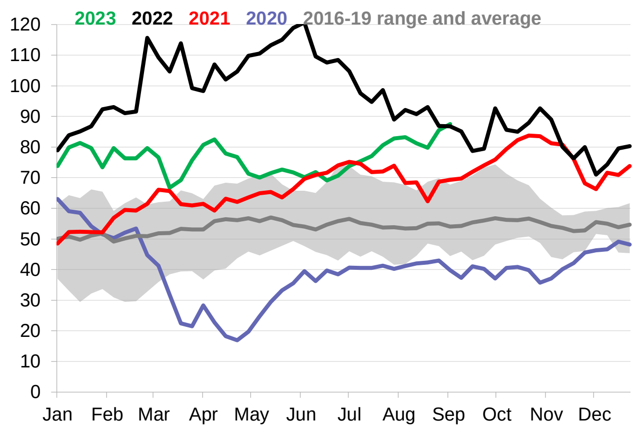
## BRENT SPOT

USD/B



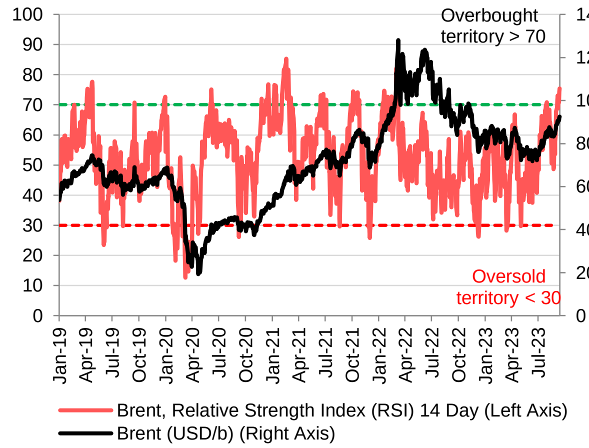

## NYMEX WTI SPOT

USD/B



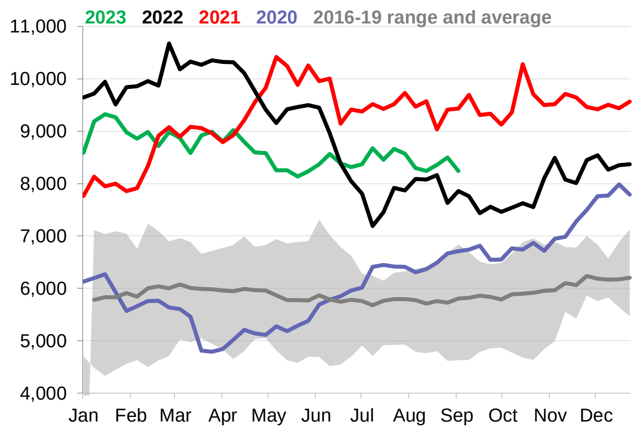

## 14 DAY RELATIVE STRENGTH INDEX (RSI) AND WTI

USD/B AND 0-100 INDEX (<30 = OVERSOLD; >70 = OVERBOUGHT)



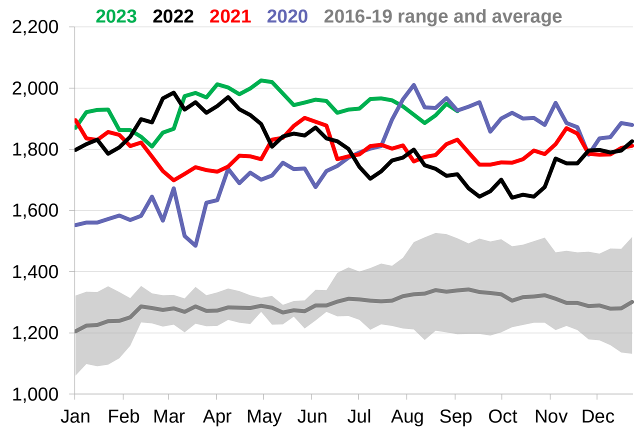

## COPPER SPOT

USD/LB



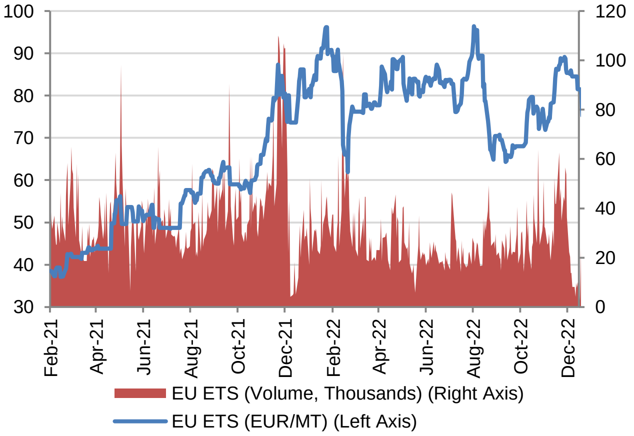

## GOLD SPOT

USD/T OZ




## EU CARBON PRICE AND VOLUME

EUR/T AND EUA'S (THOUSAND VOLUME)

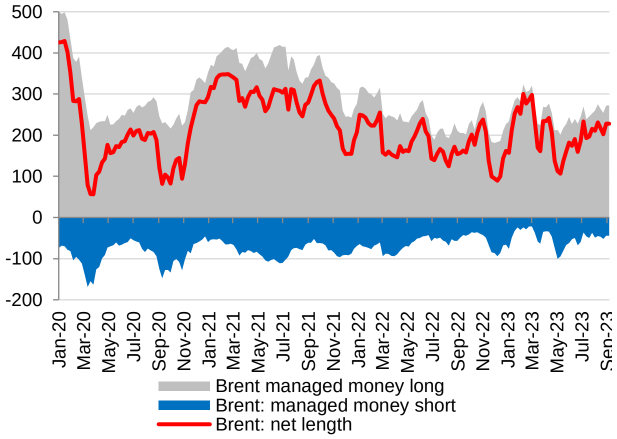



*Source: Bloomberg, EIA, IEA, OPEC, MUFG Research*

# Core indicators – market positioning

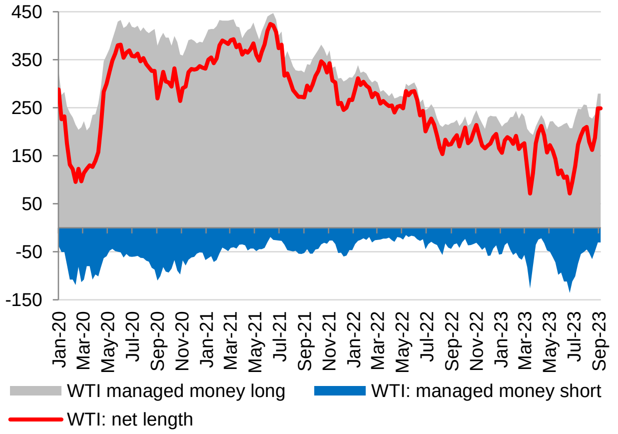
## BRENT CRUDE MANAGED MONEY

CONTRACTS (THOUSANDS)



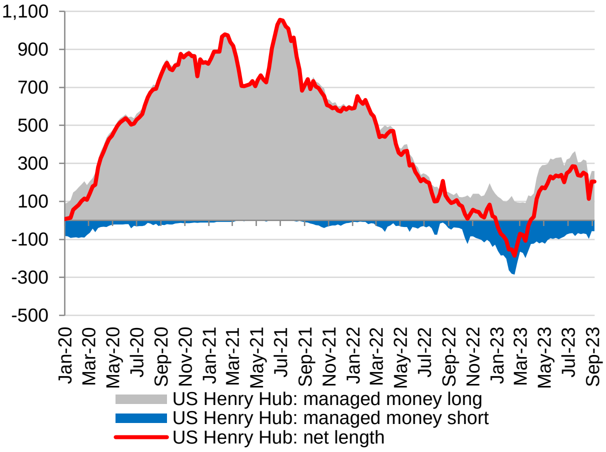

## WTI CRUDE MANAGED MONEY

CONTRACTS (THOUSANDS)



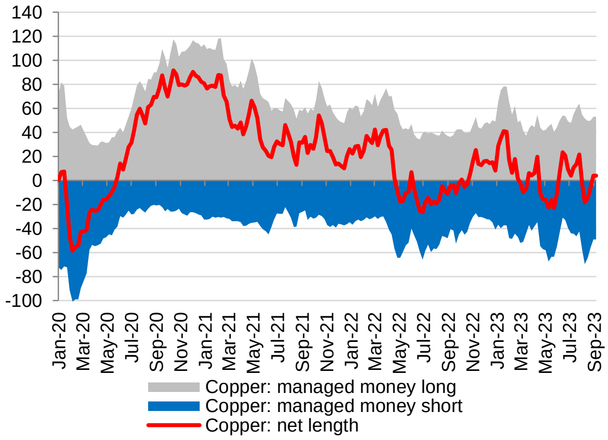

## US HENRY HUB NATURAL GAS MANAGED MONEY

CONTRACTS (THOUSANDS)



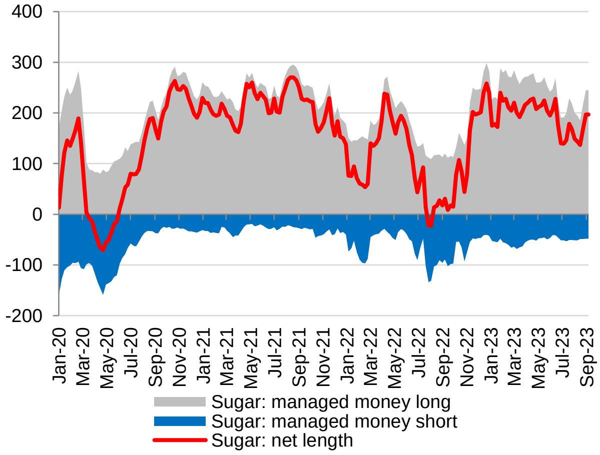

## COPPER MANAGED MONEY

CONTRACTS (THOUSANDS)



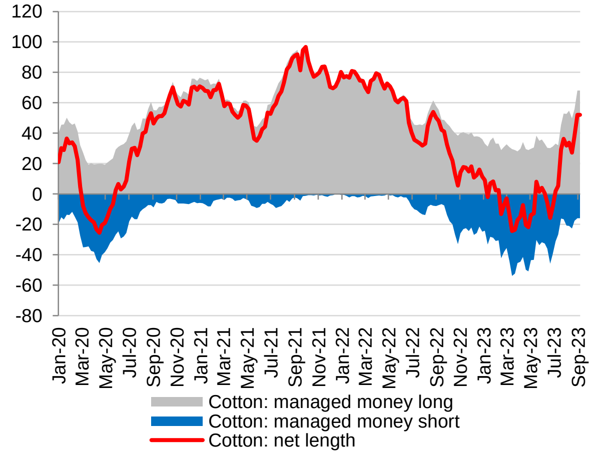

## SUGAR MANAGED MONEY

CONTRACTS (THOUSANDS)




## COTTON MANAGED MONEY

CONTRACTS (THOUSANDS)

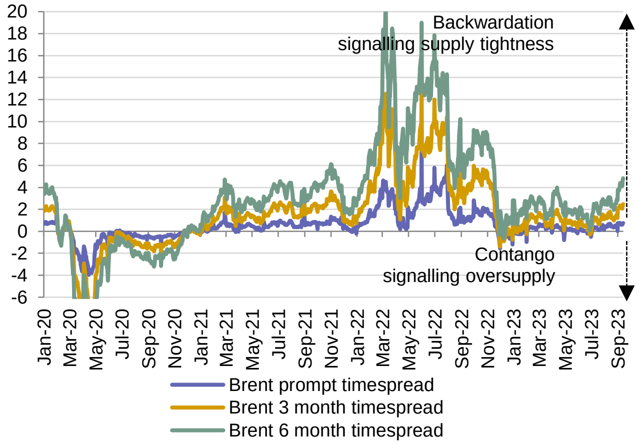



*Source: Bloomberg, EIA, IEA, OPEC, MUFG Research*

# Core indicators – timespreads and futures

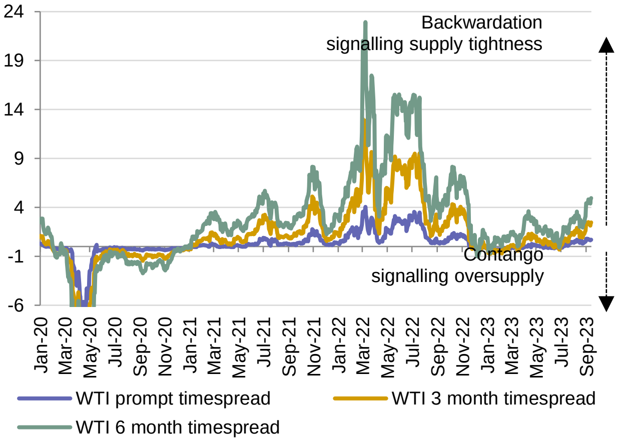
## BRENT TIMESPREADS – FRONT, 3 AND 6 MONTHS

USD/B



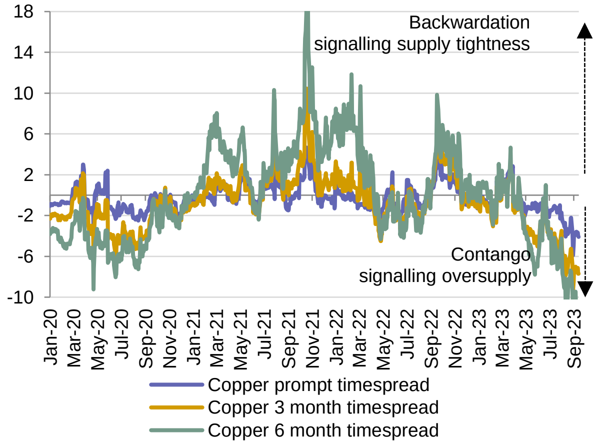

## WTI TIMESPREADS – FRONT, 3 AND 6 MONTHS

USD/B



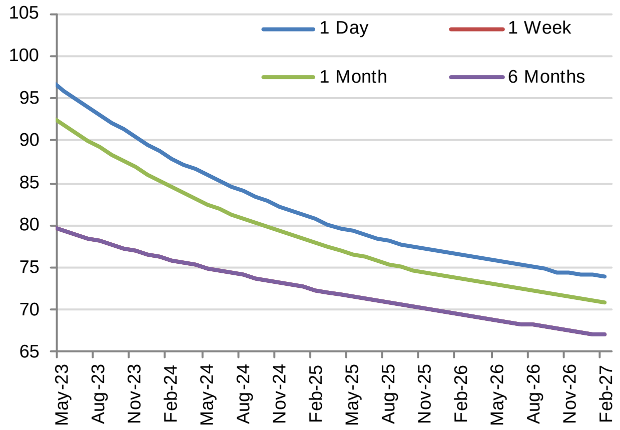

## COPPER TIMESPREADS – FRONT, 3 AND 6 MONTHS

USD/B



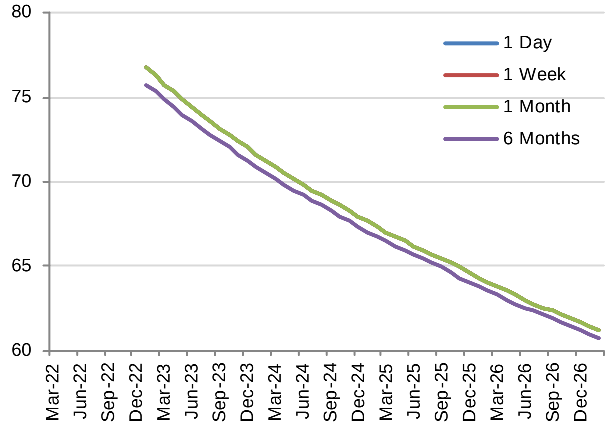

## BRENT FUTURES CURVE

USD/B



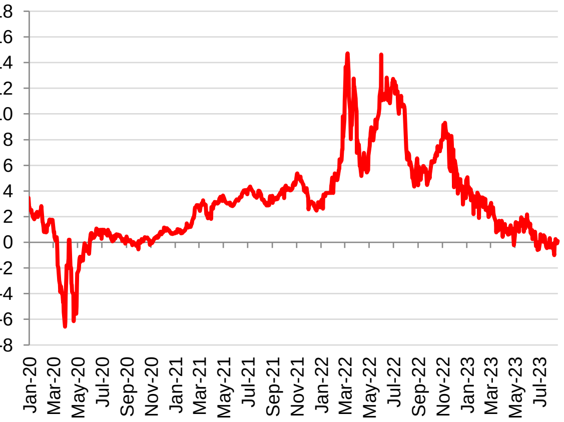

## WTI FUTURES CURVE

USD/B




## BRENT-DUBAI SPREAD

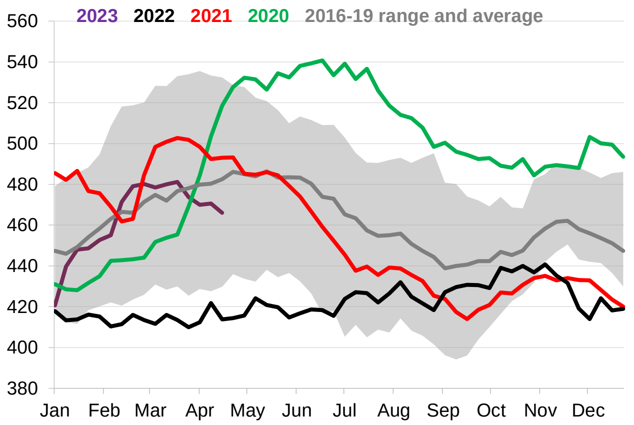
USD/B



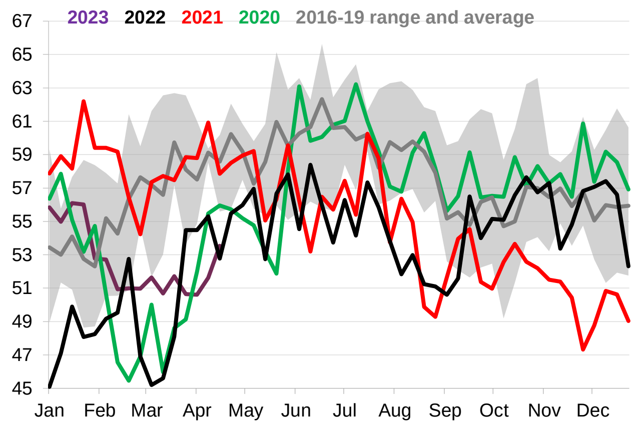
*Source: Bloomberg, EIA, IEA, OPEC, MUFG Research*

# Core indicators – inventories, storage and products

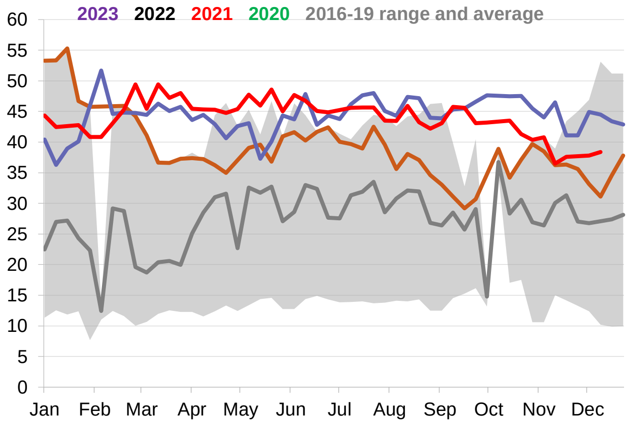
## US CRUDE INVENTORIES
MILLION BARRELS



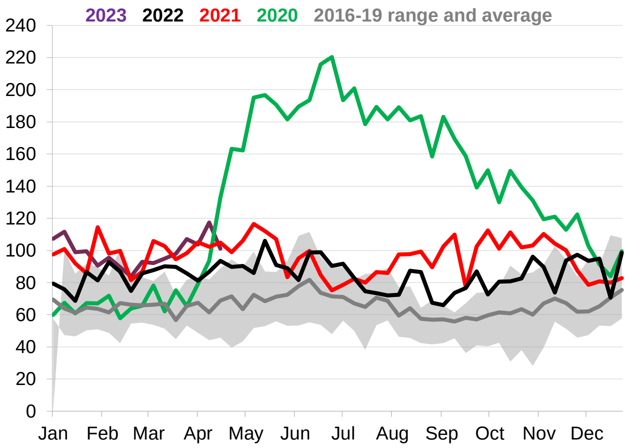

## ARA CRUDE INVENTORIES
MILLION BARRELS



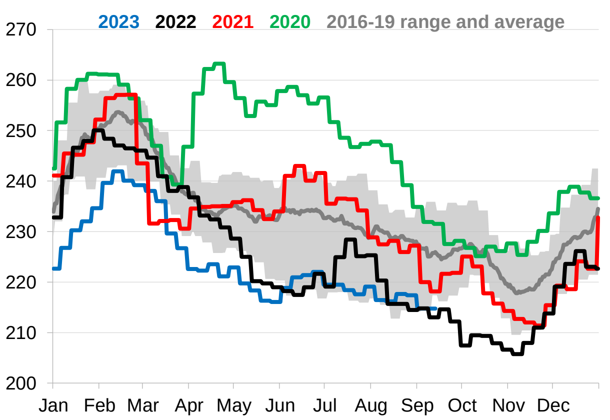

## CHINA SHANDONG CRUDE INVENTORIES
MILLION BARRELS



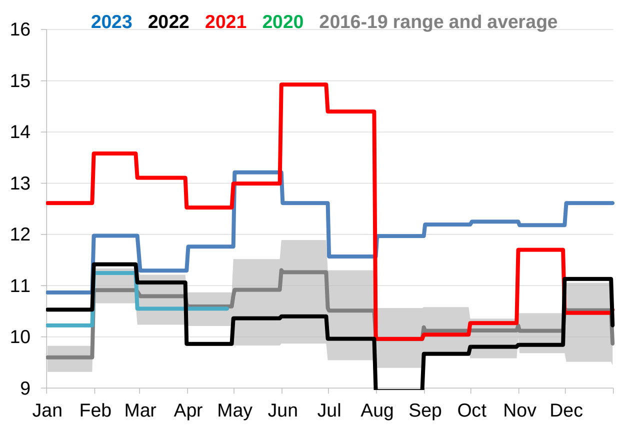

## GLOBAL CRUDE FLOATING STORAGE
MILLION BARRELS




## US GASOLINE INVENTORIES
MILLION BARRELS




## JAPAN GASOLINE INVENTORIES
MILLION BARRELS




*Source: Bloomberg, EIA, IEA, OPEC, MUFG Research*

# Global oil supply/demand balance (thousands b/d and y/y change)

| As of December 2022 | 2019 (tho. b/d) | 2020 (tho. b/d) | 2021 (tho. b/d) | 2022 (tho. b/d) | 2023 (tho. b/d) | 2020 (%) | 2021 (%) | 2022 (%) | 2023 (%) |
|---|---|---|---|---|---|---|---|---|---|
| Demand | | | | | | | | | |
| *North America* | *25,245* | *22,124* | *23,777* | *24,703* | *24,955* | *-3,122* | *1,654* | *926* | *252* |
| *LatAm* | *6,654* | *6,275* | *6,578* | *6,732* | *6,855* | *-379* | *304* | *154* | *123* |
| *Europe* | *15,093* | *13,147* | *13,772* | *14,591* | *14,707* | *-1,945* | *625* | *819* | *116* |
| *CIS* | *4,722* | *4,417* | *4,724* | *4,948* | *5,007* | *-305* | *306* | *224* | *59* |
| *Asia* | *27,931* | *27,382* | *28,708* | *29,627* | *30,751* | *-549* | *1,326* | *919* | *1,124* |
| *Middle East* | *8,241* | *7,745* | *7,922* | *8,176* | *8,223* | *-496* | *177* | *254* | *47* |
| *Africa* | *4,251* | *4,129* | *4,324* | *4,429* | *4,623* | *-122* | *195* | *105* | *194* |
| Total OECD Demand | 47,854 | 42,029 | 44,559 | 46,415 | 46,910 | -5,825 | 2,530 | 1,856 | 494 |
| Total Non-OECD Demand | 52,218 | 50,332 | 52,647 | 54,343 | 55,900 | -1,887 | 2,315 | 1,697 | 1,557 |
| Total Global Demand | 100,072 | 92,361 | 97,206 | 100,759 | 102,810 | -7,711 | 4,845 | 3,553 | 2,051 |
| Supply | | | | | | | | | |
| *North America* | *25,767* | *24,752* | *25,205* | *26,666* | *27,744* | *-1,014* | *453* | *1,461* | *1,078* |
| *US shale* | *9,923* | *9,194* | *9,009* | *9,748* | *10,550* | *-729* | *-187* | *741* | *801* |
| *Other US* | *8,306* | *8,276* | *8,619* | *9,153* | *9,344* | *-30* | *343* | *534* | *191* |
| *Total US* | *18,229* | *17,470* | *17,627* | *18,902* | *19,894* | *-759* | *157* | *1,275* | *992* |
| *LatAm* | *4,794* | *4,841* | *4,831* | *5,116* | *5,279* | *47* | *-10* | *285* | *163* |
| *Europe* | *3,477* | *3,685* | *3,527* | *3,632* | *3,757* | *208* | *-158* | *105* | *125* |
| *CIS* | *14,643* | *13,504* | *13,763* | *14,481* | *14,778* | *-1,139* | *259* | *718* | *296* |
| *Asia* | *7,694* | *7,510* | *7,437* | *7,391* | *7,234* | *-184* | *-74* | *-45* | *-157* |
| *Middle East* | *3,012* | *3,013* | *3,089* | *3,187* | *3,202* | *1* | *75* | *99* | *15* |
| *Africa* | *1,487* | *1,390* | *1,309* | *1,293* | *1,257* | *-97* | *-81* | *-16* | *-37* |
| Total Non-OPEC | 65,004 | 62,530 | 63,128 | 66,043 | 67,655 | -2,474 | 598 | 2,915 | 1,612 |
| Total OPEC Crude | 30,166 | 26,340 | 27,089 | 29,697 | 30,452 | -3,826 | 748 | 2,609 | 755 |
| Total OPEC NGL | 5,234 | 4,978 | 5,126 | 5,353 | 5,431 | -256 | 148 | 228 | 78 |
| Total OPEC Supply | 35,400 | 31,318 | 32,214 | 35,050 | 35,883 | -4,081 | 896 | 2,836 | 832 |
| Total OPEC+ Supply | 46,105 | 41,049 | 42,039 | 45,415 | 46,435 | -5,056 | 990 | 3,376 | 1,020 |
| *Ecuador* | *531* | *479* | *494* | *459* | *437* | *-52* | *14* | *-34* | *-22* |
| *Venezuela* | *875* | *508* | *555* | *803* | *830* | *-367* | *47* | *248* | *28* |
| *Algeria* | *1,023* | *898* | *908* | *939* | *935* | *-125* | *10* | *31* | *-5* |
| *Congo* | *333* | *288* | *265* | *253* | *232* | *-44* | *-23* | *-12* | *-21* |
| *Gabon* | *213* | *189* | *184* | *184* | *180* | *-24* | *-5* | *0* | *-3* |
| *Angola* | *1,389* | *1,262* | *1,116* | *1,014* | *959* | *-127* | *-146* | *-102* | *-55* |
| *Nigeria* | *1,731* | *1,577* | *1,391* | *1,502* | *1,552* | *-154* | *-185* | *111* | *50* |
| *Eq. Guinea* | *110* | *113* | *101* | *100* | *94* | *3* | *-12* | *-1* | *-6* |
| *Libya* | *1,086* | *366* | *1,151* | *1,154* | *1,266* | *-720* | *785* | *4* | *112* |
| *Iran* | *2,362* | *2,157* | *2,683* | *2,700* | *2,883* | *-205* | *527* | *17* | *183* |
| *Iraq* | *4,712* | *4,044* | *4,026* | *4,427* | *4,514* | *-668* | *-17* | *401* | *87* |
| *Kuwait* | *2,682* | *2,437* | *2,414* | *,669* | *2,713* | *-245* | *-23* | *255* | *44* |
| *Saudi Arabia* | *9,944* | *9,184* | *9,083* | *10,420* | *10,596* | *-760* | *-101* | *1,336* | *176* |
| *UAE* | *3,177* | *2,840* | *2,717* | *3,073* | *3,260* | *-336* | *-124* | *356* | *187* |
| Total Global Supply | 100,404 | 93,848 | 95,342 | 101,093 | 103,538 | -6,555 | 1,494 | 5,751 | 2,445 |
| Imbalance (Supply – Demand) | 332 | 1,488 | -1,863 | 335 | 729 | --- | --- | --- | --- |
| OECD Commercial Stocks | 65 | 377 | -1,084 | 47 | 389 | --- | --- | --- | --- |
| 5yr Avg OECD Days of Demand | 61.5 | 62.3 | 63.0 | 63.0 | 63.0 | --- | --- | --- | --- |

*Source: Bloomberg, BP, EIA, IEA, GS, JODI, NBS, OPEC, Various Government Sources, MUFG Research*

# Research

## London:

**MR DEREK HALPENNY**
*Head of Research, Global Markets EMEA*
*& International Securities*
T: +44 (0)20 7577 1887

**MR LEE HARDMAN**
*Currency Analyst*
T: l+44 (0)20 7577 1968

**MS MOMOKO MIYACHI**
*Research Assistant*
T: +44 (0)20 7577 1886

## Shanghai:

**MR MARCO SUN**
*Chief Financial Markets Analyst*
T: +86 21 2063 5485

## Hong Kong:

**MS LIN LI**
*Head of Global Markets Research Asia*
T: +852 2862 7005

## New York:

**MR GEORGE GONCALVES**
*Head of US Macro Strategy*
T: +1-212- 405-6687

## Dubai:

**MR EHSAN KHOMAN**
*Head of Commodities, ESG and Emerging Markets Research – EMEA*
T: +971 (0)4 387 5033

## Tokyo

**MR TEPPEI INO**
*Tokyo Head of Global Markets Research*
T: +81 (0) 3 6214 4185

**MS SUMINO KAMEI**
*Senior Analyst*
T: +81 (0) 3 6214 4179

**MR TOMOKI HIRAMATASU**
*Analyst*
T: +81 (0) 3 6214 4152

**MR TAKAHIRO SEKIDO**
*Chief Japan Strategist*
T: +81 (0) 3 6214 4150

**MR KENTO SAITO**
*Research Assistant*
T: +81 (0) 3 6214 4149

**MR TOSHIYUKI SUZUKI**
*Global Market Economist*
T: +81 (0) 3 6214 4148

## Singapore:

**MR JEFF NG**
*Senior Currency Analyst*
T: +65 6918 5536

**MS SOPHIA NG**
*Currency Analyst*
T: +65 6918 5537

## Sao Paulo:

**MR CARLOS PEDROSO**
*Chief Economist*
T: +55-11-3268-0245

**MR MAURICIO NAKAHODO**
*Senior Economist*
T: +55-11-3268-0420

# Disclaimer

This document has been prepared by MUFG Bank, Ltd. (the "Bank") for general distribution. It is only available for distribution under such circumstances as may be permitted by applicable law and is not intended for use by any person in any jurisdiction which restricts the distribution of this document. The Bank and/or any person connected with it may make use of or may act upon the information contained in this document prior to the publication of this document to its customers.
Neither the information nor the opinions expressed in this document constitute or are to be construed as, an offer, solicitation or recommendation to buy, sell or hold deposits, securities, futures, options or any other derivative products or any other financial products. This document has been prepared solely for informational purposes and does not attempt to address the specific needs, financial situation or investment objectives of any specific recipient. This document is based on information from sources deemed to be reliable but is not guaranteed to be accurate and should not be regarded as a substitute for the exercise of the recipient's own judgment. Historical performance does not guarantee future performance. The Bank may have or has had a relationship with or may provide or has provided financial services to any company mentioned in this document. Our group affiliates, from time to time, may have interests and/or underwriting commitments in the relevant securities mentioned in this document or related instruments and/or may have positions or holdings in such securities or related instruments.
All views in this document (including any statements and forecasts) are subject to change without notice and none of the Bank, its head office, branches, subsidiaries and affiliates is under any obligation to update this document.
The information contained in this document has been obtained from sources the Bank believed to be reliable but the Bank does not make any representation or warranty nor accepts any responsibility or liability as to its accuracy, timeliness, suitability, completeness or correctness. The Bank, its head office, branches, subsidiaries and affiliates and the information providers accept no liability whatsoever for any loss or damage of any kind arising out of the use of or reliance upon all or any part of this document.
The Bank retains copyright to this document and no part of this document may be reproduced or re-distributed without the written permission of the Bank. The Bank expressly prohibits the distribution or re-distribution of this document to private or retail clients, via the Internet or otherwise, and the Bank, its head office, branches, subsidiaries and affiliates accept no liability whatsoever to any third parties resulting from such distribution or re-distribution.
MUFG Bank, Ltd. ("MUFG Bank") is a limited liability stock company incorporated in Japan and registered in the Tokyo Legal Affairs Bureau (company no. 0100-01-008846). MUFG Bank's head office is at 7-1 Marunouchi 2-Chome, Chiyoda-Ku, Tokyo 100-8388, Japan. MUFG Bank's London branch is registered as a UK establishment in the UK register of companies (registered no. BR002013). MUFG Bank is authorised and regulated by the Japanese Financial Services Agency. MUFG Bank's London branch is authorised by the Prudential Regulation Authority (FCA/PRA no. 139189) and subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. Details about the extent of MUFG Bank London branch's regulation by the Prudential Regulation Authority are available from us on request.
MUFG Bank, Ltd. (""MUFG Bank") is a limited liability stock company incorporated in Japan and registered in the Tokyo Legal Affairs Bureau (company no. 0100-01-008846). MUFG Bank's head office is at 7-1 Marunouchi 2-Chome, Chiyoda-Ku, Tokyo 100-8388, Japan. MUFG Bank's London branch is registered as a UK establishment in the UK register of companies (registered no. BR002013). MUFG Bank is authorised and regulated by the Japanese Financial Services Agency. MUFG Bank's London branch is authorised by the Prudential Regulation Authority (FCA/PRA no. 139189) and subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. Details about the extent of MUFG Bank London branch's regulation by the Prudential Regulation Authority are available from us on request.
This Presentation has been prepared by MUFG Bank. This Presentation is not intended for Retail Clients within the meaning of the United Kingdom PRA/FCA rules and should not be distributed to Retail Clients. This Presentation has been prepared for information purposes only and for the avoidance of doubt, nothing express or implied in this Presentation constitutes any commitment by MUFG Bank or any of its subsidiaries or affiliates to arrange and/or provide any party with any services and/or financing. This Presentation does not constitute legal, tax, accounting or investment advice.
MUFG Bank retains copyright to this Presentation and no part of this Presentation may be reproduced or redistributed without the prior written permission of MUFG Bank. MUFG Bank and its subsidiaries and affiliates accept no liability whatsoever to any third parties resulting from any unauthorised distribution. MUFG Bank and its subsidiaries, affiliates, directors and employees accept no liability whatsoever for any reliance on the information contained in the Presentation and make no representation or warranty as to its accuracy and completeness.
This Presentation is based on information from sources deemed by MUFG Bank to be reliable but is not guaranteed to be accurate and should not be regarded as a substitute for the exercise of the recipient's own judgement.
The views contained in this Presentation (including any statements and forecasts) are solely those of MUFG Bank and are subject to change without notice. MUFG Bank is under no obligation to correct any inaccuracies in the Presentation or update the information contained therein.
The provision of the service described in this Presentation is or will be subject to an agreement constituting terms of business ("the Agreement"). In the event of a conflict between information in this Presentation and the Agreement, the latter shall prevail.
The MUFG Bank Presentation and all claims arising in connection with it are governed by, and to be construed in accordance with, English law.
The Bank's DIFC branch - Dubai is part of the Mitsubishi UFJ Financial Group and is located at Level 3, East Wing, The Gate, Dubai International Financial Centre, Dubai, UAE. The Bank's Dubai branch is regulated by the Dubai Financial Services Authority (DFSA) (License number: F000470) and the Japanese Financial Services Agency.
The Bank's Doha office is part of the Mitsubishi UFJ Financial Group and is located at Suite A3, Mezzanine floor, Tornado Tower, West Bay, Doha, Qatar. The Bank's Doha branch is regulated by the Qatar Financial Centre Regulatory Authority (QFCRA) (Licence number: 00103) and the Japanese Financial Services Agency.
The Bank's Abu Dhabi branch is part of the Mitsubishi UFJ Financial Group and is located at 1st Floor, IPIC Square, Muroor Street, PO Box 2174, Abu Dhabi, UAE. The Bank's Abu Dhabi branch is regulated by the Central Bank of the U.A.E (CBUAE) (License number:CN-1002032) and the Japanese Financial Services Agency.
The Bank's Bahrain branch is part of the Mitsubishi UFJ Financial Group and is located at 12th Floor, West Tower, Bahrain Financial Harbor, Bahrain. The Bank's Bahrain branch is regulated Bahrain by the Central Bank of Bahrain (CBB) (License number WB/020) and the Japanese Financial Services Agency.
This presentation has been prepared by the Bank and is not intended for Retail Clients within the meaning of the PRA/FCA, the DFSA, QFCRA, CBB and CBUAE rules and should not be distributed to Retail Clients. This presentation has been prepared for information purposes only and, for the avoidance of doubt, nothing express or implied in this presentation constitutes any commitment by the Bank, its subsidiaries or affiliates to arrange and/or provide any party with any services and/or financing. This presentation does not constitute legal, tax, accounting or investment advice. The Bank retains copyright to this presentation and no part of this presentation may be reproduced or redistributed without the prior written consent of the Bank. The Bank and its subsidiaries and affiliates accept no liability whatsoever to any third party resulting from any unauthorised distribution. The Bank, its subsidiaries, affiliates and each of their respective directors and employees accept no liability whatsoever for any reliance on the information contained in the presentation and make no representation or warranty as to its accuracy and completeness. This presentation is based on information from sources considered by the Bank to be reliable but is not guaranteed to be accurate and should not be regarded as a substitute for the exercise of the recipient's own judgement. The views, opinions and other information contained in this presentation (including, without limitation, any statements or forecasts) are solely those of the Bank and are subject to change without notice.
Notwithstanding the foregoing, nothing contained herein shall be deemed to limit or exclude liability on the part of the Bank to the extent it is not permitted to exclude in accordance with the laws administered by the Dubai Financial Services Authority (DFSA).
The Bank is under no obligation to correct any inaccuracies or update the information contained in this presentation. The provision of the service described in this presentation is, or will be, subject to an agreement constituting terms of business. In the event of a conflict between information contained in this presentation and such terms of business, the latter shall prevail. This disclaimer is governed by English law.
This report shall not be construed as solicitation to take any action such as purchasing/selling/investing in financial market products. In taking any action, the reader is requested to act on the basis of his or her own judgment. This report is based on information believed to be reliable, but the Bank does not guarantee or accept any liability whatsoever for, its accuracy. The Bank, its affiliates and subsidiaries and each of their respective officers, directors and employees accept no liability whatsoever for any loss or damage of any kind arising out of the use of all or any part of this report. The contents of the report may be revised without advance notice. The Bank retains copyright to this report and no part of this report may be reproduced or re-distributed without the Bank's written consent. The Bank expressly prohibits the re-distribution of this report to Retail Customers (within the meaning of the PRA/FCA, the DFSA, QFCRA, CBB, CBUAE rules), via the internet or otherwise and the Bank, its subsidiaries and affiliates accept no liability whatsoever to any third parties resulting from such re-distribution.

CERTIFICATION
The author(s) mentioned on the cover of this report hereby certify(ies) (or, where multiple authors are responsible, individually certify with respect to each security that the author covers in this report) that the views expressed in this report accurately reflect their personal views about the subject company(ies) and its (their) securities, and also certify(ies) that they have not been, are not, and will not be receiving direct or indirect compensation in exchange for expressing any specific recommendation(s) or view(s) in this report.
DISCLAIMERS
This report has been prepared by the Global Markets Research, US Rates and Credit Strategy desks within MUFG Bank , Ltd. ("MUBK") and MUFG Securities EMEA plc ("MUS(EMEA)") and may be distributed to you either by MUBK, MUS(EMEA) or by another subsidiary of the Mitsubishi UFJ Financial Group ("MUFG").
Legal entities and branches
The securities related businesses within MUFG (together referred to in this presentation as "MUFG Securities") are: (1) MUFG SECURITIES EMEA PLC ("MUS(EMEA)") which is authorised in the United Kingdom by the Prudential Regulation Authority ("PRA") and regulated by the Financial Conduct Authority ("FCA") and the PRA (FS Registration Number 124512). MUS(EMEA) has a branch office that is registered at Level 3, East Wing, The Gate, Dubai International Financial Centre, PO Box 506894, Dubai, UAE ("Dubai Branch"). The Dubai Branch is authorised to operate in the Dubai International Financial Centre ("DIFC") as a Non-DIFC Entity (Commercial License Number CL1656) and is regulated by the Dubai Financial Services Authority (Reference Number F002623); (2) (MUFG Securities (Europe) N.V. ("MUS (EU)") which is authorized and regulated in the Netherlands by the Dutch Authority for the Financial Markets (AFM) and also regulated by De Nederlandsche Bank (DNB). MUS (EU) Paris Branch is regulated in France by the Autorité de contrôle prudentiel et de résolution (ACPR) and the Autorité des marchés financiers (AMF); (3) MUFG SECURITIES AMERICAS INC. ("MUS(USA)") which is registered in the United States with the Securities and Exchange Commission ("SEC") and regulated by the Financial Industry Regulatory Authority ("FINRA") (SEC# 8-43026; CRD# 19685); (4) MUFG SECURITIES (CANADA), LTD. ("MUS(CAN)") which is registered in Canada with the Ontario Securities Commission ("OSC") and regulated by the Investment Industry Regulatory Organization of Canada ("IIROC"); (5) MUFG SECURITIES ASIA LIMITED ("MUS(ASIA)") which is incorporated in Hong Kong, licensed under the Hong Kong Securities and Futures Ordinance and regulated by the Hong Kong Securities and Futures Commission (Central Entity Number AAA889). MUS(ASIA) is registered as a foreign company under the Corporations Act 2001 of Australia ARBN No. 169 329 453; and (6) MUFG Securities Asia (Singapore) Limited ("MUS(SPR)") which is licensed as an approved merchant bank by the Monetary Authority of Singapore. In respect of the financial services provided to wholesale clients in Australia, MUS(ASIA), MUS(EMEA), MUS(USA) and MUS(SPR) are each exempt from the requirement to hold an Australian financial services licence under the Corporations Act 2001 of Australia under the Australian Securities and Investments Commission Class Order Exemption CO 03/1099, CO 03/1103, CO 03/1100, and CO 03/1102, respectively. Each of MUS(ASIA), MUS(EMEA), MUS(USA), MUS(CAN), and MUS(SPR) are regulated under the laws of Hong Kong, the United Kingdom, the United States, Canada and Singapore respectively, which differ from Australian laws.
MUFG Bank Ltd ("MUBK"), is a limited liability stock company incorporated in Japan and registered in the Tokyo Legal Affairs Bureau (company no. 0100-01-008846). MUBK's head office is at 7-1 Marunouchi 2-Chome, Chiyoda-Ku, Tokyo 100-8388, Japan. MUBK's London branch is at Ropemaker Place, 25 Ropemaker Street, London EC2Y 9AN, and is registered as a UK establishment in the UK register of companies (registered no. BR002013). MUBK is authorised and regulated by the Japanese Financial Services Agency. MUBK's London branch is authorised by the UK Prudential Regulation Authority ("PRA") and regulated by the UK Financial Conduct Authority ("FCA") with limited regulation by the PRA.
General disclosures
This report is for information purposes only and should not be construed as investment research as defined by MIFID 2 or a solicitation of any offer to buy or sell any security, commodity, futures contract or related derivative (hereafter "instrument") or to participate in any trading strategy. This report does not constitute a personal recommendation and does not take into account the individual financial circumstances, needs or objectives of the recipients. Recipients should therefore seek their own financial, legal, tax or other advice before deciding to invest in any of the instruments mentioned in this report.
Certain information contained in this report has been obtained or derived from third party sources and such information is believed to be correct and reliable but has not been independently verified. MUFG Securities does not make any guarantee, representation, warranty or undertaking, express or implied, as to the fairness, accuracy, reliability, completeness, adequacy or appropriateness of any information or comments contained in this report. Furthermore the information may not be current due to, among other things, changes in the financial markets or economic environment. MUFG Securities has no obligation to update any such information contained in this report.
This report is not intended to forecast or predict future events. Past performance is not a guarantee or indication of future results. Any prices provided herein (other than those identified as being historical) are indicative only and do not represent firm quotes as to either price or size.
This report is proprietary to MUFG Securities and may not be quoted, circulated or otherwise referred to without our prior written consent. Notwithstanding this, MUFG Securities shall not be liable in any manner whatsoever for any consequences or loss (including but not limited to any direct, indirect or consequential loss, loss of profits and damages) arising from any reliance on or usage of this report and accepts no legal responsibility to any investor who directly or indirectly receives this material.
Country and region specific disclosures
This report is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or is located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to any law, regulation or rule. In this regard, please note the following in relation to the jurisdictions in which MUFG Securities has a local presence:
• United Kingdom / European Economic Area (EEA): This report is intended for distribution to a "professional client" or "eligible counterparty" as those terms are defined in the rules of the FCA and PRA. In other EEA countries, this report is intended only for persons regarded as professional investors (or equivalent) in their home jurisdiction.
• United States of America: This report, when distributed by MUS(USA), is intended for Institutional Investors ("Institutional Accounts" as defined by FINRA Rule 4512(c)). When distributed by a non-US affiliate of MUS(USA), this report is intended for distribution solely to "major U.S. institutional investors" or "U.S. institutional investors" pursuant to Rule 15a-6 under the U.S. Securities Exchange Act of 1934, as amended. Securities referenced in this report may have been underwritten by MUS(USA) and/or its affiliates. Nothing in this report should be considered an offer or solicitation of an offer to buy or sell securities or any other financial product or a commitment of any kind with respect to any transaction.
IRS Circular 230 Disclosure: MUFG Securities does not provide tax advice. Accordingly, any discussion of U.S. tax matters included herein (including any attachments) is not intended or written to be used, and cannot be used, in connection with the promotion, marketing or recommendation by anyone not affiliated with MUS(USA) of any of the matters addressed herein or for the purpose of avoiding U.S. tax-related penalties.
• Hong Kong: This report is only intended for distribution to a "professional investor" as that term is defined in the Securities and Futures Ordinance and should not be passed onto any other person.
• Singapore: This report is only intended for distribution to an "institutional investor", "accredited investor" or "expert investor" as those terms are defined under regulation 2 of the Financial Advisers Regulation. It is solely for the use of such investors and shall not be distributed, forwarded, passed on or disseminated to any other person. Investors should note that, as a result of exemptions that apply when this report is distributed to "accredited investors" and "expert investors", MUSS is exempt from complying with certain requirements under the Financial Advisers Act, including section 25 of the Financial Advisers Act (which requires a financial adviser to disclose all material information on certain investment products), section 27 (which requires a financial adviser to have a reasonable basis for making recommendations on investments) and section 36 (which requires a financial adviser to disclose any interests that it holds in securities that it recommends).
• Canada: When distributed in Canada, this report is distributed by MUS(EMEA) or MUSA. MUS(EMEA) operates under an International Dealer Exemption from registration with the securities regulators in Alberta, British Columbia, Manitoba, Ontario and Québec. MUSA operates under an International Dealer Exemption from registration with the securities regulators in all Canadian Provinces and Territories. This report is only intended for a "permitted client" as that term is defined under the National Instrument 31-103 in Canada and is not intended for re-distribution to any other person. The information contained herein is not, and under no circumstances is to be construed as, a prospectus, an advertisement, a public offering, an offer to sell securities described herein, or solicitation of an offer to buy securities described herein, in Canada or any province or territory thereof. Under no circumstance is the information contained herein to be construed as investment advice in any province or territory of Canada and is not tailored to the needs of the recipient.
• Japan: This Note, when distributed by MUFG Securities affiliates located outside of Japan, is intended for distribution in accordance with Article 58-2 of the Financial Instruments Exchange Act 1948 ("FIEA") i) to a "Financial Instruments Business Operator" engaged in "Securities-Related Business" as defined in the FIEA or ii) to the government, the Bank of Japan, a qualified financial institution defined in Article 209 of the Cabinet Office Ordinance Concerning Financial Instruments Business, Etc., or an Investment Manager.
When distributed by Mitsubishi UFJ Morgan Stanley Securities Co., Ltd., this Note is intended for distribution to a "Professional Investor (tokutei-toushika)" as defined in the FIEA.
• United Arab Emirates: This report is only intended for distribution to a "Professional Client" or "Market Counterparty" as those terms are defined under the rules of the Dubai Financial Services Authority and only a person meeting the criteria for these terms should act upon this report.
• Australia: This Note is only intended for distribution to persons in Australia who are sophisticated or professional investors for the purposes of section 708 of the Corporations Act of Australia, and are wholesale clients for the purposes of section 761G of the Corporations Act of Australia. This Note is not intended to be distributed or passed on, directly or indirectly, to any other class of persons in Australia.
Other jurisdictions:
MUFG Securities also relies on local registrations or regulatory exemptions in order to undertake certain securities business in other countries. In Thailand, MUS(EMEA) has a derivatives dealer registration with the Securities and Exchange Commission, Thailand. In Canada, MUS(EMEA) and MUS(USA) each operate under an international dealer exemption registered with the securities regulators. MUS(EMEA) operates under the exemption in Alberta, Quebec, Ontario, British Columbia and Manitoba. MUS(USA) operates under the exemption in all Canadian Provinces and Territories..