

Commodity Monthly Monitor

The Eye of the Tiger

25 October 2022 — 25 November 2022



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Summary

Commodities have behaved like a fallen angel most of the past decade, struggling to perform like they did in the supercycle years of the noughties (2000-2009). However, in the Year of the Tiger - like the fictitious Rocky Balboa rediscovering his mojo in the third Rocky instalment to the tune of 'The Eye of the Tiger' - commodities have posted two back-to-back years of growth.

As we write the final Commodity Monthly Monitor of 2022, we can confirm that commodities have outpaced all major asset classes in the first 11 months of the year. The Bloomberg Commodity Index Total Return was up 17% year-to-date (31/12/21 TO 28/11/2022), while MSCI ACWI was down 18%, Bloomberg global aggregate credit was down 17%, Bloomberg Galaxy Bitcoin Index down 63% and FTSE EPRA Nareit Global REITS were down 23% (over same time periods).

The rebound in energy prices that was already underway in 2021 continued into 2022. While front month prices for WTI and Brent are almost flat on 12 month-trailing basis, investors into rolling future strategies saw substantial gains owing to strong backwardation in oil futures curves. Natural gas prices in the US have nearly doubled since the beginning of the year, despite inventory levels being around seasonal normal levels.

Agriculture has also posted positive gains this year, although gains peaked in May 2022 and have fallen 14% since (leaving YTD gains around 13%). The fortunes of agriculture and energy are intertwined as the petrochemical input for fertilizers that determine crop yields is tied to oil. Furthermore, the war in Ukraine has acted as a shock to energy and food supplies as Russia is a key hydrocarbon energy producer and Russia and Ukraine are considered the bread baskets of Europe (with significant production of wheat, corn, and edible oils).

The laggard of the pack was base metals, which was down 7% year-to-date. Although, with a 7% rally in the past month, its direction is changing fast, and we can't rule out industrial metals being flat for the year as the next month passes.

Precious metals have disappointed, with many expecting rampant inflation, geopolitical uncertainty, and financial market malaise to have supported gold. On the contrary, gold fell under the pressure of significant headwinds from a strong US dollar and a capitulation in the bond market. However, in the past month, precious metals have been finding their feet, with a 7.4% gain. The latest Federal Reserve (Fed) minutes point to the Fed pivot (point at which the Federal Reserve will increase rates at a lower pace) coming soon. That has helped the dollar depreciate about 4% in the past month and yields on 10-year US Treasuries dropped 55 basis points.

Recent inflation prints from Germany and Spain coming in below expectations indicate the ECB will also have to pivot soon (and so the Dollar depreciation isn't guaranteed to continue).

Protesters are rising throughout China as mass discontent with zero-COVID policies are coming to the boil. The fragile nature of a one-party political system indicates that President Xi will have to capitulate at some point soon and change policy course. Zero-COVID policies have encumbered the Chinese economy and a softening would meaningfully help growth in the nation that is the largest consumer of commodities. The question we have is: are there enough commodities to go around when China opens up or will we see more inventory drawdowns and a steepening of backwardation across most commodity futures curves when the moment arrives?

Technically the Year of the Tiger doesn't end until January 22nd, 2023. We will publish another Commodity Monthly Monitor before then. But we wish our readers observing the Gregorian calendar a merry festive period and a Happy New Year.

Performance

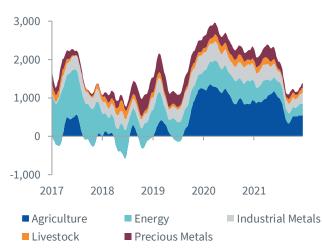
Performance*	- 1 Mth	- 6 Mth	- 12 Mth
All Commodities	2.2%	-11.8%	12.8%
Energy	0.4%	-17.2%	37.4%
Industrial Metals	7.4%	-13.6%	-6.5%
Precious Metals	7.4%	-4.2%	-3.6%
Agriculture	-0.1%	-11.1%	10.0%
MSCI World	7.2%	0.1%	-15.2%
US Aggregate Bond	3.9%	-4.6%	-12.2%

^{*}Bloomberg TR Indexes for basket returns, data to Friday 25 November 2022. Source: WisdomTree, Bloomberg.

Historical performance is not an indication of future performance, and any investments may go down in value.

CFTC Net Speculative Positioning

(in '000 contracts)



Source: WisdomTree, Commodity Futures Trading Commission (CFTC), Bloomberg. **Historical performance is not an indication of future performance, and any investments may go down in value.**

- + Precious metals were lifted by a softer than expected US inflation print last month. Gold saw some of its headwinds subside last month as both US Treasury yields and dollar pulled back while silver and platinum are finding additional support from their industrial credentials.
- Base metal inventories are so low, one wonders how the market will cope if China abandons some of its tight COVID-19 rules and moves back into a stronger economic growth phase.
- + The performance of the energy sector was flat as recession fears continue to dominate sentiment. Natural gas bucked the trend posting a positive performance over the prior month. Rising COVID-19 cases in China alongside its strict zero-COVID policy has dampened the outlook for oil demand from China. Key catalysts lie ahead for the oil market Organisation for Petroleum Exporting Countries and its partners (OPEC+) meeting on 04 December followed by the European Union (EU) embargo on Russian oil alongside G-7 plans to launch a price cap on Russian crude sales.
- Agricultural commodities posted another month of polarised performance. Grain prices pulled back after the Russia-Ukraine deal was extended for another four months averting a short-term supply crisis. In contrast, lower production from key producers has pushed up sugar prices.

Commodity Monthly Matrix¹

Commodity	Current Price ²	Returns (-1 Mth)	Price vs 200 days MA	Inventories ³ (- 3 Mths)	Positioning ⁴ (- 1 Mth)	Roll Yield ⁵	25 Nov Score	28 Oct Score
WTI Oil	76.3	-10.6%	-22.1%	2.4%	4.1%	-0.2%	0	(1)
Brent Oil	83.6	-10.6%	-18.9%	1.4%	-112%	-0.1%	(4)	(2)
Natural Gas	7.02	25.1%	0.2%	38.2%	0%	-4.2%	(2)	(4)
Gasoline	2.33	-20.2%	-25.9%	-2.2%	8%	2.4%	2	0
Heating Oil	3.24	-18.4%	-13.5%	16.7%	25%	2.2%	0	(1)
Carbon	78.7	2.4%	-0.6%	-	-	-0.2%	(1)	(1)
Wheat	7.76	-7.1%	-17.7%	-0.3%	-57%	-2.7%	(1)	(2)
Corn	6.68	-2.7%	-6.2%	-1.4%	-28%	-0.5%	(1)	0
Soybeans	14.4	3.9%	-8.9%	3.3%	30%	-0.4%	(1)	(4)
Sugar	0.19	6.7%	3.0%	-	67%	5.3%	1	(2)
Cotton	0.81	3.7%	-29.2%	3.0%	27%	1.4%	2	(2)
Coffee	1.64	-12.0%	-24.3%	-	-387%	-0.9%	(1)	(1)
Soybean Oil	0.75	3.1%	1.8%	1.2%	18%	3.9%	1	0
Cocoa	2,437	6.1%	0.3%	-	160%	-1.9%	0	(1)
Aluminium	2,339	5.7%	-12.7%	28.9%	12%	-0.4%	(1)	0
Copper (COMEX)	3.63	5.1%	-8.2%	-29.5%	163%	0.0%	0	0
Copper (LME)	7,992	4.9%	-8.2%	-25.7%	2%	-0.1%	1	(2)
Zinc	2,923	-0.5%	-16.6%	-64.3%	79%	-0.1%	1	0
Nickel	25,299	13.9%	-4.7%	-6.1%	62%	-0.2%	1	0
Lead	2,111	12.3%	-0.4%	-37.0%	37%	-0.2%	0	(1)
Tin	22,338	20.7%	-26.1%	2.2%	16%	-0.1%	1	0
Gold	1,753	6.1%	-2.5%	-	134%	0.0%	1	(3)
Silver	21.4	10.8%	0.4%	-	4453%	0.0%	(1)	1
Platinum	1,006	7.0%	6.3%	-	98%	0.5%	4	4
Palladium	1,819	-4.7%	-14.2%	-	39%	-0.1%	(1)	(1)
Live Cattle	1.53	0.9%	8.7%	-	-22%	-1.3%	(1)	0
Lean Hogs	0.84	-5.3%	-17.3%	-	-2%	-5.3%	0	0
Feeder Cattle	1.78	1.0%	4.7%	-	-26%	-1.8%	0	0

The score matrix is designed to highlight significant changes in key variables but should not be viewed as predictor of performance. Source: WisdomTree. Information not available.

Green = returns positive, inventories falling, positioning rising, roll yield positive.

Red = the opposite. Black = neutral.

Historical performance is not an indication of future performance, and any investments may go down in value.

¹ Detailed explanation of the matrix calculations can be found at the end of this report.

² All prices are futures prices to Friday 25 November 22. Broad sector returns based on Bloomberg Commodity Index family.

³ % change in inventory over the past 3 months except for sugar and coffee which are based on past 6 months as data is updated bi-annually by USDA.

⁴ CFTC futures and LME COTR net positioning as at 22 Nov 2022 and 25 Nov 2022 respectively, % change from previous month.

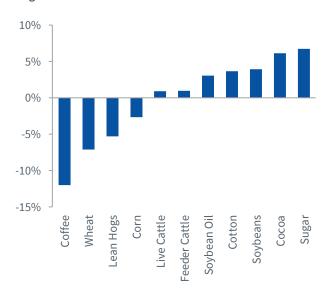
⁵ Calculated as % difference between front month and second month futures prices on report date. Historical performance is not an indication of future performance and any investments may go down in value.

Sector Overview

Agriculture

- + Agricultural commodities were a mixed bag last month. Wheat was down 7.1% while sugar was up 6.7%. Overall, the basket was down 0.1%.
- + Last month, we highlighted the risk of volatility in wheat prices due to the uncertainty around the Russia-Ukraine grain corridor. Initially on 29 October 2022, Russia announced its intention to pull out of the grain deal that UN and Turkey brokered with Russia and Ukraine. Shortly after Russia agreed to re-join the Ukraine export deal ending the stand-off that threatened to re-ignite a global food crisis. During November, the deal was extended for another four months averting a near-term crisis in supply. Wheat prices, as a result, came down last month.
- + Sugar was up 6.7% last month. Last month, we noted that the outlook for sugar appeared more favourable after reports suggested India (the world's second largest sugar exporter) is expected to cut its sugar export quota by almost 20% this year due to higher biofuel demand. The government is expected to allow domestic mills to export 9mt of sugar in the 2022/23 season, considerably lower than the 11.2mt quota for 2021/22. The potential for lower Indian exports comes at a time when rains have delayed the pace of the Centre South Brazilian harvest. Moreover, Europe's largest sugar producer Suedzucker is set to increase sugar prices given the high input costs for items like sugar beet. Rising energy prices have also contributed to this decision given sugar production is a very energy-intensive industry.
- + Last month we also noted how favourable weather conditions in Brazil, the world's largest Arabica producer and exporter, had pushed coffee prices down. In addition to weather conditions, volatility in the Brazilian Real can also affect prices. A weaker Brazilian Real increases the incentive for exporters to export coffee. Both these forces continued to weigh on coffee prices through November. Since the 25 November data cut-off in this report, however, the Brazilian Real has recovered relative to the US dollar. As expected, coffee prices have also bounced back since then.

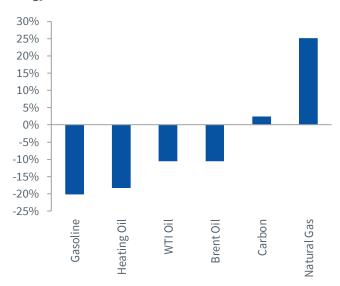
Agriculture — November Returns*



Energy

- + The energy sector ended the prior month's performance at 0.4%. Crude oils had already started to decline last month but were joined by petroleum products (gasoline and heating oil) as sentiment remained largely dominated by demand concerns owing to the global economic. Rising COVID-19 cases in China alongside its strict zero-COVID policy has dampened the outlook for demand from China.
- We would caution that the oil market remains vulnerable to a number of key events starting with the OPEC+ meeting on 04 Dec followed by the EU embargo on Russian oil alongside G-7 plans to launch a price cap on Russian crude sales on 05 Dec. OPEC+ decided to hold output steady reflecting the unpredictability of supply and demand over the coming months. As of this writing on 02 Friday December, The EU has now reached an agreement on the price cap on Russian oil at USD 60/barrel that is supposed to come into force together with the oil embargo on 05 December. EU embargo on the import of Russian oil comes into effect on 05 December for crude oil and 05 February 2023 for oil products. In the last three months, Russia has remained the largest external supplier of diesel to the EU. According to International Energy Agency (IEA) estimates, the EU was still importing 1.5mbd of Russian crude oil in October, which corresponded to just under 15% of total EU crude oil imports. In the coming months, the EU will need to find alternative suppliers. Replacing these supplies is not going to be easy. Russia will need to find other buyers leading to further uncertainty on the oil markets.
- + Gasoline declined by 20.2% over the prior month. According to the US Department of Energy (DOE), US crude oil stocks decreased by 3.7mn barrels in the last reporting week. In sharp contrast, gasoline and distillate stocks rose by 3.1mn and 1.7mn barrels respectively. The last time an inventory build was seen in autumn was in 2008, when the US economy was sliding into a recession. The seasonally untypical inventory build was due to lower domestic demand and reduced exports. Gasoline stocks remain 3% below the five-year average, however.

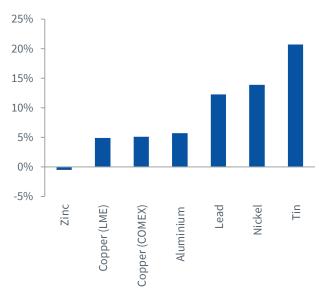
Energy — November Returns*



Industrial Metals

- Nickel traded limit-up (that is, rose more than 15% intraday) on 14 November 2022. With thinner trading on the contract after the March debacle at the LME, prices are swinging more wildly. The price trigger was debateable. Indonesia's plans to increase export tariffs (already known), a fire at an Indonesian producer (which was quickly denied), and a possible disruption to Nornickel's flow of materials from its mines in Russia to its refinery in Finland, were all cited by market participants. Finnish rail operator VR Group is suspending Russian freight from next year, though Nornickel is examining other transport options, including by sea. A tailings leak at Prony Resources' Goro plant in New Caledonia, was also uncovered. The plant will run at a reduced rate over the fourth quarter. In January 2020 Indonesia implemented a nickel ore export ban. The nation has the largest reserves of nickel ore. The ban was designed to generate higher-value nickel products in Indonesia and help Jakarta become part of the electric vehicles (EVs) global supply chain. It has been a success so far, with many Chinese companies setting up processing in Indonesia. However, the European Union has complained to the World Trade Organisation (WTO) and is very likely to win. Indonesia plans to appeal (when the ruling comes out). Although the dispute could take years to settle (and Indonesia's policies do not need to change while an appeal is underway), there is another source of bearish news taking nickel prices lower. Nickel has ended the month up 14% (after being close to 40% up in the first 15 days of the month). While the International Nickel Study Group project a surplus in 2022, they stress that the surplus is in low-grade nickel, not the high-grade nickel deliverable on the LME contract which is highly sought after for the battery value chain and quality steel products.
- + Tin more than reversed its October losses in November. Although it is still the worst performing base metal over the year (-45%) after having a fantastic year in 2021 (+93%). Indonesia, the world's biggest exporter of refined tin, is planning to ban exports of the metal to attract investment in processing it domestically, although the government said the timing had yet to be decided. The WTO ruling on nickel may affect the ambition and timelines for tin. However, unlike nickel, Indonesia already exports high purity refined tin, having banned exports of tin ore from late 2014. It exports tin bars, solder bars, and wires, according to trade ministry data.

Industrial Metals — November Returns*



Industrial Metals

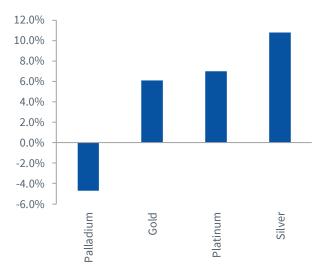
- + While both COMEX and LME copper curves are shifting higher over the past month (with front-month prices up close to 5%), the shape of the futures curves has twisted into contango (from a strong backwardation two weeks ago). While Shanghai inventory has risen, there is very little else to justify the moves and we believe the curve is likely to revert into backwardation. The news flow on the contrary seems very copper positive. Codelco, the world's biggest copper producer, will halve its refined copper sales to China in 2023, citing major production challenges at its Chuquicamata complex and closure of the Ventanas smelter, both in Chile. One of the main unions at BHP's Escondida copper mine in Chile rejected a company proposal to address alleged contract and safety breaches on 24 November. Failure to reach an agreement could result in strikes in coming days. The International Copper Study Group slashed its supply forecasts to post a deficit projection for 2023 from a surplus projection prior (see Recession may be a red herring for a market fuelled by a supercycle).
- + Lead gained 12.3% in the past month. The Bloomberg Commodity index will include the metal for the first time in January 2023 and we may see some buying of the metal in the run-up to that inclusion as investors try to move ahead of the congestion upon inclusion. The International Lead and Zinc Study Group project an 83,000 tonne deficit in 2022 followed by a 42,000 tonne deficit in 2023. That will eat up more above-ground inventory. Combined stocks on LME and SHFE are already down 47% over the past 6 months.
- + Zinc was the only base metal to fall in the past month. Paradoxically, it has the lowest levels of inventory of the base metals with a 75% decline (combined stocks on LME and SHFE) in the past 6 months. The International Lead and Zinc Study Group project a 297,000 tonne deficit in 2022 followed by a 150,000 tonne deficit in 2023, thus further tightening an already extremely tight market.

Precious Metals

- + Precious metals were up 7.4% last month. Gold, silver, and platinum made meaningful recoveries over the month, while palladium remained challenged.
- + For most of this year, the narrative for gold has been dictated by headwinds from rising US Treasury yields and dollar appreciation. Last month, the US inflation print came at 7.7%, slightly below consensus expectations, prompting a shift in market sentiment. Equities reacted positively in the immediate aftermath of the data release while both US Treasury yields and dollar came off their recent highs. Over the month, gold experienced a 134% improvement in its net speculative positioning, which has been meaningfully subdued in recent months relative to historic levels. This helped lift gold prices. If the recent inflation print allows the US Federal Reserve to start reducing the magnitude of its rate increases, this could further be supportive of gold.
- Silver's leveraged reaction to gold price movements was also on display last month. In recent months, we have observed how the gold-to-silver ratio has been much higher than historic levels highlighting silver's underperformance relative to gold. A recovery in gold, therefore, could bode even better for silver. Last month, the Silver Institute and Metals Focus also observed the strong fundamentals in the physical silver market. According to them, global silver demand is expected to be up 16% in 2022 compared with last year, while total supply is only expected to rise by 2%. Silverware, jewellery, and industrial demand (from things like electric vehicles, solar power, and 5G) are all expected to see meaningful growth this year alongside an increase in demand for silver as a hedge against inflation.

Platinum's emerging green credentials further extended its divergence from palladium last month. Platinum's role as a catalyst in proton exchange membrane (PEM) electrolysers is drawing a lot of interest towards the metal. PEM electrolysers are used to produce green hydrogen by passing a renewable energy electric current through water. This is an environmentally friendly process compared to the production of grey hydrogen which is produced from fossil fuels and has a high carbon footprint. But the high cost of green hydrogen production has been the key hurdle to overcome. Fortunately, this is beginning to change. According to precious metals refiner Heraeus, installed capacity of PEM electrolysers has grown by 460% since 2019 (as reported in November 2022). Furthermore, the costs of PEM electrolysers are estimated to decrease by around 9% each time the manufacturing capacity doubles. This is very encouraging for platinum's demand prospects.

Precious Metals — November Returns*



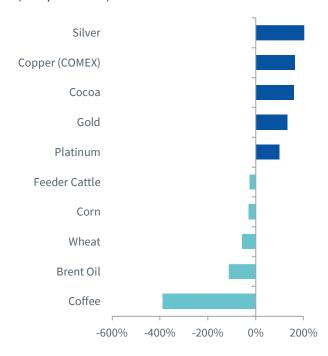
Technical Overview

as of 25 November 2022

Positioning

- Silver's net speculative positioning saw a healthy uptick last month as it bounced out of negative territory. This fuelled the double-digit price recovery for silver over the month.
- + Gold's net speculative positioning was lifted by 134.3% last month following the latest US inflation print. Gold's positioning, which was approaching 2 standard deviations below the preceding 5-year average last month, is now less than 1 standard deviation below its 5-year average.
- + Sentiment towards platinum continued to improve last month. Platinum's speculative positioning is recovering from a very low base but was up 97.8% last month alongside gains in prices.
- + Speculative investors are finally starting to notice the screamingly tight market in copper, with positioning flipping from net short to net long in the past month. Longs gained 23% while shorts fell by 26%.
- + Net speculative positioning in Brent oil futures fell sharply by 111% owing to a 32% build up in short positioning. In contrast net speculative positioning in WTI crude oil futures rose by 4% over the prior month, it is more than 1-standard deviation below the 5-year average underscoring extreme bearishness on the crude oil market. It's worth noting that speculative positioning in oil was on a downtrend prior to the peak in oil prices. That indicates that investors were probably taking profits on earlier holdings and higher volatility in oil market kept the buyers at bay.
- Net positioning in cocoa futures moved back into positive territory last month after being negative for several preceding months. Positioning is now approaching the 5year average.
- As highlighted in the agriculture section, favourable weather conditions and weaker Brazilian Real resulted in bearish sentiment towards coffee. Net positioning fell into negative territory last month.
- With the 4-month extension in the Russia-Ukraine grain deal, sentiment has gone further into negative territory and is now around 1 standard deviation below the 5-year average.

Top 5/Bottom 5 Change in CFTC Net Positions (over past month)*



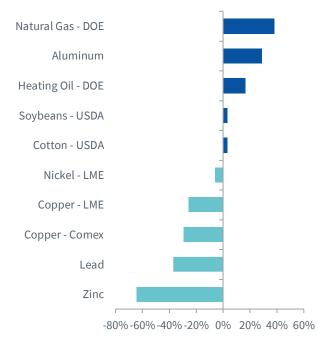
Source: Bloomberg

*CFTC futures net positioning as at report date, percent change from previous month. **Historical performance is not an indication of future performance and any investments may go down in value.**

Inventories

- + The bottom of the inventories chart is dominated by the base metals. Zinc inventory down 64%; lead down 37%; copper on both LME and COMEX down more than 25%, and nickel down 6% over the past 3 months. While aluminium inventory is up over the 3-month horizon, over the past month it fell by 11% on the LME and 40% on the SHFE, marking the resumption of the downward trend we have seen all year (with the exception of the August-October period).
- + Natural gas inventories have risen 38.2% over the past 3months highlighting lower heating demand owing to milder weather conditions for this time of year.
- + Heating oil inventories have risen 16.7% over the past 3-months but remain 15% below the 5-year average.
- + The USDA revised its 2022/23 global cotton balance sheet down for production, consumption, trade and ending stocks. At 87.3 million bales, world ending stocks in 2022/23 are projected 600,000 bale lower than in October, but 1.6 million higher than the year before.

Top 5/Bottom 5 Change in Inventories (over past 3 months)*



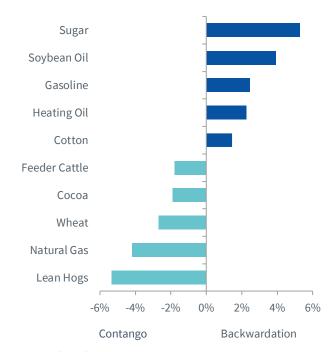
Source: Bloomberg

*Percent change in inventory based on 3 month change (in %). Historical performance is not an indication of future performance and any investments may go down in value.

Curve Dynamics

- + The front end of the natural gas curve remains in contango yielding -4.2% versus -9% a month back.
- + The drop in front month prices in both gasoline and heating oil has seen a reduction in the positive roll yields to 2.4% and 2.2% from 14.1% and 10.7% a month back respectively.
- + The backwardation at the short end of the sugar futures curve remained pronounced last month now providing a positive roll yield of nearly 5.3%.
- + The backwardation at the front end of the soybean oil futures curve steepened slightly offering a roll yield of 3.9%.
- + Although cotton's backwardation has moderated in recent months, it still offers a roll yield of 1.4% at the front end of the curve.
- In contrast, agricultural commodities also dominate the most contangoed end of the spectrum as well. Lean hogs offered a negative roll yield of 5.3% last month while wheat, cocoa, and feeder cattle offered -2.7%, -1.9%, and -1.8% respectively.

Top 5/Bottom 5 Roll Yields (front to next month)*



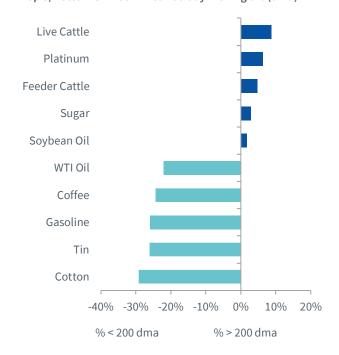
Source: Bloomberg

*Roll yields calculated as percent change between front month futures price and next month futures price on Nov 25, 2022. **Historical performance is not an indication of future performance and any investments may go down in value.**

Technicals

- + After making a 7% gain last month, platinum is now 6.3% above its 200-day moving average (dma).
- + Tin is trading significantly (26%) below its 200-dma. Indonesia's tin export ban proposal however may reverse the metal's fortunes once noticed by the market.
- + Gasoline is trading 25.9% below its 200-dma possibly indicating further downside ahead.
- + WTI Oil is trading 22.1% below its 200-dma as investors remain concerned about the demand outlook and are discounting the impact of key catalysts on supply such as OPEC+ decision, Russian supply risk, and the end of the strategic petroleum reserve (SPR) releases.
- + After falling 12% last month, cotton prices are now trading at 24.3% below their 200-dma.
- + Despite a 3.7% price increase last month, cotton prices are still trading at 29.2% below their 200-dma.

Top 5/Bottom 5 Price Diff to 200 day moving av. (dma)*



Source: Bloomberg

*Percent difference between the front month futures price and its 200 day moving average on Nov 25 2022. **Historical performance is not an indication of future performance and any investments may go down in value.**

Summary Tables

Prices

	Current	Unit	1 Month	3 Month	6 Month	1 Year
Energy						
WTI Oil	76.3	USD/bbl.	-10.6%	-17.6%	-30.9%	-2.7%
Brent Oil	83.6	USD/bbl.	-10.6%	-15.8%	-26.7%	1.7%
Natural Gas	7.02	USD/MMBtu	25.1%	-25.1%	-21.7%	38.6%
Gasoline	2.33	USd/gal.	-20.2%	-17.2%	-39.2%	0.4%
Heating Oil	3.24	USd/gal.	-18.4%	-18.0%	-16.2%	35.9%
Carbon	78.7	EUR/MT	2.4%	-11.5%	-2.9%	5.7%
Agriculture						
Wheat	7.8	USd/bu.	-7.1%	0.7%	-32.5%	-7.3%
Corn	6.7	USd/bu.	-2.7%	1.6%	-13.5%	15.2%
Soybeans	14.4	USd/bu.	3.9%	-7.5%	-14.6%	13.4%
Sugar	0.19	USd/lb.	6.7%	8.0%	-1.8%	-3.0%
Cotton	0.81	USd/lb.	3.7%	-30.6%	-44.0%	-32.4%
Coffee	1.64	USd/lb.	-12.0%	-32.8%	-24.6%	-33.6%
Soybean Oil	0.75	USd/lb.	3.1%	7.9%	-5.6%	22.3%
Cocoa	2,437	USD/MT	6.1%	0.8%	1.2%	-0.8%
Industrial Metals						
Aluminum	2,339	USD/MT	5.7%	-4.2%	-18.1%	-14.4%
Copper	3.63	USd/lb.	5.1%	-2.3%	-15.2%	-18.7%
Copper (LME)	7,992	USD/MT	4.9%	-2.1%	-14.8%	-19.3%
Zinc	2,923	USD/MT	-0.5%	-19.2%	-22.2%	-12.1%
Nickel	25,299	USD/MT	13.9%	17.1%	-5.4%	21.4%
Lead	2,111	USD/MT	12.3%	6.6%	0.9%	-7.8%
Tin	22,338	USD/MT	20.7%	-8.8%	-34.8%	-45.2%
Precious Metals						
Gold	1,753	USD/t oz.	6.1%	-0.3%	-5.0%	-1.7%
Silver	21.4	USD/t oz.	10.8%	12.1%	-2.0%	-8.8%
Platinum	1,006	USD/t oz.	7.0%	15.1%	7.7%	3.2%
Palladium	1,819	USD/t oz.	-4.7%	-14.9%	-8.5%	-1.4%
Livestock						
Live Cattle	1.53	USd/lb.	0.9%	8.5%	15.7%	11.0%
Lean Hogs	0.84	USd/lb.	-5.3%	-8.0%	-23.2%	11.1%
Feeder Cattle	1.78	USd/lb.	1.0%	-2.0%	15.3%	6.8%

Performance of front month futures from 25 Nov 21 (1 Year), 25 May 22 (6 Month), 25 Aug 22 (3 Month) and 25 Oct 22 (1 Month) to 25 Nov 22. **Historical performance is not an indication of future performance and any investments may go down in value.**

Roll Yields*

	Unit	Exchange	25-Nov	1 Week	1 Month	3 Month
Energy						
WTI Oil	USD/bbl.	NYMEX	-0.2%	0.0%	1.2%	0.4%
Brent Oil	USD/bbl.	ICE	-0.1%	0.5%	1.9%	0.9%
Natural Gas	USD/MMBtu	NYMEX	-4.2%	-6.1%	-9.0%	0.3%
Gasoline	USd/gal.	NYMEX	2.4%	3.0%	14.1%	6.0%
Heating Oil	USd/gal.	NYMEX	2.2%	3.6%	10.7%	1.7%
Carbon	EUR/MT	ICE	-0.2%	-0.2%	-0.2%	-0.2%
Agriculture						
Wheat	USd/bu.	СВОТ	-2.7%	-2.3%	-2.3%	-2.4%
Corn	USd/bu.	СВОТ	-0.5%	-0.3%	-0.9%	1.2%
Soybeans	USd/bu.	СВОТ	-0.4%	-0.3%	-0.7%	8.5%
Sugar	USd/lb.	NYBOT	5.3%	6.4%	5.4%	0.7%
Cotton	USd/lb.	NYBOT	1.4%	1.6%	0.7%	2.7%
Coffee	USd/lb.	NYBOT	-0.9%	-2.5%	1.8%	1.6%
Soybean Oil	USd/lb.	СВОТ	3.9%	3.0%	4.0%	3.5%
Cocoa	USD/MT	NYBOT	-1.9%	-1.8%	-0.5%	0.0%
Industrial Metals						
Aluminum	USD/MT	LME	-0.4%	-0.4%	-0.2%	-0.1%
Copper	USd/lb.	COMEX	0.0%	0.0%	1.0%	0.3%
Copper (LME)	USD/MT	LME	-0.1%	-0.1%	0.5%	0.2%
Zinc	USD/MT	LME	-0.1%	-0.1%	0.5%	0.8%
Nickel	USD/MT	LME	-0.2%	-0.2%	-0.2%	-0.2%
Lead	USD/MT	LME	-0.2%	-0.1%	0.3%	0.0%
Tin	USD/MT	LME	-0.1%	0.1%	0.0%	0.2%
Precious Metals						
Gold	USD/t oz.	COMEX	0.0%	-0.1%	0.0%	0.0%
Silver	USD/t oz.	COMEX	0.0%	-0.1%	0.0%	0.0%
Platinum	USD/t oz.	NYMEX	0.5%	0.5%	1.2%	0.1%
Palladium	USD/t oz.	NYMEX	-0.1%	-0.1%	-0.4%	-0.1%
Livestock						
Live Cattle	USd/lb.	CME	-1.3%	-1.8%	-1.1%	-1.8%
Lean Hogs	USd/lb.	CME	-5.3%	-5.9%	-2.5%	10.3%
Feeder Cattle	USd/lb.	CME	-1.8%	-1.3%	-0.7%	-1.3%

^{*}Roll return non-annualised from front month futures into second month on the date shown. 25 Aug 22 (3 Month), 25 Oct 22 (1 Month), 18 Nov 22 (1 Week). **Historical performance is not an indication of future performance and any investments may go down in value.**

CFTC Net Positioning¹

	Current	5 Yr Average	1 Month	6 Month	1 Year
Energy					
WTI Oil	300,924	494,200	289,124	386,688	452,111
Brent Oil ²	-11,351	125,792	97,222	111,592	153,181
Natural Gas	-152,559	-90,988	-153,097	-110,654	-139,196
Gasoline	48,671	69,542	45,138	32,479	54,674
Heating Oil	25,274	12,202	20,295	-5,948	16,074
Agriculture					
Wheat	-26,930	3,062	-17,157	33,169	27,533
Corn	224,034	168,944	312,745	396,666	429,467
Soybeans	81,561	71,218	62,771	170,332	74,922
Sugar	165,715	76,182	99,487	216,133	251,588
Cotton	17,666	55,280	13,901	72,450	112,545
Coffee	-16,403	2,547	5,710	32,659	66,063
Soybean Oil	110,069	44,305	93,545	78,894	71,967
Cocoa	13,999	17,721	-23,444	-1,823	9,034
Industrial Metals ³					
Copper (COMEX)	10,166	11,734	-16,072	-18,458	14,255
Copper (LME)	30,964	42,827	30,448	50,696	59,397
Aluminum	166,687	163,488	148,739	149,474	161,168
Nickel	35,104	26,749	21,642	28,840	39,586
Zinc	29,308	50,888	16,391	29,871	78,591
Lead	48,583	51,940	35,528	41,778	63,607
Tin	7,787	7,924	6,697	6,333	7,729
Precious Metals					
Gold	139,029	193,340	59,342	195,922	246,342
Silver	18,805	28,112	-432	11,518	41,023
Platinum	22,647	18,150	11,450	1,751	13,339
Palladium	-1,072	5,607	-1,745	-3,472	-1,824
Livestock					
Live Cattle	66,031	78,180	84,340	38,055	88,560
Lean Hogs	49,707	47,668	50,947	16,322	59,891
Feeder Cattle	-9,063	2,420	-7,197	-9,293	492

 $^{^{\}rm 1}\,{\rm Net}$ positions in number contracts.

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² Brent 5-Yr average of net positions from January 2011 as positions were not reported by CFTC before then.

³ All Industrial metals positioning data (excluding copper) is sourced from LME COTR data in Bloomberg from 30 January 2018 (first available date) under post-MIFID rules.

Inventory Levels*

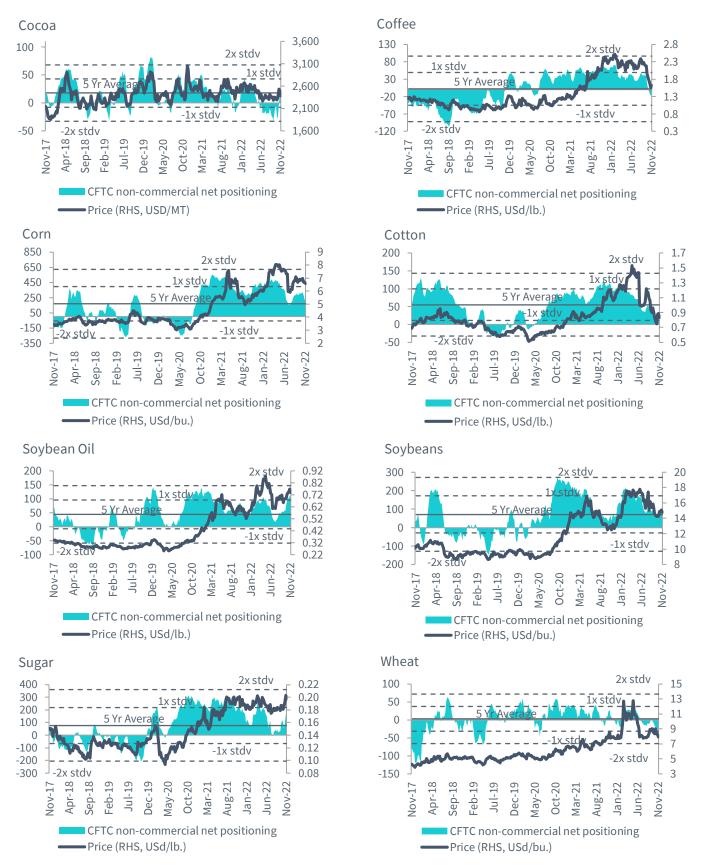
	Current	5 Yr Average	1 Month	3 Month	6 Month
Energy					
Oil - US	431,665	-3.8%	-2%	2%	3%
Oil - OECD Europe**	343	-1%	0.5%	1.4%	6%
Natural Gas - DOE	3,564	1.0%	5%	38%	96%
Gasoline - DOE	210,998	-3%	1%	-2%	-4%
Heating Oil - DOE	9,379	-15%	11%	17%	7%
Industrial Metals					
Aluminium	616,292	-61%	-18%	29%	-20%
Aluminium - LME	506,275	-55%	-11%	81%	5%
Aluminium - SHFE	110,017	-75%	-40%	-44%	-62%
Copper	198,595	-53%	-24%	-4%	-34%
Copper - LME	90,750	-51%	-32%	-26%	-46%
Copper - SHFE	70,249	-52%	-22%	125%	29%
Copper - COMEX	37,596	-58%	-3%	-29%	-53%
Nickel - LME	51,732	-73%	-2%	-6%	-29%
Zinc	61,853	-74%	-42%	-64%	-75%
Zinc - LME	41,450	-73%	-17%	-46%	-51%
Zinc - SHFE	20,403	-75%	-65%	-79%	-88%
Lead	68,972	-50%	-18%	-37%	-47%
Lead - LME	25,350	-70%	-11%	-33%	-35%
Lead - SHFE	43,622	-17%	-22%	-39%	-52%
Tin	7,319	-12%	0%	2%	41%
Tin - LME	3,255	-2%	-29%	-25%	7%
Tin - SHFE	4,064	-19%	49%	44%	88%
Agriculture					
Wheat - USDA	267,820	-6.6%	0.1%	-0.3%	0.2%
Corn - USDA	307,680	-2%	0.2%	-1.4%	-1.3%
Soybeans - USDA	102,170	2%	1.6%	3.3%	0.7%
Sugar - USDA	48,901	-4%	-	-	-
Cotton - USDA	87,270	1%	-0.7%	3.0%	5.4%
Coffee - USDA	32,650	-5%	-	-	-
Soybean Oil - USDA	4,925	5%	1%	1%	6%

^{*}Current inventories relative 1, 3, 6 months ago. The column "5-yr average" is the current inventory level relative to 5 years average inventory. For energy, 5-yr average is the average of the same month as report month over the past 5 years. SHFE started reporting inventory data from April 2015. ** (OECD) inventory data reported with 3-month lag with current = Aug 2022.

Historical performance is not an indication of future performance and any investments may go down in value.

CFTC Net Positioning

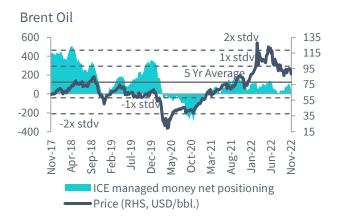
Agriculture

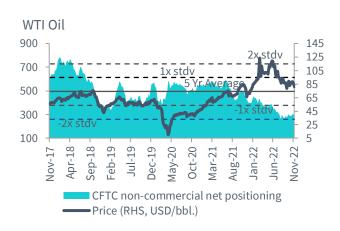


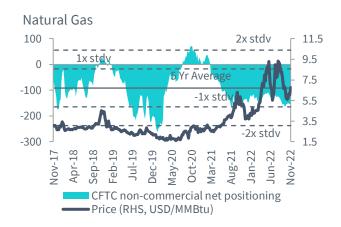
Source: Bloomberg, WisdomTree.

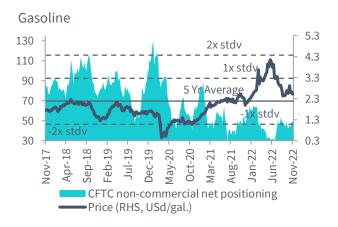
Note: positioning in '000 contracts. Standard deviation based on 5-year average CFTC non-commercial net positioning. All commodity futures price data is denominated in USD unless otherwise indicated. CFTC futures and LME COTR net positioning as at Nov 22, 2022 and Nov 25, 2022 respectively. **Historical performance is not an indication of future performance and any investments may go down in value.**

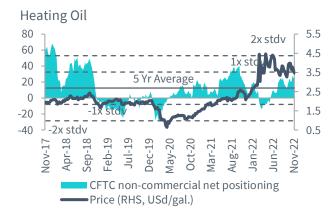
Energy







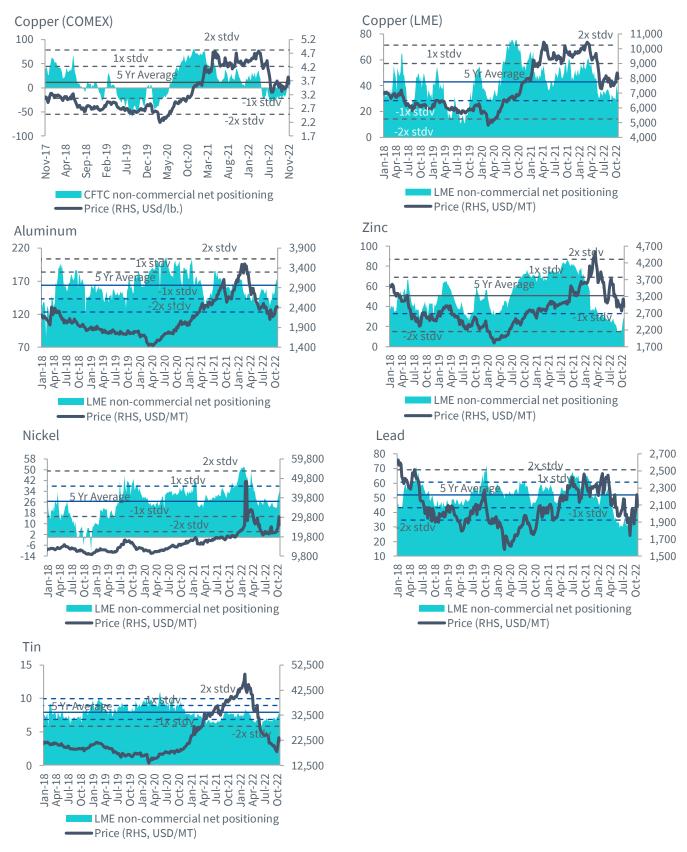




Source: Bloomberg, WisdomTree.

Note: positioning in '000 contracts. Standard deviation based on 5-year average CFTC non-commercial net positioning. All commodity futures price data is denominated in USD unless otherwise indicated. *Brent average of net positions from January 2011 as positions were not reported by CFTC before then. **Historical performance is not an indication of future performance and any investments may go down in value.**

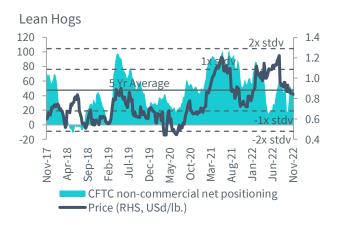
Industrial Metals

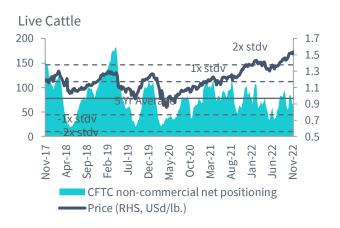


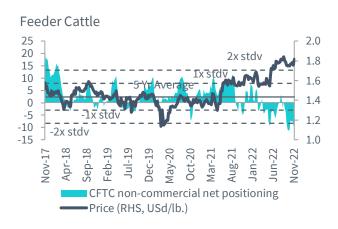
Source: Bloomberg, WisdomTree.

Note: positioning in '000 contracts. Standard deviation based on 5-year average CFTC non-commercial net positioning. LME non-commercial net positions from 30 January 2018 post MIFID II data and respective graphs represent daily data. All commodity futures price data is denominated in USD unless otherwise indicated. **Historical performance is not an indication of future performance and any investments may go down in value.**

Livestock

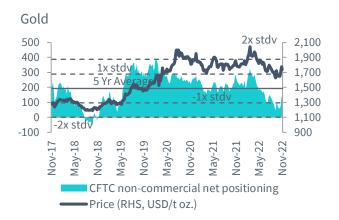


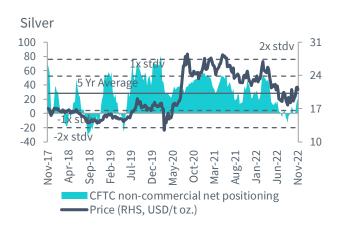


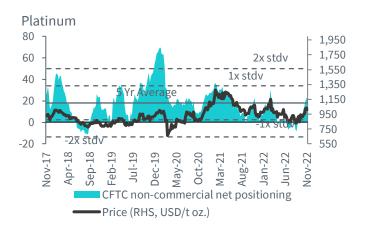


Source: Bloomberg, WisdomTree. Note: positioning in '000 contracts. Standard deviation based on 5-year average CFTC non-commercial net positioning. respective graphs represent daily data. All commodity futures price data is denominated in USD unless otherwise indicated. **Historical performance is not an indication of future performance and any investments may go down in value.**

Precious Metals







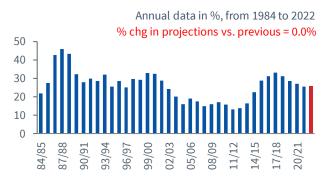


Source: Bloomberg, WisdomTree. Note: positioning in '000 contracts. Standard deviation based on 5-year average CFTC non-commercial net positioning. respective graphs represent daily data. All commodity futures price data is denominated in USD unless otherwise indicated. **Historical performance is not an indication of future performance and any investments may go down in value.**

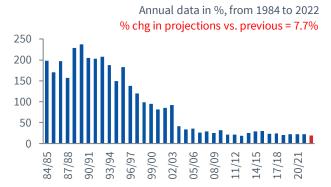
Inventories

Agriculture

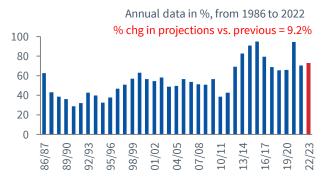
Corn - Stock to Use



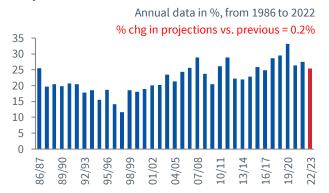
Coffee - Stock to Use



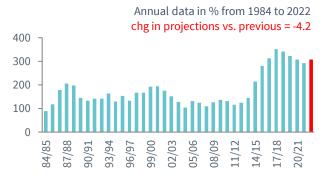
Cotton - Stock to Use



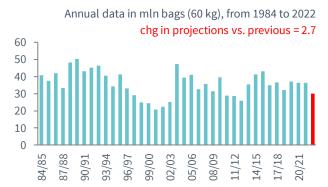
Soybeans - Stock to Use



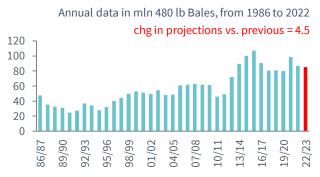
Corn - Ending Stocks



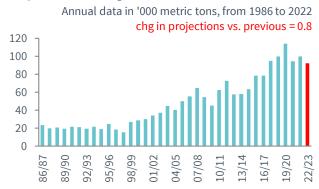
Coffee - Ending Stocks



Cotton - Ending Stocks



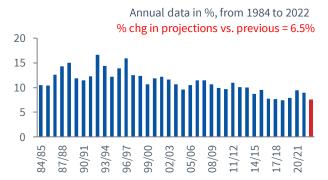
Soybeans - Ending Stocks



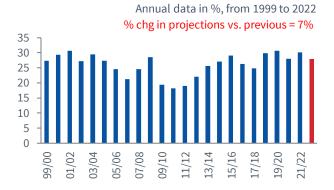
Source: USDA, Bloomberg, WisdomTree. Note: Ending stocks, inventories and stock to use data from the USDA are annual with monthly update of 2022/2023 estimates. **Historical performance is not an indication of future performance and any investments may go down in value.**

Agriculture

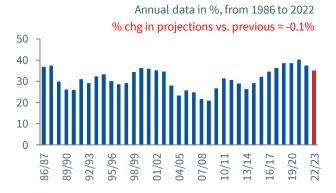
Soybean Oil - Stock to Use



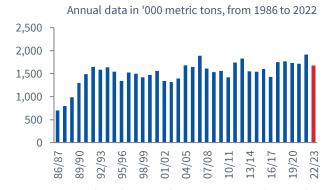
Sugar - Stock to Use



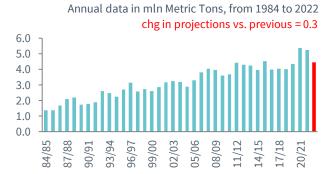
Wheat - Stock to Use



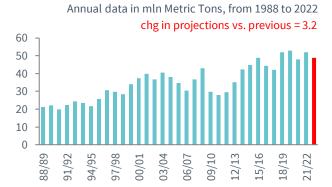
Cocoa - Inventory



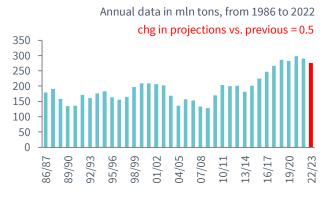
Soybean Oil - Ending Stocks



Sugar - Ending Stocks



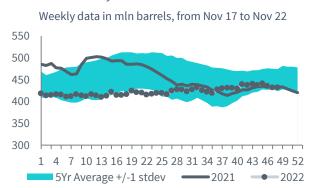
Wheat - Ending Stocks



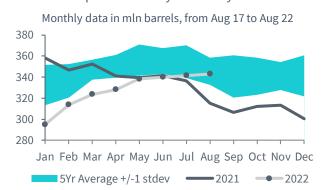
Source: USDA, Bloomberg, WisdomTree. Note: Ending stocks, inventories and stock to use data from the USDA are annual with monthly update of 2022/2023 estimates. **Historical performance is not an indication of future performance and any investments may go down in value.**

Energy

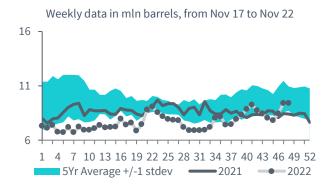
US Oil Inventory



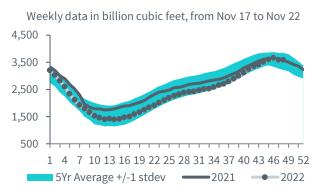
OECD Europe Oil Industry Inventory



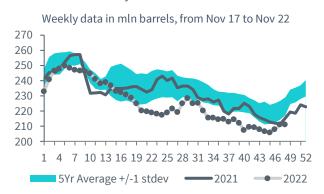
Heating Oil Inventory



Natural Gas Inventory

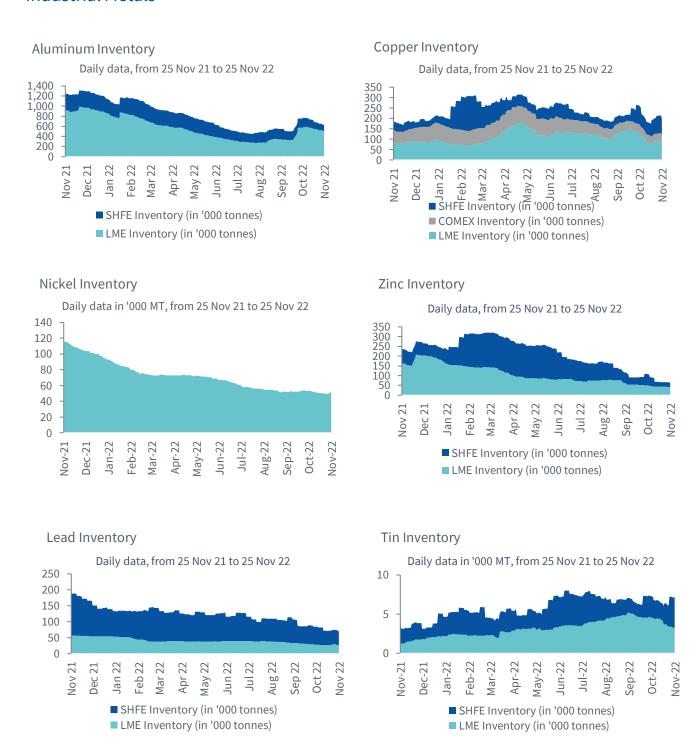


Gasoline Inventory



Source: Source: IEA / DOE, Bloomberg, WisdomTree. Note: "Oil - OECD Inventory" represents OECD industry stocks and is reported with a 3-month lag. Historical performance is not an indication of future performance and any investments may go down in value.

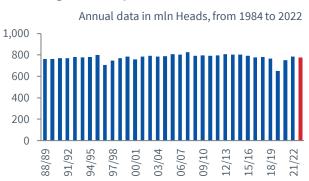
Industrial Metals



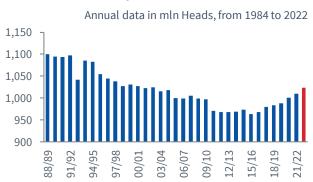
Source: Bloomberg, WisdomTree. Historical performance is not an indication of future performance and any investments may go down in value.

Livestock

Lean Hogs Inventory



Live Cattle Inventory



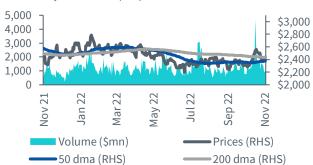
Source: USDA, Bloomberg, WisdomTree. Note: Ending stocks, inventories and stock to use data from the USDA are annual with monthly update of 2022/2023 estimates. Historical performance is not an indication of future performance and any investments may go down in value.

Moving Average and Volumes

Agriculture

Cocoa Front Month Futures Price

Daily data in USD/MT, from 25 Nov 21 to 25 Nov 22



Corn Front Month Futures Price

Daily data in USd/bu., from 25 Nov 21 to 25 Nov 22



Soybean Oil Front Month Futures Price

Daily data in USd/lb., from 25 Nov 21 to 25 Nov 22



Sugar Front Month Futures Price

Daily data in USd/lb., from 25 Nov 21 to 25 Nov 22



Coffee Front Month Futures Price

Daily data in USd/lb., from 25 Nov 21 to 25 Nov 22



Cotton Front Month Futures Price

Daily data in USd/lb., from 25 Nov 21 to 25 Nov 22



Soybeans Front Month Futures Price

Daily data in USd/bu., from 25 Nov 21 to 25 Nov 22



Wheat Front Month Futures Price

Daily data in USd/bu., from 25 Nov 21 to 25 Nov 22

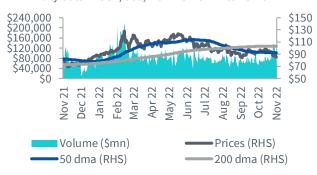


Source: Bloomberg, WisdomTree. Note: all commodity futures trading volume and price data is denominated in USD unless otherwise indicated. Historical performance is not an indication of future performance and any investments may go down in value.

Energy

Brent Oil Front Month Futures Price

Daily data in USD/bbl., from 25 Nov 21 to 25 Nov 22



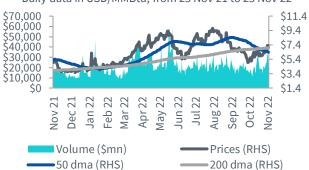
WTI Oil Front Month Futures Price

Daily data in USD/bbl., from 25 Nov 21 to 25 Nov 22



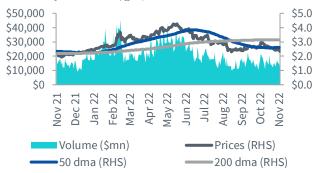
Natural Gas Front Month Futures Price

Daily data in USD/MMBtu, from 25 Nov 21 to 25 Nov 22



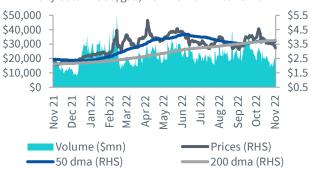
Gasoline Front Month Futures Price





Heating Oil Front Month Futures Price



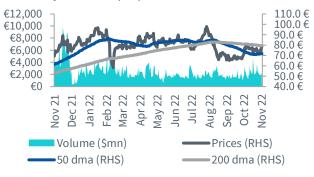


Source: Bloomberg, WisdomTree. Note: all commodity futures trading volume and price data is denominated in USD unless otherwise indicated. Historical performance is not an indication of future performance and any investments may go down in value.

Carbon

Carbon Front Month Futures Price





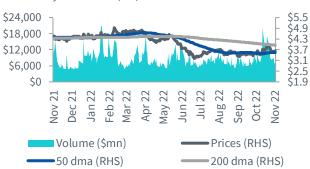
Industrial Metals

Aluminum Front Month Futures Price



Copper (COMEX) Front Month Futures Price





Nickel Front Month Futures Price

Daily data in USD/MT, from 25 Nov 21 to 25 Nov 22



Zinc Front Month Futures Price

Daily data in USD/MT, from 25 Nov 21 to 25 Nov 22



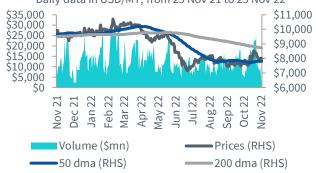
Lead Front Month Futures Price

Daily data in USD/MT, from 25 Nov 21 to 25 Nov 22



Copper (LME) Front Month Futures Price

Daily data in USD/MT, from 25 Nov 21 to 25 Nov 22



Tin Front Month Futures Price

Daily data in USD/MT, from 25 Nov 21 to 25 Nov 22

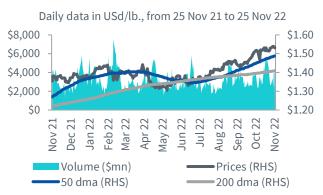


Livestock

Lean Hogs Front Month Futures Price



Live Cattle Front Month Futures Price



Feeder Cattle Front Month Futures Price



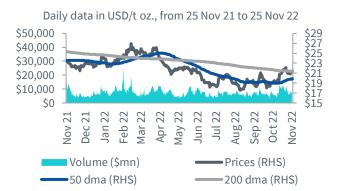


Precious Metal

Gold Front Month Futures Price

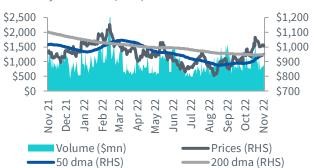


Silver Front Month Futures Price



Platinum Front Month Futures Price





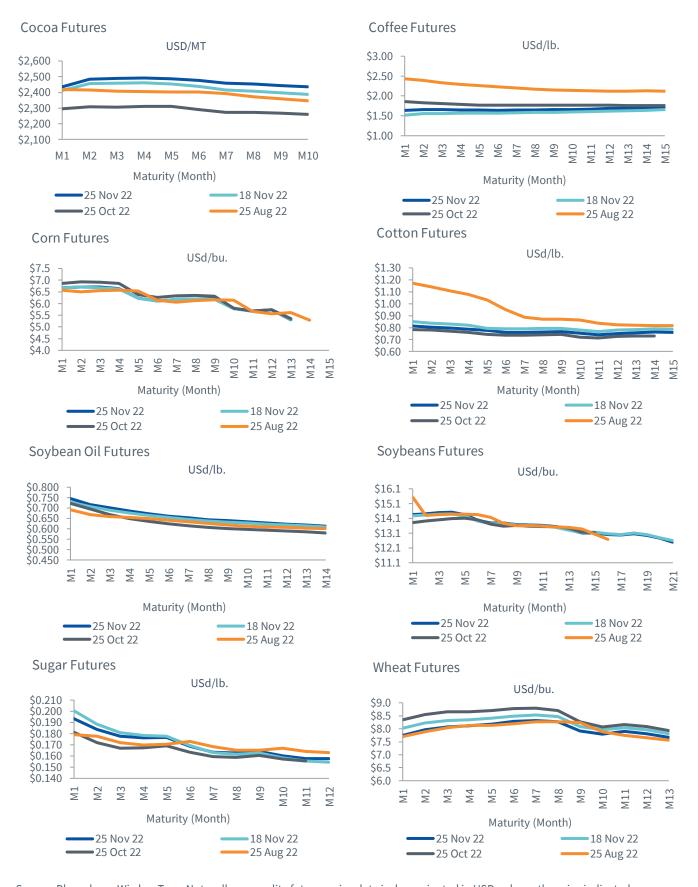
Palladium Front Month Futures Price



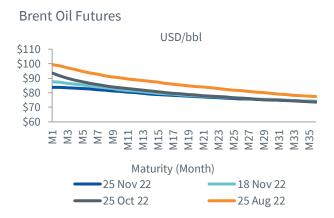


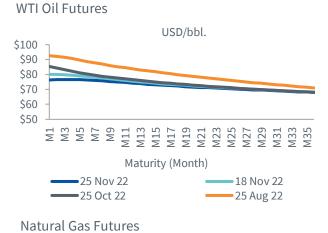
Future Curves

Agriculture

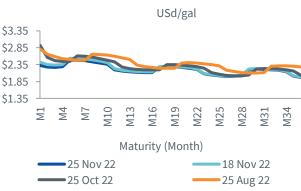


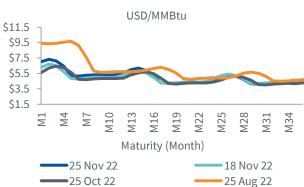
Energy



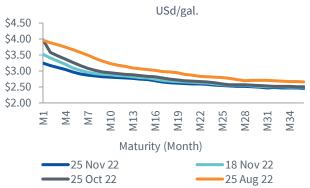




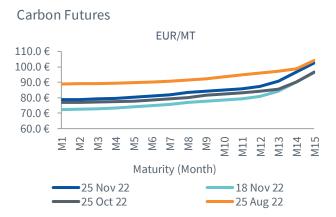




Heating Oil Futures



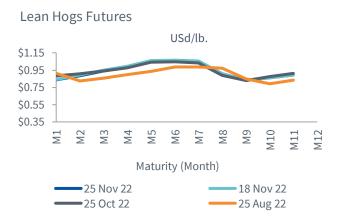
Carbon

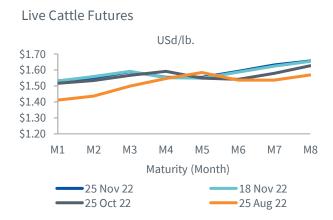


Industrial Metals

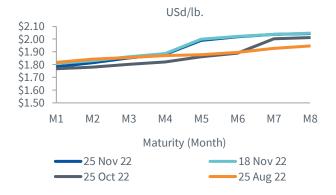


Livestock

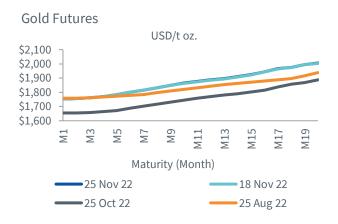


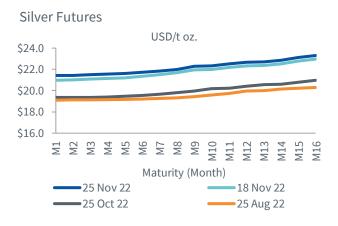


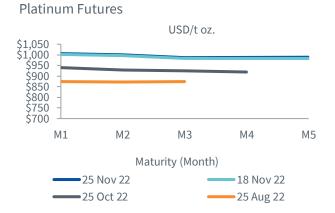
Feeder Cattle Futures



Precious Metals









Commodity Monthly Matrix Explained

Score based on unweighted sum of four fundamental/technical measures detailed below with each measure awarded a possible score of -1, 0, or 1 depending on whether variable is viewed as fundamentally negative, neutral or positive. Score ranging from -4 to +4. For commodities where data is not available or not relevant, scores are calculated on remaining variables and adjusted to the -4 to +4 scale. The score matrix is designed to highlight significant changes in key variables but should not be viewed as predictor of performance.

The four fundamental/technical measures are as follow:

- + Price vs. 200 days moving average: 1 when price is above 200dma and return is positive, -1 when price is below 200dma and return is negative, 0 otherwise.
- + % change in net positioning over the past month: 1 when % change is positive, -1 when % change is negative, 0 when no change.
- + % change in inventory level over the past 3 months: 1 when % is negative, -1 when % is positive, 0 when no change.
- + Roll yield between the front and second month futures contracts: 1 when in backwardation, -1 when in contango, 0 when no change.

Calendar

WisdomTree - Recent Blogs					
01-Dec-22	Nitesh Shah	What's Hot: Dr Copper's misdiagnosis			
30-Nov-22	Chris Gannatti	Are recycled battery metals as effective as those newly mined?			
28-Nov-22	Chris Gannatti	The 'new' real estate for a post-COVID world			
25-Nov-22	Aneeka Gupta	What's Hot: Supply risks point to higher oil prices			
23-Nov-22	BVP	SaaSacre 2nd wave: macro double squeeze			
23-Nov-22	Chris Gannatti	Can 'passive' thematic strategies really provide expert stock selection? Absolutely.			
22-Nov-22	Pierre Debru	When inflation is high, investors focus on high pricing power equities			
21-Nov-22	Aneeka Gupta	What's Hot: Endgame for central banks far from done			
16-Nov-22	Aneeka Gupta	Restrictive policy and geopolitical risks raise the odds of a global recession			
11-Nov-22	Mirva Anttila	What's Hot: Potential impacts of the unravelling of the FTX crypto empire			
10-Nov-22	Chris Gannatti	Robots are already amongst us			
09-Nov-22	Elvira Kuramshina	WisdomTree Quarterly Thematic Review: thematics for the long run			
07-Nov-22	Chris Gannatti	Do thematic ETFs have too much overlap with established indices?			

WisdomTree - Past Issues of Commodity Monthly Monitor					
Oct-Nov 2022	Research Team	Commodities now eyeing a cyclical recovery			
Sep-Oct 2022	Research Team	A market ripe for short-covering rallies			
Aug-Sep 2022	Research Team	Will the commodity bounce from late summer last?			
Jun-Jul 2022	Research Team	Commodities narrowly miss a bear market			
May-Jun 2022	Research Team	Commodities wobble as central banks declare war on inflation			
The receased notes are far qualified investors only					

The research notes are for qualified investors only.

Key Reports					
Current	Next release				
12-Nov-22	09-Dec-22	USDA	World Agricultural Supply and Demand Estimates		
08-Nov-22	06-Dec-22	EIA	Short-Term Energy Outlook		
14-Nov-22	13-Dec-22	OPEC	OPEC Oil Market Report		
15-Nov-22	14-Dec-22	IEA	IEA Oil Market Report		

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