

COMMODITIES

OUTLOOK

A structural trend derailed... for the moment



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Ofi invest
Asset Management

The first half of the year ran counter to most scenarios of commodities market participants. China had been expected to come roaring back from a dismal year in 2022, which was marked by its “zero-Covid” policy and a severe economic slowdown. But that comeback has so far disappointed, and all signs seem to suggest that the weakening in some sectors is more structural in nature. The recovery scenario that the markets bought into in late 2022, when China announced it would reopen, has still not come to pass. This has triggered a severe correction on the metals market in recent months.

Nor was there much support from the rest of the world. The US Federal Reserve, which handles US monetary policy decisions, was forced to prolong its tightening cycle beyond what the markets were expecting. Meanwhile, manufacturing activity slowed considerably in many countries and an inventory-drawdown cycle began, in the aftermath of the post-Covid surge in economic activity and demand.

All of the aforementioned factors have pushed down metals demand and prices, thwarting, for the moment, our scenario that these would be driven up by the energy transition and structurally constrained supply.

And yet, there is much to suggest that this correction is due to temporary factors (hawkish monetary policies, the Chinese slowdown, destocking, etc.), the impacts of which are likely to fade sooner or later. We expect structural trends, particularly in the energy transition, to take the lead, and prices of metals that are essential to that transition to resume their upward climb. In particular, the drawdown of metal inventories accumulated in China during the pandemic appears to be coming to a close.

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	Price at 31 Aug. 2023 in US dollars	YTD performance	High since 2020 in US dollars	Date	Drawdown since high
Gold	1,965.9	2.71%	2,150	6 Aug. 2020	-8.56%
Silver	24.81	-0.98%	30.78	10 Aug. 2020	-19.40%
Palladium	1,218.7	-33.93%	3,011.5	4 Mar. 2022	-59.53%
Platinum	974.4	-10.88%	1,306	15 Jan. 2021	-25.39%
Copper	8,422.5	0.12%	10,674	4 Mar. 2022	-21.09%
Aluminium	2,208	-11.42%	3,849	4 Mar. 2022	-42.63%
Zinc	2,430.5	-18.27%	4,498.5	19 Apr. 2022	-45.97%
Nickel	20,289	-34.23%	33,911*	21 Apr. 2022	-40.17%
Lead	2,218	-3.74%	2,497	8 Mar. 2022	-11.17%

** The nickel peak price excludes the spike that occurred just after war broke out in Ukraine, as well as the impact of unwinding of positions held by Tsingshan.*

Source: Bloomberg dated compiled by Ofi Invest AM teams, August 2023.

Past performances are not a reliable indicator of future performances.

2023 assessment and outlook (at end-August)

One of the major events that the markets had priced in was China's reopening after the long months of its "zero-Covid" policy, which had severely dented economic activity. In reality, the reopening has been far slower and more challenging than expected.

Upstream preparations for the reopening were inadequate, including a low vaccination rate. This caused a heavy wave of infections that slowed economic activity even more in January and February. Growth then began to recover in March, and accelerated in April, surpassing even the projections of the government, which decided to rescind some of the support measures that it had introduced.

After accelerating in spring, economic activity weakened once again. Real estate in particular was dragged a little more into crisis mode by heavy developer and local government debt, limited government assistance, and slackening Chinese consumer confidence.

At first, it was the shakiest property companies that were thrown into disarray by the combined impact of the “three red line” reform (requirements put through by Beijing in 2020 to restrict property company debt through borrowing caps) and the implementation of the “zero-Covid” policy in 2022. Now, however, the entire sector is in trouble and facing a very steep drop in housing sales.

Much of this was due to the consequences of the “zero-Covid” policy introduced in 2022. Chinese households suffered a loss of income, in some cases significant, which was not offset by government assistance, as was the case in Europe and the US. This affected their propensity to consume. The jobless rate surged, particularly among young graduates, thus undermining their purchasing power and visibility on future income. All this has made it harder for these households to become homeowners. Beyond these economic effects, developer defaults and unfinished construction sites appear to have sapped household confidence, in real estate in particular. These are tough issues to address, requiring time and heavy government incentives, especially as the Chinese government does not seem inclined to massively support domestic consumption, opting instead to keep its fiscal deficit under control. The sector recovery could therefore be a long process, requiring public assistance, as well as further deleveraging and consolidation.

The other major influence on the metals market is the US and this, too, has been weaker than expected since the start of the year. The Fed has been on its guard against stubborn inflation and has flagged that rate hikes are not over yet. This caught the market wrong-footed, as it had already priced in some monetary easing by the end of 2023.

The rate-tightening cycle, which the markets had expected to end soon, was ultimately prolonged. Inflation, while receding, is not close enough to the Fed’s 2% annualised long-term target, and the monetary tightening already accomplished has not slowed activity enough in some sectors. This has pushed bond yields and the US dollar up further. The real 10-year US yield was still in negative territory in early 2022 but is now approaching 2%. The dollar has also risen sharply, with the Dollar Index up by almost 10% on the year to date. Such an environment is generally not conducive to the commodities market.

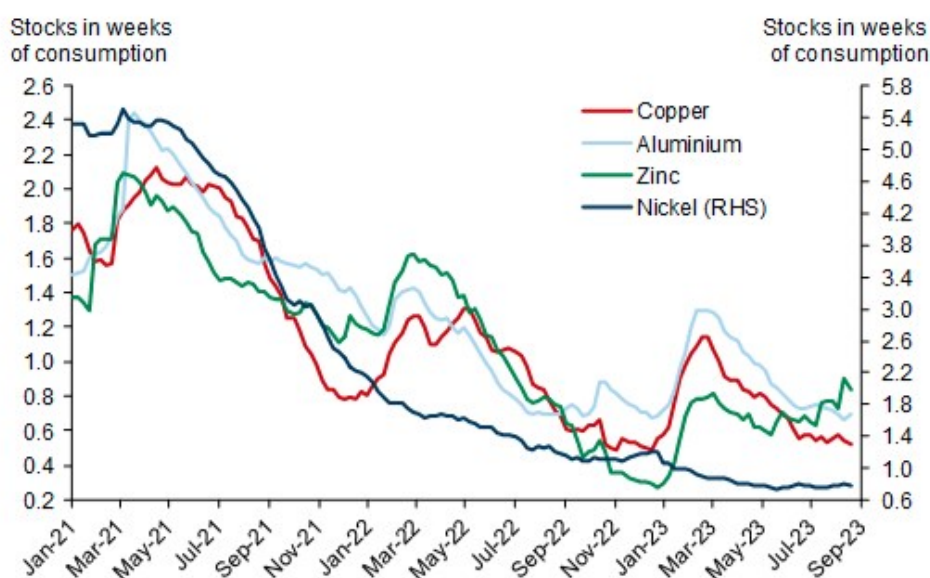
And, lastly, manufacturing in developed economies has been slowed sharply by weaker demand, inventories built up just after the Covid crisis, and the increase in certain costs and financing rates. This has also squeezed demand for metals, and manufacturers have often opted to draw down their existing inventories, pending better visibility.

All this has undermined financial investor morale and triggered heavy selling of metals on derivatives markets, with short positions on forward markets now at historically high levels. This, in turn, has vastly exacerbated the initial impact of lacklustre demand and has sent prices plunging.

The current period stands out in having severely tested convictions on the metals market. There are many temporary factors that call for caution in the short term on metals consumption. However, there are also some factors working in the other direction, suggesting that the shift may have been overdone and that is some room for a potential rally.

For one thing, physical demand has held up better than what is reflected in prices. The physical market has remained tight in most metals, despite a slowdown in industrial activity. In China, for example, consumption has actually risen so far this year. True, demand for metals has so far been satisfied by existing inventories, as Chinese manufacturers' lack of visibility have led them to tap those inventories rather than the international market. Weak international demand is another reason for the lack of price support. However, Chinese companies now appear to have used up most of their domestic inventories, and additional demand is likely to result in buying on the international market and, hence, to help support prices.

Metal inventories, in weeks-equivalent of consumption



Source: Goldman Sachs Global Investment Research, Wind, Bloomberg; August 2023

Moreover, the energy transition remains a crucial source of market support. For the moment, the transition seems to have eclipsed by cyclical factors, whose impact on demand is shorter-lived but is currently dominant on the metals market. Keep in mind that commodities are mainly cash markets. Prices are set on the basis of balance in supply and demand, with little projecting of future market conditions. This has so far kept prices under pressure.

And yet, the roll-out of the energy transition is already having a very significant impact on demand for metals. Copper in China is a clear example. Despite the slowdown in traditional sectors, net demand rose by 11% from January to July 2023 compared to the same period last year, due mostly to installation of renewable energy capacities, expansion of the electrical grid, and production of electric vehicles (EVs). This “green” demand for copper is up by 79% on the year to date and has more than offset the decline in traditional sectors.

We are therefore sticking to our scenario of a gradual increase in demand and severe constraints on production on the metals market. This scenario has for the moment been shaken by a combination of temporary factors. However, structural issues are increasingly coming to the fore, and the acceleration in the energy transition is likely to run into supply-side constraints soon. Under-investment in mining exploration and extraction is still a major obstacle to expanding production. To cite one example, the International Energy Agency (IEA) estimates that, to secure production of copper alone, 80 mines would have to be launched of a size equivalent to the average of those already operating (i.e., a little more than 250 mines in about 40 countries). And all 80 mines would have to be launched in the next three years, given the 17 years on average that it takes for copper mines to be up and running!

Prices are therefore likely to turn back up as soon as there is a lull in the economic slowdown, but exactly when this happens will depend closely to the China scenario. And we still lack visibility on a recovery there. The government is facing structural problems and must strike a balance between supporting the economy and the necessary deleveraging in certain sectors, and that could take time. The end of the Fed’s tightening cycle and developments in the manufacturing slowdown are other signals to keep an eye on.

The long-term investment case in this asset class continues to hinge on trends in the economic cycle, which generate volatility¹ in metal prices. However, after a steep correction, during which metals have given up most of their gains from recent years, this looks like a good time to build up positions at an attractive risk/reward ratio.

¹ Volatility: a calculation of the amplitudes of price shifts in a financial assets. The greater its volatility, the more than an investment is regarded as risky.

Precious metals

Gold

Gold remains closely tied to financial demand and to the level of real interest rates. In the first part of the year, US figures suggested that the economy was highly resilient to Fed rate hikes and that inflation that was staying stubbornly above the central bank's annualised 2% target. In reaction, the Fed has had no other choice but to continue to tighten and to stick to its hawkish stance. This has pushed US interest rates up further, with the 10-year yield recently returning to levels not seen since 2007. As inflation expectations have been unchanged for the moment – no doubt due to the Fed's unrelenting tone – US real interest rates have also continued to rise, as they have since 2022; from -1% in 2021 they have risen to almost 2%.

This is not good news for gold, a non-yielding asset, and it has indeed been hit by rising real interest rates. And yet, after suffering a slight correction in 2022, gold is up slightly on the year to date. There are several reasons for gold's resiliency to rising real interest rates.

First, central banks continue to buy gold in large quantities. After an exceptional year in 2022 (buying 1136 tonnes of gold, a high since 1967 and up from 450 tonnes in 2021), central banks have kept at it, buying a net 387 tonnes of gold in the first half of 2023. This figure would be even higher if Turkey's central bank had not sold such large quantities of gold for domestic management reasons. Its need for diversification is pointing to further purchases of gold, which is also evidently in accordance with its economic scenario.

Other market participants appear to have come to the same conclusion and are buying gold as an inflation hedge. According to the World Gold Council, in the first half of 2023, OTC² demand rose to a total of 398 tonnes.

Moreover, investors may already be pricing in an adjustment in real interest rates. If inflation were to stay sustainably higher than its pre-Covid levels and central banks' targets, inflation expectations would adjust and lower the level of real interest rates. The market may already be glimpsing this scenario, which would obviously be good news for gold, and in which gold would still have some upside potential.

Lastly, the current environment, fraught with significant financial and geopolitical risks, looks as though it will drag on, with possible periodic outbreaks. This environment continues to favour diversification into assets without counterparties, such as gold.

² OTC, or over-the-counter, refers to transactions made off standardised markets.

US inflation: actual and forecast



Note: US CPI YoY is the year-on-year US consumer price index. The 5Y/10Y breakeven is the rate balancing 5-year/10-year inflation expectations. And the US PCE YoY is the YoY index of staple consumer goods and services.

Source: Bloomberg, September 2023.

Silver

Silver prices have slipped only very slightly on the year to date. There are two reasons why they have held up so well. First of all, silver is both an industrial and precious metal and, as such, remains closely correlated to gold. Accordingly, gold's resiliency has helped protect silver from the unfavourable impact of a cyclical slowdown. As with gold, a combination of higher inflation and monetary tightening in the US has led to both an increase in physical demand from investors seeking inflation protection, and to short-selling due to higher interest rates and anticipations that this trend will continue.

But silver has also been driven by growth of demand from the roll-out of the energy transition. As the world's best electrical-conducting metal, it is needed for the manufacture of photovoltaic panels and batteries for EVs.

The photovoltaic sector's support for silver demand has been especially strong. Installation of capacities has far exceeded expectations, particularly in China, which rolled out more capacities in the first six months of the year than in all of 2022. What's more, technological trends are in the direction of greater silver content in solar panels. Now that N-type panels, which are more energy efficient, have entered into mass production, the sector's silver consumption in 2022 was almost three times higher than in 2010.

This trend is likely to continue. Some new technologies arriving on the market use far more silver than current technologies. The silver content of a TOPCon (Tunnel Oxide Passivated Contact) panel, for example, is 1.3 to 1.5 times higher than in a PERC (Passive Emitter and Rear Contact) panel, the dominant technology with a 90% market share as of end-2022. The silver content of an HJT (Heterojunction Technology) panel is 1.6 to 1.8 times higher than in a PERC³. On the whole, installed capacity is expected to surge this year. China alone plans to install 200 gigawatts of photovoltaic energy capacities in 2023⁴. As a result, this sector's consumption of silver, non-existent a few years ago, is now a major source of demand, and in 2022 it had already accounted for more than 13% of global annual consumption.

As for EVs, Bloomberg New Energy Finance estimates that the number produced will increase to 13 million in 2023, vs. 10 million in 2022. The Silver Institute estimates that by 2025, the sector's demand for silver will hit 90 million ounces (about 2900 tonnes), or 11% of global supply. By 2040, almost half of annual silver output could be absorbed by the EV manufacturing chain.

Physical demand for silver is expected to remain robust in the coming months. Metal Focus projects a supply/demand deficit of 4,500 tonnes in 2023, or 12% of global demand projected for the year. 2022 had already seen record physical demand for silver and a wide deficit open up. But, unlike in 2022, institutional investors' wave of selling could gradually fade, as they glimpse the end of the monetary tightening cycle. As a result, we believe that the upward trend in physical demand, driven by the development of silver-consuming low-carbon technologies will ultimately carry the day and cause prices to rise back at least to their 2021 highs.

Platinum and palladium

Platinum and palladium were hit hard in the first part of the year. One reason for this was weaker industrial demand for these precious metals, amidst a cyclical slowdown. But more specific factors also came into play.

Platinoids are used mainly to make catalytic converters for internal combustion engine (ICE) vehicles. As such, expectations of a rapid shift in mobility to EVs, which don't have catalytic converters, have raised fears of weaker demand for platinoids in the auto sector.

³ Source: *World Silver Survey, Metal Focus*

⁴ Source: *IEA*

Such fears have resulted in two phenomena:

- First, many industrial consumers have opted to draw down their inventories of platinoids, anticipating weaker future demand, rather than buy on the market, thus shrinking end demand.
- And, second, platinoids, palladium in particular, have been targeted by investors betting on a weakening in demand caused by the transition from ICE engines to electric ones. Amidst reduced liquidity⁵, such bets, which are only loosely connected to market fundamentals, have dragged down prices.

Palladium is being squeezed even more by two main factors. First, the substitution of platinum for some palladium applications in the auto industry, due to the price differential between the two metals. About 730,000 ounces of palladium have been replaced by platinum this year in the catalytic converter production.

A second factor, and not the least of them, has squeezed palladium prices: Russia, a major producer (40% of annual global output), has sold down some of its inventories. The market estimates such selling at between 60 and 150 tonnes on an annual market of about 350 tonnes. No wonder this has exacerbated the price declines. Such massive selling has sent palladium inventories to very low levels Russia, and that could very well limit future selling.

The aforementioned factors have caused a true dislocation between market fundamentals and platinoid price trends.

Both markets, in fact, are being squeezed by a trend decline in production. The vast majority of both metals are produced by two countries – South Africa and Russia. South Africa, which produces 80% of the world's platinum and 40% of its palladium, is facing a severe energy crisis that has affected mining output. So far this year, South Africa has had just one day without a blackout somewhere in the country! As a result, Sibanye Stillwater, a mining company, has already projected that metals output in 2023 will be 10% to 20% lower than last year.

The other major palladium producer is Russia. Instability there and the current severe tensions with the EU and the US could seriously undermine production or delivery of metals produced in Russia.

More structurally, we believe that the markets are mistaken in believing that palladium will no longer be needed in the coming years as the auto industry transitions from ICE vehicles to battery-equipped EVs. It is unlikely that all the world's regions can

⁵ *Liquidity: asset is regarded as liquid when it can be bought or sold rapidly without major impacts on its price.*

produce the electrical capacity necessary to fully electrify the transport sector. Accordingly, as production of ICE vehicles will have to continue in some form, we believe that hybrids are essential. Hybrids use 15% more platinum and palladium than an ICE vehicles. We therefore believe that the market is rushing things and oversimplifying the end of the auto sector's demand for platinoids.

And, lastly, demand from the energy transition is accelerating and each year accounts for a greater and greater share of demand, particularly for platinum, which is needed in the manufacturing of electrolyzers that generate green hydrogen, of the fuel cells used to convert this hydrogen into electricity, and of fibre optics used in making solar panels. Palladium is also needed for making electrolyzers. A recent study by Bank of America estimates that growth in electrolyzers will add 300,000 ounces to annual demand for platinum, and fuel cells, 400,000 ounces, by 2030.

Industrial metals

Copper

As an industrial metal that, by nature, is highly sensitive to shifts in the cycle, "Dr Copper" has held up remarkably well to the slowdown in economic activity. Prices of copper are even up on the year to date, while most industrial metals have suffered major corrections.

There are several reasons for copper's resiliency. For one thing, traditional demand has not been hit too hard by the sharp slowdown in the Chinese real-estate market. Most copper is needed at a later stage of construction, for electricals that are among the last components installed. In 2022, the "zero-Covid" policy and the liquidity squeeze affecting many real-estate developers had brought many construction sites to a halt, much to popular discontent. That's why the Chinese government this year focused on assistance to complete unfinished buildings. As a result, while sales and construction starts nose-dived, construction completions rose by 20% from January to July 2023, compared to one year earlier. Demand for copper thus held up well, despite the slowdown in the construction sector.

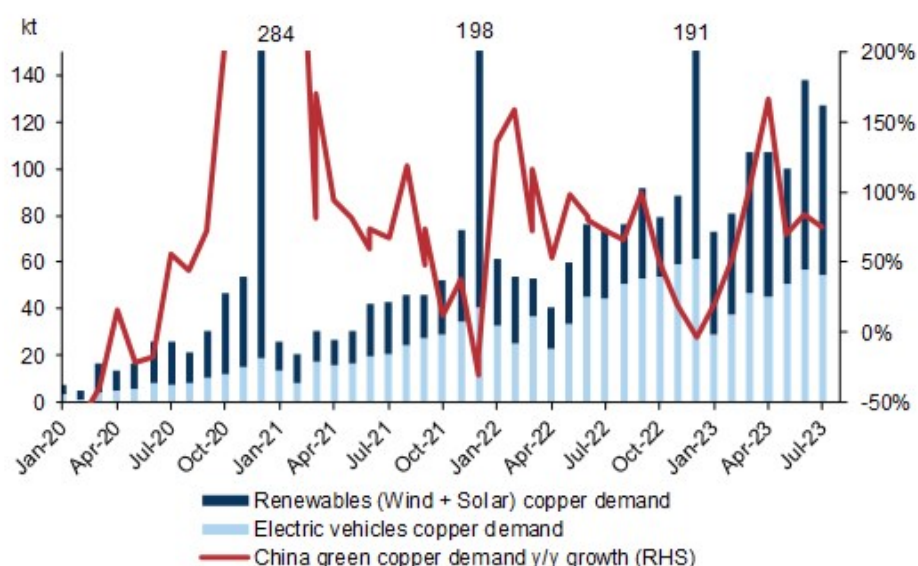
Second, demand is clearly picking up for copper used in the energy transition and is providing real support for prices. China in particular, is laying on heavy incentives for the development of renewable energies and the roll-out of EVs. China is an estimated five years ahead of its photovoltaic capacity installation schedule, and aims to install 300 gigawatts of solar and wind power this year. By the end of the first half

of 2023, China had already installed more capacities than in all of 2022, a record-breaking year.

Copper, an electricity conductor, is used in almost all decarbonated technologies. It is therefore riding growth in all energy transition sectors.

As a result, the latest figures from China show that demand for copper from renewable energies rose by 130% from January and July compared to the same period in 2022. Demand from the expansion in EVs, meanwhile, rose by 23% over the same period. Hence, despite the adverse economic environment, China's end consumption of copper, which absorbs almost 50% of global demand, is up by 11% on the year to date!

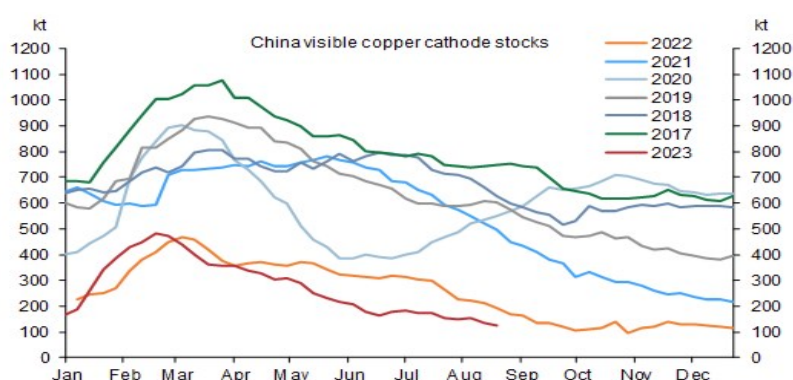
Copper demand from renewable energies and EVs in China, millions of tonnes (left scale); trends in copper demand from the energy transition, Y/Y% (right scale)



Source: Goldman Sachs Global Investment Research, Wind, Bloomberg; August 2023

This robust trend is currently only slightly reflected in international demand, as Chinese manufacturers, lacking visibility in their sectors, have opted to tap the metal inventories accumulated during the Covid crisis. Demand from these manufacturers have therefore had little impact on copper prices. However, these inventories now appear to have been almost used up. It is therefore likely that, if demand for copper holds up, manufacturers will have to tap international markets, which would prop up copper prices.

Copper inventories in China, in thousands of tonnes



Source: Goldman Sachs Global Investment Research, Wind, Bloomberg; August 2023

Nickel

In 2022, nickel rode a highly favourable environment, outperforming other metals on the year as a whole. Nickel's performance was driven by fears of reduced supply from Russia after the war broke out, and by the boom in EVs, some of whose batteries are heavy consumers of nickel.

This year, nickel has suffered a severe correction, and is almost 40% off its highs. There are three main reasons for this.

First of all, the electrified transport sector, which was booming in 2022, thanks to impressive growth of sales in China, has stalled in the first half of 2023, for several reasons. In China, as government subsidies had been projected to end at the end of 2022, many consumers rushed to buy vehicles in the last months of the year; demand naturally tailed off in early 2023. Moreover, the wave of infections that followed China's sudden reopening, and then its sluggish recovery, did little to support demand. And, lastly, elsewhere in the world, inventories of finished goods began the year at high levels, undermining production of new vehicles.

The second reason is that this same electrification of transports has also been subject to rapid technological change. Batteries for electric vehicles, for example, have seen major advances in recent months. One of these is the progress made in lithium-iron-phosphate (LFP) batteries. LFP is one of the two main technologies currently available on the market, the other being the nickel-manganese-cobalt (NMC) battery. Makers of LFP batteries, which had initially been held back by low autonomy and lack of reliability, have made vast progress in both areas, and LFP batteries have come into their own. The nickel-consuming NMC technology is still dominant. NMC's global market share was 60% in 2022; NCA (nickel, cobalt, aluminium oxide) batteries' was 8%, and LFP's, 30% (source: IEA). But in 2023, LFP batteries became dominant in China, precisely where the sector is growing the fastest, accounting for 66% of

Chinese output in the first six months of the year, according to the China Automotive Battery Innovation Alliance.

Given the strong growth in absolute terms in the electric battery sector, demand for nickel nonetheless continues to expand robustly. Demand is estimated by Goldman Sachs at 320,000 tonnes linked to the energy transition in 2022, or 11% of global consumption. Despite a sluggish start in the first half of 2023, demand should reach 460,000 tonnes, or 44% more than last year.

The third reason is on the supply side, where the market is also shifting fast. Production of class 1 nickel, in its purest form, was very constrained until now. Of the 2.7 million tonnes of nickel produced each year, only 1 million tonnes was class 1, and the market for did not seem to have much room to expand. But it is precisely this high-quality nickel that is needed to make batteries. Some Chinese producers have found a way to make more class 1 nickel through new refining techniques. Tsingshan, a Chinese conglomerate, announced that it would ultimately be able to produce about an additional 50,000 tonnes of class 1 nickel each year. Chinese producers are likely to add about 220,000 tonnes of class 1 nickel to the market in 2023, and 270,000 tonnes in 2024.

Understandably, the aforementioned factors have weighed on nickel prices.

Even so, demand for nickel is likely to continue to expand fast. We expect this to be driven, among other things, by the still-strong growth of EVs. Despite technological changes, NMC batteries are likely to continue to make up a very large share of global battery production in the coming years.

Hence, after a phase of supply-side expansion that the market will have to absorb, but has probably already partly priced in, the market is expected to see new bouts of deficits.

Especially as this new output from China and Indonesia is likely to be adjusted to price trends. Bank of America estimates producer prices at about \$17,000 to \$18,000 per tonne. Given the margin needed for mining and refining companies to operate, prices could well bottom out at current levels.

Aluminium

Aluminium is a flagship industrial metal and, as such, has been hit by the cyclical slowdown and the lack of recovery in China. It is down by 10% this year and is even more than 40% off its highs reached when the war in Ukraine broke out.

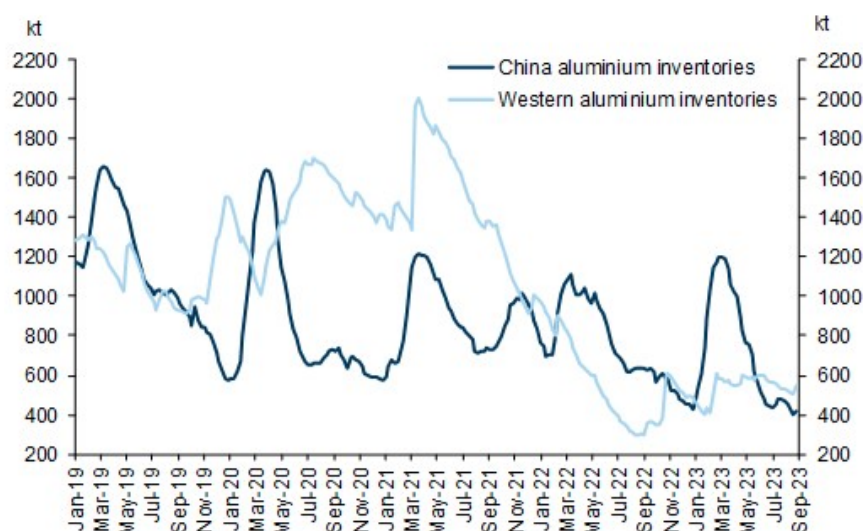
Demand has been driven down by the sluggish recovery of construction in China and slower manufacturing activity in Europe and the US.

As with copper, Chinese demand has, however, been more robust than expected. The high-speed roll-out of its renewable energies and electrical grid, and its electrification of its transports have boosted aluminium demand considerably. Demand from new applications has, in fact, more than offset, in China, weaker demand from the real-estate sector. Net demand rose by an estimated 522,000 tonnes⁶ from January to July 2023, compared to the same period one year earlier.

However, Chinese output also accelerated this year. Driven by government incentives and good weather, which allowed refineries to use hydropower to expand their production capacities, it is currently close to its highs. Increased output and ongoing destocking in of metals in China are why Chinese demand has so far had such little impact on aluminium prices.

Keep in mind, however, that drawdown of inventories built up during the long “zero-Covid” policy period in China, may have reached its limits. Inventories of metals, including aluminium, appear to have hit all-time lows and cannot absorb any new demand in the short term. This could cause imports to rebound in the coming months.

Aluminium inventories in China and worldwide, in thousands of tonnes



Source: Goldman Sachs Global Investment Research, Wind, Bloomberg; August 2023

⁶ Source: Goldman Sachs

In Europe, the opposite has occurred. Production has fallen off after the closing of many refineries hit by the spike in energy costs. But demand has also been undermined by the current weakness in manufacturing activity. Demand from the US has also slowed. Ex China demand fell by an estimated⁷ 6% from January to July compared to the same period last year, or about 1 million tonnes in the first half of 2023.

However, aluminium prices could turn back up in the coming months, driven by low existing inventories in both China and Europe, Chinese government assistance to traditional sectors (real estate in particular), and the acceleration of the energy transition, could cause demand to rise.

Zinc

Zinc has not been spared by the downward trend in all industrial metals. Prized mainly for its anticorrosion properties, it is used to make galvanised steel. Use of galvanised steel in manufacturing and in autos and construction has been slowed by sluggishness in these sectors.

However, zinc is also essential to the manufacture of solar panels and wind turbines, also for its anticorrosion properties. These two new applications should allow demand to expand steadily in the coming years. That's why zinc was added to the US list of critical metals in late 2021.

Zinc in all low-carbon technologies (solar, wind and electrical vehicles) is therefore likely to account for almost 20% of global demand by 2030, according to Bank of America.

By way of comparison, 12.9 million tonnes of zinc was produced in 2021, and remains constrained. As with many metals, the metal content of ore continues to decline over time. This factor, along with under-investment, makes a steep increase in zinc supply unlikely in the coming years.

⁷ Source: Goldman Sachs

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